

# Social Impact Assessment

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Project Number: 41924  
June 2014  
Document Stage: Final

## Nam Ngiep 1 Hydropower Project (Lao People's Democratic Republic)

Prepared by Nam Ngiep 1 Power Company Ltd. for the Asian Development Bank

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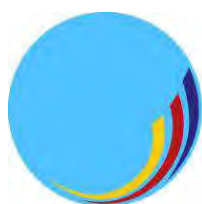
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# **Social Impact Assessment (SIA)**

**for**

# **Nam Ngiep 1 Hydropower Project**

Updated Version, June 2014



**NAM NGIEP 1  
POWER COMPANY**

## Table of Contents

TABLE OF CONTENTS.....	II
EXECUTIVE SUMMARY .....	VI
LIST OF TABLES .....	XXIV
LIST OF FIGURES .....	XXVII
ABBREVIATIONS .....	XXIX
<b>CHAPTER 1 - INTRODUCTION.....</b>	<b>1</b>
1.1 SCOPE OF THE SIA .....	3
1.2 STRUCTURE OF THE REPORT .....	4
<b>CHAPTER 2 - PROJECT DESCRIPTION.....</b>	<b>6</b>
2.1 PROJECT HISTORY.....	6
2.2 DESCRIPTION OF THE NNP1 HYDROPOWER PROJECT .....	8
2.3 DESIGN CHANGES TO REDUCE PROJECT IMPACTS.....	17
2.4 PROJECT IMPACT ZONE.....	19
<b>CHAPTER 3 - LEGAL FRAMEWORK.....</b>	<b>28</b>
3.1 NATIONAL LAWS AND POLICIES AND ADB POLICY REQUIREMENTS .....	28
3.2 GAP ANALYSIS.....	32
3.3 FRAMEWORK ON PUBLIC CONSULTATIONS AND INFORMATION DISCLOSURE .....	42
<b>CHAPTER 4 - STAKEHOLDER ANALYSIS AND INSTITUTIONS .....</b>	<b>47</b>
4.1 STAKEHOLDER’S INSTITUTIONS.....	51
4.2 GOVERNMENT INSTITUTIONAL ARRANGEMENTS FOR THE PROJECT.....	54
4.3 OVERALL PROJECT INSTITUTIONAL ARRANGEMENTS .....	56
4.4 ESD VIENTIANE OFFICE.....	59
4.5 ESD XAYSOMBOUN FIELD OFFICE .....	64
4.6 ESD BOLIKHAMXAY FIELD OFFICE.....	64
4.7 EXTERNAL AUDITOR .....	67
4.8 OTHER PARTNER ORGANIZATIONS .....	70
4.9 COORDINATION WITH TECHNICAL UNITS OF NNP1.....	70
<b>CHAPTER 5 - PUBLIC CONSULTATION, PARTICIPATION, AND DISCLOSURE.....</b>	<b>72</b>
5.2 CONSULTATION AND PARTICIPATION ACTIVITIES.....	75
5.3 DATA COLLECTION .....	76
5.4 THE PCD PROCESS FROM INITIAL STUDIES TO NOW .....	84
5.5 CONSULTATIONS WITH ETHNIC GROUPS .....	97
5.6 STAKEHOLDER INPUTS INTO PROJECT DESIGN.....	101
5.7 GRIEVANCE REDRESS MECHANISM .....	106

<b>CHAPTER 6 -</b>	<b>SOCIAL ANALYSIS UPSTREAM AREA .....</b>	<b>111</b>
6.1	OVERVIEW.....	111
6.2	SOCIOECONOMIC PROFILE .....	112
6.3	LAND ACQUISITION IMPACTS .....	116
6.4	IMPACTS ON LIVELIHOOD ACTIVITIES .....	116
6.5	IMPACT ON SOCIAL STRUCTURES.....	118
6.6	IMPACT ON ACCESS.....	119
6.7	IMPACT ON ETHNICITY, GENDER, AND VULNERABILITY .....	119
<b>CHAPTER 7 -</b>	<b>SOCIAL ANALYSIS UPPER RESERVOIR AREA .....</b>	<b>120</b>
7.1	SOCIOECONOMIC PROFILE .....	121
7.2	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	134
7.3	IMPACTS ON LIVELIHOOD ACTIVITIES .....	137
7.4	IMPACT ON SOCIAL STRUCTURES.....	139
7.5	IMPACT ON ACCESS.....	142
7.6	IMPACT ON GENDER ISSUES .....	142
7.7	IMPACT ON ETHNIC ISSUES .....	143
7.8	IMPACT ON VULNERABILITY .....	143
<b>CHAPTER 8 -</b>	<b>SOCIAL ANALYSIS LOWER RESERVOIR AREA.....</b>	<b>144</b>
8.1	SOCIOECONOMIC PROFILE .....	147
8.2	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	159
8.3	IMPACTS ON LIVELIHOOD ACTIVITIES .....	163
8.4	IMPACT ON SOCIAL STRUCTURES.....	166
8.5	IMPACT ON ACCESS.....	169
8.6	IMPACT ON GENDER ISSUES .....	169
8.7	IMPACT ON ETHNIC ISSUES .....	170
8.8	IMPACT ON VULNERABILITY .....	171
<b>CHAPTER 9 -</b>	<b>SOCIAL ANALYSIS CONSTRUCTION AREA .....</b>	<b>172</b>
9.1	SOCIOECONOMIC PROFILE .....	173
9.2	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	182
9.3	IMPACT ON LIVELIHOOD ACTIVITIES.....	185
9.4	IMPACT ON SOCIAL STRUCTURES.....	186
9.5	IMPACT ON ACCESS.....	189
9.6	IMPACT ON GENDER ISSUES .....	190
9.7	IMPACT ON ETHNIC ISSUES .....	190
9.8	IMPACT ON VULNERABILITY .....	191
<b>CHAPTER 10 -</b>	<b>SOCIAL ANALYSIS FAR DOWNSTREAM AREA.....</b>	<b>192</b>
10.1	SOCIOECONOMIC PROFILE .....	193
10.2	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	199
10.3	IMPACTS ON LIVELIHOOD ACTIVITIES .....	200
10.4	IMPACT ON SOCIAL STRUCTURES.....	200
10.5	IMPACT ON ACCESS.....	201
10.1	IMPACT ON ETHNICITY, GENDER, AND VULNERABILITY .....	202
<b>CHAPTER 11 -</b>	<b>SOCIAL ANALYSIS HOST COMMUNITIES .....</b>	<b>203</b>
11.1	SOCIOECONOMIC PROFILE .....	203

11.2	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	211
11.3	IMPACTS ON LIVELIHOOD ACTIVITIES .....	213
11.4	IMPACT ON SOCIAL STRUCTURES.....	215
11.5	IMPACT ON ACCESS.....	217
11.6	IMPACT ON GENDER ISSUES .....	217
11.7	IMPACT ON ETHNIC ISSUES .....	218
11.8	IMPACT ON VULNERABILITY .....	218
<b>CHAPTER 12 - SOCIAL ANALYSIS ACCESS ROAD .....</b>		<b>219</b>
12.1	OVERVIEW.....	219
12.2	SOCIOECONOMIC PROFILE .....	223
12.3	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	226
12.4	IMPACTS ON LIVELIHOOD ACTIVITIES .....	227
12.5	IMPACT ON SOCIAL STRUCTURES.....	228
12.6	IMPACT ON ACCESS.....	229
12.7	IMPACT ON GENDER ISSUES .....	230
12.8	IMPACT ON ETHNIC ISSUES .....	231
12.9	SOCIAL SAFEGUARDS COMPLIANCE AUDIT .....	231
<b>CHAPTER 13 - SOCIAL ANALYSIS TRANSMISSION LINE .....</b>		<b>232</b>
13.1	OVERVIEW.....	232
13.2	COMMUNITY PROFILES.....	233
13.3	SOCIO-ECONOMIC PROFILE.....	236
13.4	LAND ACQUISITION AND RESETTLEMENT IMPACTS .....	238
13.5	IMPACTS ON LIVELIHOOD ACTIVITIES .....	239
13.6	IMPACT ON SOCIAL STRUCTURES.....	240
13.7	IMPACT ON ACCESS.....	241
13.8	IMPACT ON GENDER ISSUES .....	241
13.9	IMPACT ON ETHNIC ISSUES .....	241
13.10	CONCLUSION.....	241
<b>CHAPTER 14 - SOCIOECONOMIC CONDITIONS AND IMPACTS .....</b>		<b>244</b>
14.1	SUMMARY OF SOCIAL CONDITIONS.....	244
14.2	SUMMARY OF LAND ACQUISITION AND RESETTLEMENT ASSET IMPACTS .....	279
14.3	SOCIAL IMPACTS ON LIVELIHOOD ACTIVITIES .....	282
14.4	SOCIAL IMPACTS ON SOCIAL STRUCTURES.....	286
14.5	SOCIAL IMPACTS ON ACCESS .....	289
14.6	SUMMARY OF SOCIOECONOMIC IMPACTS .....	289
<b>CHAPTER 15 - TRANSITIONAL IMPACTS OF CONSTRUCTIONS .....</b>		<b>293</b>
15.1	INTRODUCTION.....	293
15.2	LOCATION OF THE CONSTRUCTION SITES AND NEARBY COMMUNITIES.....	293
15.3	SOCIAL IMPACT AND RISKS ASSESSMENT .....	294
<b>CHAPTER 16 - ETHNICITY .....</b>		<b>299</b>
16.1	CONDITIONS OF ETHNIC GROUPS.....	299
16.1	SOCIAL IMPACT AND RISKS ASSESSMENT .....	309

<b>CHAPTER 17 - GENDER.....</b>	<b>320</b>
17.1 INTRODUCTION.....	320
17.2 GENDER-RELATED TOPICS.....	321
17.3 GENDER SPECIFIC SOCIAL IMPACT AND RISKS ASSESSMENT.....	330
<b>CHAPTER 18 - VULNERABLE HOUSEHOLDS .....</b>	<b>333</b>
18.1 VULNERABLE HOUSEHOLDS IN THE PROJECT AREA.....	333
18.2 YOUTH AND CHILDREN.....	334
18.3 SOCIAL IMPACTS AND RISKS ASSESSMENT .....	335
<b>CHAPTER 19 - SUMMARY .....</b>	<b>338</b>

## Executive Summary

### *(i) Introduction*

1. **Overall situation.** The Nam Ngiep 1 Hydropower Project will be located along the Nam Ngiep River in Xaysomboun and Bolikhamxay Province of Lao PDR, downstream of Nam Ngiep 2 Hydropower Project. The Project is set 41 km north of Pakxan, the capital of Bolikhamxay Province, which is located 145 km north-east of the national capital, Vientiane.
2. **Schedule of construction.** Main construction activities of NNP1 are scheduled to start in August 2014. The NNP1 reservoir is planned to be filled during the rainy season of 2018. Electricity will be generated from Commercial Operation Date (COD) in January 2019 onwards during a concession period of 27 years.
3. **Project history.** A project possibility of what would become NNP1 was identified in the early 1990s and a preliminary Feasibility Study (FS) was conducted by the French company Sogelerg Sogreah in 1991. At the request of the Government of Lao (GoL), Japan International Cooperation Agency (JICA) through Nippon Koei conducted a new FS of the Project in two phases, 1998-2000 and 2001-2002. KANSAI and Nippon Koei signed the Project Development Agreement (PDA) on 27th April 2006 for the further development of the Project and Electricity Generating Authority of Thailand (“EGAT”) joined the project a year later. However, the project has been delayed due to the global economic situation in 2008 and in 2011, new financial and technical plans were conducted and new social documents prepared, which have been revised from 2013-2014 to comply with national and international social safeguards standards.
4. **The Company.** In 2013, the Nam Ngiep 1 Power Company Limited was founded. Shareholders are now KANSAI (45%), EGAT international (30%), and Lao Holding State Enterprise (25%). On 27<sup>th</sup> August 2013 a Power Purchase Agreement with EGAT was signed by the Nam Ngiep 1 Power Company Limited and the same day the Concession Agreement was signed with GoL through the Ministry of Planning and Investment.
5. **Legal Framework.** Lao legislation, policies, and regulations regarding social requirements for hydropower development have been put in place during the last 10 years and provide the framework for the development, construction and operation of the project. Furthermore, the project complies, as noted in the Concession Agreement, with international standards, including the ADB Safeguard Policy Statement 2009 (SPS). The Project will thereby always follow the stricter standard. This includes above all the usage of the ADB benchmark of 10% or more impact on Project Affected Persons (PAPs) when assessing a significant impact, the exclusion of any land donations, and compensation for customary land regardless of formal land titles.

6. **The Social Impact Assessment.** The Social Impact Assessment (SIA) covers the characteristics and conditions of the people living in areas that will be directly or indirectly affected by the NNP1 Project and describes the impacts the Project will directly or indirectly have on them. Such communities are first described, including demographic details, socioeconomic conditions, livelihoods sources and status, and cultural practices. Anticipated possible project impacts are then evaluated, with mitigation measures outlined suggested for each type of impact. Mitigation measures are based on applicable laws, regulations, policies and guidelines of the Lao PDR, on the Concession Agreement (CA) between the Project and GoL, and the safeguard and social policies of the Asian Development Bank (ADB). Specific details on mitigation measures can then be found in the complementing social documents, the Resettlement and Ethnic Development Plan and the Social Development Plan.

*(ii) Description of the Project*

7. **Design and Location Alternatives.** The present dam site and power station location were confirmed in the original JICA Feasibility Study (1998-2002) on the basis of technical, financial, and economic considerations for electricity generation and export to Thailand. Subsequent detailed design ensured that basic safety standards for high hazard dams were applied to guarantee that no uncontrolled release of water will take place by: (i) enabling the passage of the maximum probable flood, and (ii) ensuring that the structure can withstand loads applied for the maximum credible earthquake.
8. **Dam and Reservoir.** NNP1 will build a 148 m high dam located in the Nam Ngiep River close to Hat Gniun village. The NNP1 catchment is 3,700 km<sup>2</sup> at the dam site. NNP1 reservoir will be narrow, long and deep. The reservoir effective storage capacity is 1,192 million m<sup>3</sup> at Full Supply Level (FSL, 320 MSL). At this level the total surface area of the reservoir will be 66.9 km<sup>2</sup>. The Minimum Operation Level will be at 296 MSL.
9. **Waterways.** Water will be spilled through 4 gates at the main dam, where electricity will be produced via turbines and then discharged into the re-regulation pond. To avoid fluctuations throughout the day downstream, a re-regulation dam will be built, through which a regulated discharge will take place. The re-regulation dam is 20.6m height and creates a re-regulation pond with a surface of 1.27 km<sup>2</sup> and an effective storage capacity of 4.6 million m<sup>3</sup> at Full Supply Level at 185.9m MSL. Above the Minimum Operating Level of 174 MSL, water will be used to generate electricity for local consumption.
10. **Power Stations.** A semi-underground power station will be sited on the left bank of the Nam Ngiep River downstream of the dam. The power station will allow electricity production with a rated output of 272.8 MW at the substation. The average annual energy production is estimated to be 1,515 GWh. The smaller powerhouse downstream of the re-regulation dam will allow electricity production with a rated output of 17.6 MW at the substation. The average annual energy production is estimated to be 105 GWh.



11. **Transmission Line.** The 230 kV transmission line, 125 km long, will connect the switchyard at the power station to the Nabong substation. For a large part the NNP1 transmission line will run in parallel with the NNP2 transmission line. At Nabong substation the NNP1 transmission line will link with several other transmission lines to a joint transmission line for power transmission to recipients in Thailand.
12. **Construction.** NNP1PC intends to award 4 main construction contracts. 1,000 to 1,800 workers will be engaged in construction work over a 5 year period. They will be based at three main camps downstream of the main dam on the left-hand river bank: the owner's camp, the main contractor's camp and the subcontractor's camp.
13. **Operation.** The Commercial Operation Date (COD) is presently planned for January 2019. The power station will operate on a daily basis in an intermittent mode. The exact production mode will depend on the actual availability of water in NNP1 reservoir and dispatches by EGAT.

### *(iii) Process and Methodology of Impact Assessment*

14. **Stakeholder Analysis.** A first step in the preparation of the SIA was the development of a stakeholder analysis. Key project stakeholders are the PAPs, GoL on local level and project-specific GoL agencies (Provincial Resettlement and Livelihood Restoration Committee and its secretariat, the Resettlement Management Unit; coordination as well as the grievance committees on village and district level), and the Company and its staff. Secondary stakeholders are the Project's shareholders and lenders and the overall GoL institutions at district, provincial, and national levels. External stakeholders are Non-Government Organizations (NGOs) and Media. The objective of this analysis was to determine the scope and levels of impacts by, and levels of interest in, the Project for different persons and organizations.
15. **NNP1PC Organizational Structure to Address Project Impacts.** NNP1PC has established inside the Environmental and Social Division (ESD) a Social Management Office (SMO) responsible for implementing and coordinating social activities of the Project to address impacts. The SMO is headed by a Senior Social Manager reporting to the ESD Deputy Managing Director. This person is responsible for the overall implementation of the social obligations set in the Concession Agreement, the REDP and the Action Plans, and of the necessary interactions and coordination with the numerous parties involved. The SMO has four units covering resettlement infrastructure, resettlement procedures, compensation and livelihood restoration, social development and monitoring, and documentation. These sections will be based in several offices at the Dam Site, in Sopyouak (Zone 2LR), in Thaviengxay (Zone 2UR), in Pakxan, and in Vientiane. This team will encompass more than 50 people, including national and foreign experts, supported by national and international consultants for specific topics such as nutrition, fisheries, etc.
16. **Stakeholder Consultations.** As of the beginning of 2014, there have been numerous public consultation and participation briefings, presentations and meetings, which have taken

place at the local, regional and national levels (see section 5.4 of the SIA). A dialogue has been established with the various stakeholders directly and indirectly involved in the Project and interested in the Project's public consultation programme, using a variety of appropriate methodologies and adaptations to local circumstances as visual presentations, translations, and face-to-face communication. This process has initiated the process towards Broad Community Support by the affected communities for the social and resettlement programme developed with them, including the grievance resolution mechanism. Consultations have been intensified since 2013 and since 2014 a designated and trained NNP1PC community consultation unit with Hmong and female members is actively and full time involved in regular village and household consultations. The objective of consultations has been twofold. First is to ensure communication between the Project with local government and communities, to inform directly and indirectly affected people about the Project, its impacts (both permanent and temporary), mitigation and compensation eligibility and entitlements, and the schedule of what will happen and when it will happen. The second direction has been from local government and Project Affected People (PAPs) back to the Project, so that planning and scheduling of activities can be improved, impacts avoided, alleviated and mitigated, and public concerns addressed. Public consultation and disclosure will continue during the construction and operation phases of the Project.

17. **Consultation Phases.** Consultations fall into three overlapping phases. The first phase had the objective to collect and disseminate information on the human and physical characteristics of the current environment in order to understand what impacts the Project might incur. During this phase, information about the project features and its implications for the social and physical environment was disseminated to stakeholders. The second phase involved consultation with the various stakeholders, ranging from comments in response to information gathered in the first phase, to adjustments made to proposed mitigation measures and alternatives. During this phase, the consent of affected ethnic communities in Zone 2LR was obtained. The third phase is continuing, and encompasses iterative involvement and participation of PAPs in project implementation. Livelihood restoration models will be developed in this phase, such as the layout of the new village and the design of the most appropriate irrigation system for the replacement of agricultural land.
18. **Quantitative Data.** Baseline surveys have been conducted with 100% of households of significantly impacted communities and a 10% sampling base in all other villages in the Project Impact Zone. These surveys on household level covered several topics, including household census, socioeconomic and income data, and health and education statistics. For all households experiencing land acquisition impacts, initial asset inventories have been produced for impacts in the Construction Zone, Upper and Lower Reservoir area, and Host Communities (see REDP). Updates will be prepared throughout 2014 in the different project zones.
19. **Qualitative Data.** This data has been analysed based on more detailed information gathered through qualitative data collection, using a variety of methods: *Focus group discussions* are an essential tool to allow people to express their ideas, which might be silent during village

consultation meetings, i.e. above all women and youth. By increasing the number of field visits of senior ESD experts, *direct observations* could be used to gather further information to integrate into the development of the social documents. This included above all topics regarding local culture and traditions, having a strong influence on people's understandings and aims, but little accessible via standard quantitative surveys. Direct observation has normally been carried over periods of a few days in regular intervals. *Structured and semi-structured interviews* have been conducted with key informants in the villages, including village heads and traditional leaders. During consultations with the villagers, several formal and informal workshops were initiated by the Project. *Workshops* bring together a wide range of stakeholders to analyse a particular problem, identify alternative ways to address the problem, and endorse a particular solution or set of actions to be taken. Senior social Project staffs conducted transect walks in and around every village of significantly impacted communities. Thereby, important information could be gathered, so for example about types of fencing, methods of cattle raising, compound structures of the residential areas, housing structures, religious activities, bridges, vegetable garden development, logging activities, vulnerable households, independent electricity generation by pico-hydropower installations, and water supply systems. Finally, mapping exercises have been conducted with PAPs, including mapping of topics like resources, institutions, health, and land use. All these methods initiated an inclusive planning process: on the one hand by consulting with villagers on livelihood possibilities and on the other hand by conducting surveys on possible livelihood activities, market depths, and fisheries.

20. **PAPs' Concerns and Company Responses.** During consultations with villagers, a series of issues have been discussed and consequently the Project adapted its designs to reduce impacts and to integrate PAPs' suggestions. The following selection of project design adaptations help amongst others to reduce adverse project impacts and increase PAPs' ownership of the Project's social plans and in result trust between the stakeholders:

#	Hmong Villagers Concern	Project Response	Timeframe of consultations
Z1/2UR	Inundation of most villages in 2UR and some villages of Zone 1	Reduction of the dam height and resulting full supply level to 320MSL	2000-2007
2UR	Villagers of 2UR do not want to lose access to the new main road D1	Resettlement to a new site has been given up in favour of relocation within village boundaries and increased livelihood activities	2013
2UR	Usage of the Drawdown Zone	The Project will support villagers regarding the usage of the drawdown zone, after having clarified legal issues with GoL and technical issues with agricultural engineers	2014
2LR	Selection of appropriate resettlement sites	Several sites have been assessed together with the PAPs from 2LR and Zone 3	2007-2012

2LR	The new resettlement area should be (a) an independent village, (b) the Government of Lao should transfer the new village land to belong to Hom District and (c) keep the title of a "Competition Combatant Village"	Ad (a), the Project will support the necessary administrative steps; Ad (b) a change of provincial boundaries (now with Xaysomboun) can be requested with support by the Project, but it is ultimately a GoL decision and unlikely Ad (c) the Project will support this and there is a general agreement among the RMU to also support this request	2011-2012
2LR	The reservoir clearance and cutting of economic wood must not exceed the water level (flood level)	The requested issue is clearly stated in the contract between the developer and GoL and biomass clearance is just allowed for inundated areas.	2011-2012
2LR	Propose project developer to extend rice supplement program from five to six years	The Project agreed to a rice supplement program of 5 years; worried about potential dependences created by such programs if lasting too long. At the same time the Project agreed that if an additional year is needed, GoL will address the Project for support. The rice supplement program should be seen as one aspect of the overall livelihood restoration support with a focus on enhancing ownership and independent livelihoods.	2011-2012
2LR	Beside the other village facilities which the project developer will construct, we also propose the project developer to construct village hall, this can be used as meeting hall, social activities shows (dancing show), culture and for other cultural events.	The Project agreed to this request and will construct a village hall in the resettlement site	2011-2012
2LR	Propose to expand the agriculture land to Houay Khee Guak area, also help and facilitate Mr. Thongphet to meet national committee to explain on villagers concerns.	Land allocation for the Houaysoup resettlement site has been increased trifold to 6000ha. Mr. Thongphet was able to meet with national authorities several times and additional the villagers were able to deliver letters to the National Assembly, containing their requests ; The Project is acquiring the necessary allocation certificates for the resettlement site for the people of 2LR and Zone 3	2011-2014
2LR	Propose Government to reserve	PAPs are allowed to continuingly	2011-2014

	the protection rights, the rights for land use and villagers' assets which will remain above full supply level (Livestock raising land, gardening land and others land)	use these areas in a sustainable way if not creating negative impacts on soil, water, forest, and environment in correspondence with national legislation and the corresponding watershed management plan.	
2LR	Soil Conditions in Houaysoup	Demonstration Farm and several site visits by PAPs; soil improvement starting in 2014; Trails starting from 2014 (see below)	2011-2014
2LR	Propose Government to allow villagers for fishery priority (fishing, selling and buying fish) in the reservoir of NNP1 and giving rights for management of forest in the area of existing village.	The usage of the reservoir is regulated by public authorities, which did not provide a definitive answer on the request. The Project supports the rights of PAPs on the reservoir, amongst others with a fisheries-co-management program.	2011-2014
2LR	The project developer should compensate paddy land by cash to each individual land owner before the resettlement, when they arrive to the new resettlement village they can also have land provided by the project developer.	GoL requests compensation in line with Decree 192/PM. Following this instruction, the Project suggests a formula which guarantees all PAPs replacement paddy fields equivalent to what they legally own and in the case of lands under customary use, what is allowed to be legalized under law, and for landless PAPs a minimum number of paddy fields in the resettlement site. This can be increased; final numbers will be depending on the number of people opting for resettlement to Houaysoup and those opting for self-relocation to places of their choice. This entitlement is outlined in the Draft Detailed Entitlement Matrix and can be adapted according to further negotiations between Project, GoL, and PAPs.	2011-2014
2LR	Propose project developer to compensate all affected assets before the resettlement as well as supports on transportation of all moveable assets of villagers to the new resettlement village.	The Project will compensate all affected assets as outlined in the Entitlement Matrix either in kind or in cash.  Support for transportation has been integrated into the Detailed Entitlement Matrices	2011-2014

2LR	Propose for agriculture land allocation to villagers at the same time as project construction period in order to allow villagers to clear the land and start planting other cash crops before the resettlement or resettlement earlier than planned.	The Project suggests improving soil before allocation of land in the resettlement site. PAPs will be included in the soil improvement program and a regulated and fair land allocation shall take place afterwards. The Project targets resettlement for 2017, one year before impoundment, allowing for a smooth transition.	2011-2014
2LR	Propose for job opportunities for 4 affected villages (especially the job which can be done by villagers) this will allow villager for better income.	The livelihood activities program includes a component for off-farm activities. Furthermore, the Labour Management Plan outlines measures to facilitate hiring local workers.	2011-2014
2LR	The village head man of Ban Nong/Sopyouak also proposed: The project developer and government must take back the rights of land use of Hat Gniun villagers and other villagers who stay in the new resettlement area and leave this land available for the newcomer (who will move to new resettlement site), this is to prevent other villagers living mixed with the new project resettlers.	After initial discussions with different ideas if existing land use should be continually tolerated or compensated and re-allocated, it has been decided that the Project will compensate all existing land users in the resettlement site, so that the full 6000ha can be handed over to the PAPs from Zones 2LR and 3.	2011-2014
2LR	Illiterate Hmong women fear not to understand the processes in the new resettlement site closer to urban areas	Resettlement preparation activities including trainings and literacy classes. Adoption of visual communication methods suitable for non-literate and appointment of female Hmong facilitators	2013-2014
2LR/Zone 3	Residential Area in the resettlement site	Change of resettlement layout to comply with villagers' choice of area	2013
2LR	Sustainability of Resettlement	Land development prior to resettlement; trials and pre-resettlement trainings; provision of a wide range of livelihood activity options in the resettlement site	2013/2014
2LR	Opportunities at the Resettlement Site especially for children and young adults	Establishment of school facilities up to high school; vocational training programs; scholarship program; on- and off-farm livelihood programs access to urban areas access to information technology infrastructure	2013/2014
2LR	Request for investigating land in	GoL rejected resettlement to an	2014

	Khammouan Province as potential resettlement site	area several hundred kilometres away	
2LR	Request for re-investigating land close to Phalavaek, amongst others supported by district officials in Phalavaek	The Project investigated together with GoL the area, and while there is residential land available close to Phalavaek town, there is little agricultural land available; definitively not for all four villages of 2LR. The Project will support further investigations to analyse potentials of the area for self-resettling households.	2014
2LR	Self-resettlement and cash compensation (richer households with land elsewhere in the district would like to self-resettle)	The Project agreed to three options for resettlers with PAPs and GoL: resettlement to Houaysoup, self-resettlement within the Project area of influence with follow-up activities by the project, and self-resettlement outside the Project area of influence with no follow-up by the Project; agreed criteria apply to each option to ensure economic viability of resettlement	2014
2LR	Younger people would like to split from their relatives and move to the resettlement site	The Project agrees to household splits as long as this does not cause the establishment of vulnerable households; several options are possible: <ul style="list-style-type: none"> <li>i. both new households move to the resettlement site,</li> <li>ii. both new households self-resettle,</li> <li>iii. one new household resettles to the resettlement site, the other household self-resettles</li> </ul>	2013-2014
2LR	Request for several community support activities in the existing villages	Provision of solar power panels to Houaypamom; provision of school equipment for Namyouak and Sopyouak; improvement of water supply system in Sopphuane; livelihood activities program will start mid of 2014	2014
Z3	Hatsaykham would like to join the Hmong communities from 2LR	Original plan of relocating villagers from Hatsaykham closer to the main village Hat Gniun has been revised to allow Hatsaykham PAPs to resettle to Houaysoup	2011-2012
Z3	Concerns on Water Supply	Investigations on additional water sources in the area together with PAPs; constant monitoring of water quality in the area as outlined in the EIA	2014

Z3/Z5	Influx of Workers and Impacts on communities	Implementation of mitigation measures outlined in the SDP including a Social Management and Mitigation Program	2010-2014
Z3/Z5	Added pressure on existing infrastructure and facilities	Construction of new, upgraded infrastructure in the resettlement site open for households from host communities; repair of existing infrastructure in the host communities	2012-2104
Access Road	Compensation Rates not high enough and request of field visit to other hydropower project	Visit to other large hydropower project facilitated. Compensation rates above local market rates	2014
Access Road	Dust in villages along the Access Road	Regular watering of the road; Construction of tarmac-sealed road within villages	2013-2014
Project-wide	Self-monitoring of PAPs	The Project has hired a Deputy Manager for Social Monitoring and will integrate the suggestion into the detailed monitoring action plan; for fish-catch-monitoring, self-monitoring by PAPs will be essential	2014
Project-wide	Access to fisheries in impacted areas	A fisheries-co-management program will be implemented	2014

Consultations, PAPs' Concerns, and Project Responses

#### (iv) *Project Zones*

21. **Project Zones.** 5 distinct regions are identifiable within the project impact area through geographic, administrative, and socioeconomic differences. Criteria for determining their boundaries include types and extent of project impacts on communities in each zone, corresponding closely with administrative boundaries. Zone 1 encompasses the area upstream of the reservoir in Thathom district (8 villages/1,005 households); Zone 2 encompasses the reservoir area, subzone 2UR the upper reservoir area (3 villages / 328 households) also in Thathom district, subzone 2LR the lower reservoir area (4 villages / 384 households) in Hom district; Zone 3 encompasses the construction site including the re-regulation pond (1 hamlet / 33 households) in Bolikhan district; Zone 4 encompasses the far downstream area (9 villages / 1,502 households) in Bolikhan and Pakxan district; and Zone 5 the host communities immediately downstream of the re-regulation dam (2 villages / 117 households) in Bolikhan district; zones 1 and 2 are located in Xaysomboun Province, the other zones in Bolikhamxay Province.
22. **Environment.** For environmental impacts, please refer to the Environmental Impact Assessment and connected environmental mitigation measures plans.
23. **Impacted Communities.** 26 villages and one hamlet are impacted along the Nam Ngiep River due to land acquisition and resettlement and as host communities. The 8 villages of Zone 1/upstream and 9 villages of Zone 4/far downstream are not expected to experiences



land acquisition and resettlement-related impacts. Such impacts the project will additionally have along the preliminary routed Transmission Line, which affects 24 villages, including 7 villages of Zones 4 and 5 whereas the 22kV distribution line to be used during construction will be installed within the existing line or right-of-way of existing roads; and the Access Road along 5 villages, including 3 villages of Zone 3 and 5. Thus, altogether the project impacts potentially 46 villages in the wider Project Impact Zone. However, just 9 villages and one hamlet are expected to experience a significant impact: 3 villages in the upper-reservoir area, losing a considerable part of their low-laying agricultural land; 4 villages in the lower reservoir area, which will be completely inundated and thus the villages have to resettle; 1 hamlet in the construction area, which will be inundated by the re-regulation reservoir and has to resettle; and 2 host communities, which have to share common resources and lose some privately held agricultural land in the designated resettlement site. All other villages along the Access Road and Transmission Line will lose a small portion of their lands, while the villages upstream of the reservoir and downstream of the re-regulation dam might experience water changes in the river and eventually impact on related socioeconomic activities.

24. **Significant Impact.** In the upper reservoir area, 178 households will be impacted by the inundation of the reservoir and thus by Land Acquisition and Resettlement of the Project. Out of these 178 households, 15 will lose their house. In the lower reservoir area, 384 households will lose their houses and most of their agricultural land, with just rubber plantations above FSL remaining, and thus have to resettle. So do 33 households in the construction area, inundated by the re-regulation pond. Next to sharing of common resources, just 21 households in the two host communities will have to be compensated for land acquisition in the resettlement site. Updated numbers on Land Acquisition for the Access Road and the Transmission Line can be found in the respective plans, but no household not already integrated in the numbers above is expected to experience significant impacts from these facilities.
25. **Transitional Impacts of Constructions.** Construction of the Project will mainly take place at the dam site and influencing areas close by in Bolikhan District. This does not just encompass the immediate construction, but includes workers camps, quarries, disposal areas, etc. Additional construction work will be going on along the access road and along the planned transmission line. It is estimated that there will be about 1,000 to 1,800 workers/day involved in the Project, depending on the stage during construction. There will be people from various backgrounds and from many different places involved, leading to several challenges: health, cultural relations, workers-communities relations, camp followers, gender and youth issues, and socio-economic changes. Preventive measures have to be taken and preventative procedures put in place. According measures are described in the Social Development Plan.

*(v) Social Impact Assessment of the Project Impact Zone*

26. Based on village-level information, an overall assessment of social impacts and related risks has been facilitated and is presented in the Social Impact Assessment. For similar information on environment, please refer to the Environmental Impact Assessment and connected environmental mitigation measures plans.
27. **Agriculture.** Rice is the most common crop. Other crops include maize, cassava, and chilli. Most of the agriculture crops are for household consumption, and the surplus is sold to nearby markets or to merchants coming into the villages. This varies between the different villages. Above all the villages in the lower reservoir area lack easy access to markets, reducing market-related income possibilities. Rice sufficiency is therefore not currently present for all households, again with a higher incidence of rice insufficiency in the villages to be resettled. Project impact on agriculture encompasses several aspects: LAR will reduce current agricultural land, while land development and soil improvement will increase productive agricultural land in the upper reservoir area and in the designated resettlement site. Productivity of land will be increased via the development of irrigation systems as well as improved agricultural techniques. Improved access to markets will provide higher profits from cash crops and increase its share on agricultural production. The Project will start livelihood activities from current production patterns and develop improvements together with the PAPs via trainings, trials, and coaching to enhance ownership and consequently sustainability.
28. **Livestock and Poultry.** Animal raising is common and in the Hmong communities additionally a status symbol. Nonetheless, numbers of large livestock vary considerably not just between villages, but between households. Livestock raising is a preferred livelihood option for many households throughout the project zones. Similar to crop cultivation improvements, the Project will work together with PAPs on an improvement of livestock raising. Consequently, an increase of livestock is expected; requiring an increasing amount of fodder. The Project will therefore develop pasture in the designated resettlement site and potentially in 2UR; it will also look at possibilities of value chains linking to crop cultivation. Furthermore, intensified livestock increases the risk of diseases; the Project will support veterinary services including an initial vaccination program for large livestock.
29. **Forest Utilization.** Households rely on collection of non-timber forest products (NTFPs) for daily food, household utilization, and for cash income above all in the lower reservoir area. However, over-usage throughout past years has reduced income possibilities. In the broader Project Impact Zone, a key aspect is the watershed management area. Impacts from the establishment of watershed management areas will on the one hand benefit from the protection of the watershed and related resources as part of a watershed management program, but on the other hand face constraints in traditional socioeconomic activities, for example swidden cultivation. Meanwhile, collection of NTFPs will become more sustainable, with the forests protected. This requires an adaptation of the livelihood activities of people living in the watershed management area. Logging is increasing in the

area independently from the Project. The Project will support public authorities in measures against illegal logging and the Project's biomass clearance will be done in a transparent way. In the designated resettlement site, forest management might be necessary to resolve resource conflicts between resettlers and host communities, even though the Nam Ngiep marks a clear boundary on entitlements to forest utilization between resettlers on the right-bank river side and host communities on the left-bank river side.

30. **Fisheries.** None of the households in the project area fish as the primary activity for household income, however all households mention fish as an addition to their diet. Some households, above all in the upper reservoir area, are going on fishing trips and sell their catch to local restaurants. Impoundment of the reservoir will lead to an adaptation process for fish populations. The reservoir itself can become a rich source of fisheries, if managed properly. New opportunities for fish populations and fish catch will above all develop in the impounded plain at the upper edge of the reservoir. This will attract outsiders and accordingly, as with the watershed management area, fisheries have to be managed as well. Changing from river to reservoir fishing requires furthermore different fishing techniques. A fisheries co-management program will be necessary for the river downstream of the re-regulation dam to regulate resource share between host communities and resettlers and for the villages in 2UR. In the whole catchment area, a fish-catch monitoring program will monitor any unexpected impacts on fisheries from this Project; it will also help differentiate eventual impacts from hydropower projects upstream.
31. **Other Livelihood Activities.** Increased access to urban areas, improvement of educational levels, and skill trainings will lead to new business and employment opportunities for PAPs. Project implementation itself will provide further opportunities for skilled PAPs along community activities and later on operation and maintenance; for labourers at the construction site; and for small-scale supply and service businesses at the construction site.
32. **Tenure Security.** The Project will support and ensure the provision of land titles for all replacement land in 2UR and the designated resettlement site, including community properties. This will directly increase tenure security for PAPs. Furthermore, these large-scale activities will increase the capacity for GoL staff, leading to a positive impact on tenure security in the districts. The location of the designated resettlement site close to the dam site will prevent future involuntary resettlement, as the development of a second project in this area is unlikely; also increasing tenure security.
33. **Income.** The total annual income (cash and imputed) varies strongly between the different project villages; again with higher incomes for the villages downstream, but with increasing opportunities for the villages upstream and the upper reservoir area due to their location at a new interregional road. Villagers in the lower reservoir area report the lowest income, with, however, again with differentiations between households inside the village. With the implementation of livelihood programs, the Project will have a positive impact, increasing PAPs' income levels. The Project commits to a doubling of incomes for all communities impacted by LAR as well as to bring poor PAPs at least above the national poverty line. Cash income will increase its share in total income due to an increasing important of cash

crops, livestock raising, and employment as outlined above.

34. **Expenditures.** Parallel to an increase of incomes, expenditures will increase as well. Family financial trainings will prevent large-scale consumption of cash compensation values and highlight the need for savings and investments. Increase of cash income and services available will also change expenditure patterns, increasing purchases of market products and services, leading to new local business opportunities.
35. **Population profiles and influx of outsiders.** The Project is expected to lead to an increase of population in the project zones due to better income opportunities and health and education services, reducing the trend of out-migration to urban areas and attract villagers moving in from other areas. The Project's cut-off-date will reduce the risk of short-term influx of squatters trying to gain from Project opportunities. The self-resettlement option might reduce the number of PAPs moving to the designated resettlement site. During the construction period, a strong population increase is expected in the construction site, encompassing workers as well as camp-followers. In-migration into the project area will change the demographic balance between the indigenous people on the one hand and lowland peoples who are often more educated and have more resources and knowledge. There are also risks that improved access to outsiders will increase possibilities of activities such as illegal mining, logging, trafficking and smuggling. The Project will mitigate these risks via its social management and mitigation program outlined in the SDP, including code of conducts, health check-ups, zoning for camp-followers, etc. On the long run, tourism might enhance in the area; expected is above all an influx of people from urban areas close by, enjoying picnics at the dam site or on the reservoir during weekends and holidays, as can be seen for example at a reservoir close to Vientiane Capital.
36. **Social Relations.** Social relations in the project area encompass neighbourhood relations in the villages, administrative structures, and mass organizations; the clan-system has a strong influence on local, but as well national and international social relations of Hmong communities. Access to urban areas and telecommunication will alter these social relations and intensify them towards the national and international level. Resettlement of five communities to the resettlement site, close to two host communities, will form new social relations. Allocation of residential land plots will be conducted in consultations among PAPs to allow maintaining positive social relations between neighbours and relatives.
37. **Social Disturbances.** A social management and mitigation program will be implemented by the Project to avoid social disturbances due to influx of workers and camp followers. Hatsaykham will resettle early to reduce the period of impacts from the construction site. Family financial trainings and joint bank accounts between husband and wife will reduce the risk of misuse of cash compensation values for alcohol, tobacco or gambling. Cultural and health awareness programs should reduce the risk of social disturbances due to access to urban areas.
38. **Local Authorities.** Within the framework of the GoL administrative system, the Project will closely cooperate with local authorities during the implementation of its resettlement and livelihood programs. Increasing demands on local authorities due to the Project will be

balanced by Project support. Day-to-day cooperation will increase the capacities of local authorities. Trainings will be conducted with local public health staff. The Project's scholarship program will allow recruitment of qualified, local civil servants, for example as teachers or health staff. Grievance institutions at village and district levels will be implemented or strengthened where already existing.

39. **Health.** Most villages potentially affected by NNP1 have health services within 2 hours of travelling. However, the four villages to be resettled from the lower reservoir area have just access to one village health centre, with the next district hospital difficult to access during the rainy season. The most common causes of illness are respiratory diseases, intestinal infections, and malaria. Potential serious threats to long-term health status in the Nam Ngiep River Basin are malnutrition and the increase of sexually transmitted infections, in relation to infrastructure and mining activities in the area; including workers and camp followers influx to the Project's construction site. The Project will mitigate risks and improve the overall health situation by implementing the Public Health Action Plan (see SDP), with provision of a village clinic in the resettlement site, repair of the health centre in Ban Piengta, training of public health officers, health awareness and immunization campaigns as well as monitoring of the development of community health status in the different villages, with a focus on resettlers.
40. **Education.** All villages have a primary school, but of variable qualities. Some teach up to Grade 2, while others have classes up to Grade 8. The number of teachers per student varies considerably and above all in the remote villages of the lower reservoir area, education facilities lack quality because of remoteness of villages. The numbers of people who have completed any formal education is still quite low, especially among more remote communities and particularly among girls. It is only those communities downstream from the proposed dam site, near roads and larger towns that have higher educational rates. Project impacts will be positive, with provision of improved educational facilities, in the resettlement site up to high school, a scholarship program, emphasis on girls' education, and an adult literacy program.
41. **Safety.** The Project will cooperate closely with public authorities to mitigate risks of decreased safety; implement cultural awareness campaigns; enforce strict regulations for Project workers; and constantly monitoring social developments around the dam site. This will mitigate theft risks, resulting on the one hand from an increase of population numbers in the resettlement site as well as the construction site and on the other hand from an increase of cash and movable assets in the communities. A traffic safety campaign as well as speed bumps in the villages should reduce the risk of traffic accidents along the upgraded access road.
42. **Youth.** The majority of people in the project zones are younger than 20 years. Several of the above outlined developments and impacts target specifically this young generation. Changes in livelihoods are an opportunity as well as a risk for young people, which the Project addressed with its livelihoods, awareness, and education programs. Urbanization might lead to changes of aspirations and role models. Employment opportunities for

motivated and qualified young people will increase their economic status within families, which will lead to changes in the overall social family structures, which will be addressed by specific awareness campaigns and the Project's constant community engagement.

43. **Access to Public Infrastructure.** The Project will repair or upgrade public infrastructure in the upper reservoir area, where it has no direct impact on existing infrastructure. Restricted access over the top edge of the reservoir to the other river side will be restored by the construction of two suspension bridges. In the resettlement site, new infrastructure will be built on national standards, improving access to infrastructure for PAPs from 2LR, Zone 3 and the host communities. Upgrade of the access road allows easier access to public infrastructure in the urban areas of Bolikhan and Pakxan.
44. **Access to Information and Services.** Increasing access to information and services is ongoing, above all in 2UR and close to the dam site. Improved access to services around the construction site and the resettlement site will derive from the Project's broad livelihood programs. Resettlement of 2LR will strongly improve access to electricity and telecommunication as well as to markets, health, and education.
45. **Access to Urban Areas.** As mentioned above, Project activities will strongly improve access to urban areas: by resettlement of communities to places closer to urban areas, but also by improving public infrastructure like bus stops and roads, reducing travel times for PAPs from 2LR, Zone 3, and Zone 5 to urban areas from several hours to less than an hour.
46. **UXOs.** The main project construction sites (dam & power station) are considered to have a relatively low risk of UXOs as are the other project areas of influence. Nonetheless, being adjacent to heavily impacted areas in the north-east of Xieng Khouang Province, the project has planned to take necessary measures to handle the remaining risk of UXOs.
47. **Physical Cultural Resources.** Physical resources of archaeological and cultural significance have been identified in Thahuea village at a tributary downstream of the dam. Findings of Neolithic remains by villagers in 2LR are currently under investigation by NNPI's Environmental Management Office to assess the sources and the significance of these findings.
48. **Ethnicity.** The population distribution by ethnicity shows that the 3 main ethnic groups in the project area are Lao Loum, Hmong, and Khmu. The distribution of ethnic groups tends to vary by zone. The not directly impacted villages upstream of the reservoir area tend to be either predominantly Lao or predominantly Khmu (Nasay, Nahong, and Phonhom). Only 1 village has about half Lao and half Hmong residents. The three villages at the upper edge of the reservoir are ethnically diverse. The largest community, Pou, has about 29% Lao Loum, 69% Hmong, and the rest Khmu. Piengta and Hatsamkhone are predominantly Lao Loum. The four villages in the lower part of the reservoir and the one village in the construction area are almost completely Hmong. Although Hmong are traditionally highland residents, these communities live in the river valley. Their settlements are quite recent with the oldest of the four villages having been established about 30 years ago. The lands were given to these villagers after the civil war, in gratitude for their support for the Pathet Lao.

Nonetheless, the Project assessed in the REDP that they fulfil the criteria of ADB's definition of indigenous people based on national discussions of customary land use rights and ethnic groups together with the criteria outlined in ADB's SPS. The communities downstream of the reservoir are entirely or predominantly Lao Loum, with the exception of Phonsy which is predominantly Khmu. 2 villages have significant populations of Hmong and Khmu (about 10% each) living with the majority Lao Loum. The Project will enhance the speed of general developments in Laos and thereby increase its impact onto these communities: with an increased mobility and thus spatial integration of remote communities with provincial and national centres, increased social and economic interaction between ethnic groups leads to new forms of hybrid cultures and a transformation of traditional practices of social life. Topics encompass a broad range from house designs, traditional health practices, tools and livelihood activities to social and leadership structures. Some economic impacts are not anticipated to be great on affected Hmong communities, as these villages have already altered their agricultural base, no longer engage in pioneering slash-and-burn cultivation, and have been settled in the same locations for up to 30 years. Their economic base has therefore largely been integrated into the broader Lao model of settled agriculture and paddy rice cultivation. However, relocation to Houaysoup resettlement site will involve change to important livelihood models such as livestock ownership. The Project is aware of this development and will support a pro-active and confident handling of it by the ethnic groups. This includes preparation work and trainings for ethnic communities including literacy programs, cultural awareness activities, and integration of traditional village structures into the Project's decision and consultations structure to develop ethnicity-sensitive development plans.

49. **Gender.** Gender roles vary between the different villages. In general, marketing exchanges including both the purchase and sale of goods in distant towns are predominantly male activities, as are political leadership roles. On the other hand, household and local work is mainly conducted by women. Schooling for women is lower than for men. The main ethnic group in the project area is organized patriarchally and above all women lack language skills and confidence to speak in public. The Project is not expected to have major gender-specific adverse impacts, with three exceptions: the possibility of inadequate nutrition during the first years of the Project, while the newly resettled villagers are getting used to their new homes and fields; possible health and social impacts of the workers' camp and the largely young male migrant workers during project construction; and failure to consider gender divisions of labour when preparing and implementing livelihoods support programs. Aside from this possible adverse impact, women are expected to be among the principal beneficiaries of project. Manual activities will be replaced by providing accessible and clean drinking water supply systems, contributing to reduction of carrying water, as well as to improved health. The number of women and children attending the school will be increased by providing good primary and secondary educational facilities such as school, teachers etc., and increased care and health information for women and children through the improvement of village and district health facilities. In addition, older women will be given skill training in handicrafts and other economic activities; furthermore, and above all,

according marketing opportunities will be assessed and supported via the livelihood activity programs. The Project will implement a Gender Equity policy; this includes a pro-active policy during consultations and gender equality in all legal matters.

50. **Vulnerability.** Vulnerable Households are households who might suffer disproportionately from the loss of fixed and movable assets, other assets, and production base; or face the risk of being marginalized from the effects of resettlement. As required in the SPS SR3 (para 28) particular attention to the needs of disadvantaged or vulnerable groups, especially those below the poverty line, the landless, the elderly, female headed households, women and children, Indigenous Peoples, and those without legal title to land. In the project area, a vulnerable households falling under these categories have been identified. In the Lao context where majority have no legal title to the land, a combination of other factors may need to be considered before classifying them under the vulnerable category. Affected communities will constantly be monitored for vulnerable households, which will be given special attention. Vulnerable households face the same impacts as other people in the Project Impact Zone. However, they are more sensitive to external shocks and therefore all the impacts described can have a stronger impact on their live.
  
51. This version of the SIA has been published in June 2014. This SIA will be revised whenever major mile stones have been reached and/or new information is available to integrate.



## List of Tables

Table 1: Steps towards development of the SIA .....	4
Table 2: Project History .....	7
Table 3: Technical Specifications Main Dam .....	10
Table 4: Technical Specifications Re-Regulation Dam .....	10
Table 5: Technical Specifications Main Powerhouse .....	11
Table 6: Technical Specifications Re-Regulation Powerhouse .....	11
Table 7: Sizes of Additional Functional Areas during Construction Phase.....	12
Table 8: Access road: Improved Existing Road, New Permanent Road, and New Temporary Road.....	13
Table 9: Technical Specifications Main Reservoir .....	15
Table 10: Technical Specifications Re-regulation Reservoir .....	15
Table 11: NNP1 Construction Schedule.....	16
Table 12: Project Design Adaptation to Avoid or Mitigate Project Impacts.....	18
Table 13: Population and Number of Households in the Project Area .....	26
Table 14: Land Use in Project Zones.....	27
Table 15: Selection of Social Standards to be applied by NNP1.....	32
Table 16: Gap Analysis ADB SPS SR2 / National regulations .....	39
Table 17: Gap Analysis ADB SPS SR3 / National regulations .....	42
Table 18: Summary of Stakeholders .....	51
Table 19: Initial Social Project Studies.....	77
Table 20: PCD Process with PAPs from 2UR.....	87
Table 21: PCD Process with PAPs from 2LR.....	89
Table 22: PCD Process with PAPs from Zone 3.....	90
Table 23: PCD Process with PAPs from Zone 5.....	92
Table 24: PCD Process on District and Provincial Level .....	95
Table 25: PCD Process on the National and International Level.....	96
Table 26: Consultations, PAPs' Concerns, and Project Responses.....	105
Table 30: Population Profile of Communities in Zone 1 .....	112
Table 31: Infrastructure of Village in Upstream Area .....	113
Table 32: Land use pattern of the 8 villages in the Upstream Area .....	115
Table 33: Yearly Household Cash Income in Zone1 - Upstream Area .....	116
Table 34: Total Population and Household Number in Zone 2UR .....	121
Table 35: Age Distribution in the 3 villages of Zone 2UR.....	122
Table 36: Ethnicities of the Affected People of Zone 2UR .....	123
Table 37: Infrastructure of Villages in Zone 2UR .....	125
Table 38: Levels of Formal Education in Zone 2UR .....	126
Table 39: Infectious diseases in 2UR .....	126
Table 40: Land Use Pattern of Zone 2UR.....	129

Table 41: Rice Sufficiency Production Rates of HHs on a Yearly Basis .....	130
Table 42: Comparison Yield of Rice Production in 2UR .....	130
Table 43: Yearly Average Household Cash Income in 2UR.....	132
Table 44: Yearly Household Expenditures in 2UR.....	133
Table 45: Vulnerable person profile of each village in 2UR.....	134
Table 46 Projected Affected People of Zone 2LR.....	147
Table 47: Age and Sex Structure of Ban Houaypamom .....	147
Table 48: Age and Sex Structure of Ban Sopphuane .....	148
Table 49: Age and Sex Structure of Ban Sopyouak .....	148
Table 50: Age and Sex Structure of Ban Namyouak .....	148
Table 51: Ethnicity of Affected People of Zone 2LR .....	149
Table 52: Membership in Mass Organizations in Zone 2LR .....	149
Table 53: Infrastructure Facilities and Services in Zone 2LR .....	150
Table 54: Formal Education Profile of 2LR .....	151
Table 55: Infectious Diseases Found in the Surveyed Villages in Zone 2LR .....	152
Table 56: Land Use Patterns of Villages in Zone 2LR, in ha. ....	153
Table 57: Land Use Patterns of Villages in Zone 2LR, in ha. ....	154
Table 58: Size of Land Holding of Households in Zone 2LR .....	154
Table 59: Area of Rice Cultivation in Comparison to Other Agricultural Activities .....	154
Table 60: Comparison Yield of Rice Production .....	155
Table 61: Rice Sufficiency Production Rates of Households on a Yearly Basis .....	155
Table 62: Annual Household Cash Income of Affected People of Zone 2LR .....	157
Table 63: Annual Household Expenditures of Affected People in Zone 2LR .....	158
Table 64: Potential Vulnerable Household of Zone 2LR.....	159
Table 66: Population Profile of Zone 3.....	173
Table 67: Age and Sex Structure of Hatsaykham .....	174
Table 68: Infrastructure of Hatsaykham .....	176
Table 69: Education Profiles of Affected People of Zone 3 .....	177
Table 70: Infection Diseases Found in the Surveyed Villages of Zone 3 .....	177
Table 71: Land Use Pattern of Zone 3, Khum Hatsaykham .....	179
Table 72: Rice Sufficiency in Khum Hatsaykham .....	180
Table 73: Livestock in Hatsaykham.....	180
Table 74: Yearly Household Income Activities .....	181
Table 75: Vulnerable Households in Hatsaykham.....	182
Table 76: Population Profile of the Affected People of Zone 4 .....	194
Table 77: Infrastructure of Village in Downstream Area .....	195
Table 78: Education Levels of Villagers in Zone 4 (Downstream) .....	195
Table 79: Land Use in Zone 4 .....	197
Table 80: Sources of Income for Villages in Zone 4 .....	199
Table 81: Household Expenditures for Villages in Zone 4.....	199
Table 82: Population profile of Ban Hat Gniun & Thahuea.....	203
Table 83: Typical House of Lao Loum, Ban Hat Gniun.....	204

Table 84: Infrastructures of Ban Hat Gniun and Ban Thahuea.....	205
Table 85: Numbers of Students of Ban Hat Gniun School .....	206
Table 86: Education profile of PAPs of Ban Hat Gniun .....	206
Table 87: Land Use Patterns of Ban Hat Gniun and Ban Thahuea .....	207
Table 88: Average Consumption per Month per Person in Zone 5 .....	210
Table 89: Average Non-Food Expenditures per Month per Person in Zone 5.....	210
Table 90: Vulnerable person profile of each village in Zone 5.....	211
Table 91: Profile of the Affected People from the Construction of the Access road.....	223
Table 92: Existing Infrastructure of Villages Directly Affected by Access Road .....	224
Table 93: Affected Villages, Households and Population Distribution .....	235
Table 94: Existing Infrastructure and Facilities within the Villages affected by the Transmission Lines.....	236
Table 95: Land Use and Vegetative Cover along the 230 kV and 115 kV Lines.....	237
Table 96: Main Sources of Income of Villagers within the Project Area .....	238
Table 97: Population Changes in the Project Area, 2007/8 to 2011.....	246
Table 98: Infrastructure of villages in project Area .....	250
Table 99: Age Distribution .....	250
Table 100: Area of Paddy Field and Swidden Cultivation in 2UR, 2LR, and Zone 3 .....	251
Table 101: Yearly Rice Sufficiency Production of Households in Zones 2UR, 2LR, and Z3	252
Table 102: Paddy Land in the Project Area, by Zone .....	252
Table 103: Major Livestock Numbers in Affected Villages in the Project Area .....	255
Table 104: Fish and Fisheries Survey Locations along the Nam Ngiep River.....	256
Table 105: Summary of Fishing Practices .....	258
Table 106: Declared Cash Income per year of Communities in Zones 1, 4, and 5.....	262
Table 107: Declared Annual Cash Income of Communities in 2UR, 2LR, and Zone 3 .....	262
Table 108: Poverty incidence and inequality in Lao PDR, 1992 to 2008.....	267
Table 109: GDP Growth Rate of Lao PDR, 2006-2010 .....	268
Table 110 Education Levels per Village and Project Zones.....	276
Table 111: Top Ten Diseases and Causes of Illness in 2005-2006 .....	277
Table 112: Public Health Facilities and Public Health Personnel in the Project Area .....	278
Table 113: Overview of Project Impacts on Properties .....	280
Table 114: Summary of Loss of Land .....	281
Table 115: Summary of Impact on Houses and Structures .....	281
Table 116: Impact on Fruit Trees and Economical Trees .....	282
Table 117: List of Public Infrastructure to be Affected by the Project .....	282
Table 118: Summary of Socioeconomic Impacts and Mitigation Measures.....	292
Table 119: Summary of Social Impacts of Construction .....	298
Table 120: Ethnicity of Population.....	300
Table 121: Population of Ethnic Groups in the Project Area.....	302
Table 122: Key traditional cultural characteristics of ethnic groups in the project area .....	305
Table 123: Impact on Graves .....	310
Table 124: Summary of Gender-Divided Activities .....	326

Table 125: Project Impacts Regarding Gender Topics .....	331
Table 126: Vulnerable person profile of each village .....	334
Table 127: Impact on Vulnerability and Overall Mitigation Measures .....	337
Table 128: Overall social impacts of the NNP1 Hydropower Project.....	342
Table 129: Summary of Social Impacts Zones 1, 2UR, 2LR, and 3 .....	348
Table 130: Summary of Social Impacts Zones 4 and 5, Access Road, and Transmission Line.....	353

## List of Figures

Figure 1: Location of the Nam Ngiep Hydropower Project.....	8
Figure 2: Locations of Main Features .....	9
Figure 3: Alignment of Transmission Lines .....	12
Figure 4: Road route plan for new access roads in the construction area.....	13
Figure 5: Road route plan for new access roads in the construction area.....	14
Figure 6: Dam site with schematic technical project drawing .....	16
Figure 7: Map of NNP 1 Project Impact Zone.....	23
Figure 8: GoL-NNP1 Institutional Arrangements for the NNP1 Project .....	53
Figure 9: ESD – Organizational Structure.....	58
Figure 10: Consultations among PAPs about project suggestions.....	73
Figure 11: PAPs’ remarks and suggestions .....	74
Figure 12: Discussion of Resettlement Site Development by PAPs based on 3D model. ....	75
Figure 13: Schematic of the Grievance Procedure for the NNP1 Project .....	109
Figure 14: Map of villages of Zone 1 – Upstream Area .....	111
Figure 15: Map of villages of Zone 2UR .....	120
Figure 16: Map of Affected Area of Ban Piengta .....	135
Figure 17: Map of Affected Area of Ban Hatsamkhone.....	135
Figure 18: Map of Affected Area of Ban Pou .....	136
Figure 19: Map of Affected Villages of Zone 2LR .....	144
Figure 21: View of Ban Houaypamom.....	145
Figure 22: View of Ban Sopphuane .....	146
Figure 23: View of Ban Sopyouak .....	146
Figure 24: View of Ban Namyouak.....	147
Figure 25: Map of Affected Area of Ban Houaypamom.....	160
Figure 26: Map of Affected Area of Ban Sopphuane .....	161

Figure 27: Map of Affected Area of Ban Sopyouak and Ban Namyouak .....	162
Figure 28: Khum Hatsaykham .....	173
Figure 29: Typical House Style in Ban Hatsaykham.....	175
Figure 30: Map of Affected area of Khum Hatsaykham by Inundation .....	183
Figure 31: Map of Affected area of Khum Hatsaykham by Facilities.....	184
Figure 32: Location of villages of Zone 4 - Downstream Area.....	193
Figure 33: Marked land use at Houay Soup by households from Hat Gniun.....	212
Figure 34: Marked land use at Houay Soup by households from Hatsaykham .....	212
Figure 35: PAPs indicating land use / claims in Houay Soup .....	213
Figure 36: Access Road from Ban Nonsomboun to project site.....	221
Figure 37: Temporary and Permanent Access Roads between Ban Hat Gniun and Dam Site.....	222
Figure 38: Conditions of the Existing Access Road around the Affected Communities .....	224
Figure 39: Transmission Lines connecting NNP1 dam site .....	233
Figure 40: Fish and fisheries survey locations along the Nam Ngiep River.....	257
Figure 41: Gini-Index development in Lao PDR .....	266
Figure 42: Map of Lao PDR: 72 District identified as poor .....	270
Figure 43: Schools in the project area .....	274
Figure 44: Typical Houses of each Ethnicity in the project area.....	306
Figure 45: Geographic Conditions of the Reservoir Area .....	316
Figure 46: Surrounding Area of 2LR.....	319
Figure 47: Gender Differences in Traditional Inheritance Practices .....	328

## Abbreviations

<b>Abbreviation</b>	<b>Full Name</b>
<b>ADB</b>	Asian Development Bank
<b>AIDS</b>	Acquired Immune Deficiency syndrome
<b>AIT</b>	Asian Institute of Technology (of Thailand)
<b>APs</b>	Affected People
<b>ARI</b>	Acute Respiratory Infection
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASL</b>	Above sea level
<b>AusAID</b>	Australian Agency for International Development
<b>Avail.P</b>	Available Phosphorus
<b>AVG</b>	Average
<b>B.</b>	“Ban” - Village in Laotian Language
<b>BCS</b>	Broad Community Support
<b>BOD</b>	Biological Oxygen Demand
<b>BOOT</b>	Build-Own-Operate-Transfer
<b>BOT</b>	Built-Operate-Transfer
<b>BP</b>	Bank Procedure (World Bank)
<b>CA</b>	Concession Agreement
<b>CAD</b>	Computer Assisted Drafting
<b>CAS</b>	Country Assistance Strategy
<b>CBD</b>	Convention on Biological Diversity Economic efficiency
<b>CBR</b>	Crude Birth Rate
<b>CDF</b>	Community Development Fund
<b>cent/kWh</b>	Cent per kilo Watt hour
<b>CFRD</b>	Concrete Faced Rock fill Dam
<b>CITES</b>	Convention on International Trade in Endangered Species
<b>cm.</b>	Centimetre
<b>cm<sup>3</sup>/s</b>	Cubic centimetre per second
<b>CMR</b>	Child Mortality Rate
<b>COD</b>	Commercial Operations Date
<b>CPS-NSC,2002</b>	CPS-National Statistical Center,2002
<b>CWR</b>	Centre for Water Research of Western Australia
<b>DAFEO</b>	District Agriculture and Forestry Extension Office
<b>DAFO</b>	The District Agriculture Forestry Office

<b>DBH</b>	Diameter at Breast Height
<b>DCC</b>	District Coordination Committee
<b>DDT</b>	Dichloro-Diphenyl-Trichlorethane
<b>DEPD</b>	Department of Energy Promotion and Development
<b>DESIA</b>	Department of Environmental and Social Impact Assessment inside MoNRE
<b>DGC</b>	District Grievance Committee
<b>DGRC</b>	District Grievance Redress Committee
<b>DHF</b>	Dengue Haemorrhagic Fever
<b>DHO</b>	District Health Office
<b>DHPM</b>	Department of Hygiene and Preventive Medicine
<b>DiF</b>	The Division of Fisheries
<b>DLF</b>	Department of Livestock and Fisheries
<b>DOE</b>	Department of Electricity
<b>DOF</b>	Department of Forest
<b>DOL</b>	Department of Land
<b>DPWT</b>	Department of Public Works and Transport
<b>DRWG / DWG</b>	District Resettlement Working Groups / District Working Groups - old terminology; NNPI's relevant institution is labelled DCC - District Working Group
<b>DS</b>	Downstream
<b>DSCR</b>	Debt Service Cover Ratio
<b>DWA</b>	Defined Works Area
<b>EAC</b>	Environmental Assessment Committee
<b>EAMP</b>	Environmental Assessment and Management Plan
<b>EC</b>	Electrical Conductivity
<b>ECA</b>	Export Credit Agencies
<b>ECCD</b>	Early Childhood Care for Development
<b>ECRD</b>	Earth Core Rockfill Dam
<b>EdL</b>	Électricité du Lao
<b>EDP</b>	Ethnic Development Plan, one component of the REDP
<b>EGAT</b>	Electricity Generating Authority of Thailand
<b>EGATi</b>	EGAT international
<b>EIA</b>	Environmental Impact Assessment
<b>EIRR, FIRR</b>	Economic/Financial Internal Rate of Return
<b>EL.( ) m</b>	Meters above Sea level
<b>EM</b>	Environmental Manager
<b>EMC</b>	Environmental Management Committee

<b>EMMP</b>	Environmental Management & Monitoring Plan
<b>EMMU</b>	Environmental Management and Monitoring Unit
<b>EMO</b>	Environmental Management Office
<b>EMU</b>	Environmental Management Unit
<b>EOD</b>	Explosive Ordnance Disposal
<b>EPF</b>	An Environmental Protection Fund
<b>EPI</b>	Expanded Program of Immunization
<b>EPL</b>	The Environmental Protection Law (National Law 02/99)
<b>ERIC</b>	Environmental Research Institute of Chulalongkorn University
<b>ESD</b>	Environment and Social Division
<b>F/C</b>	Forage species/carnivorous species ratio
<b>F/S</b>	Feasibility Study
<b>FAO</b>	Food and Agriculture Organization of The United Nations
<b>FIPC</b>	Forest Inventory and Planning Centre
<b>FS, F/S</b>	Feasibility Study
<b>FSL</b>	Full Supply Level
<b>FTA</b>	Federal Transit Administration
<b>FWL</b>	Flood Water Level
<b>GDP</b>	Gross Domestic Product
<b>GHG</b>	Greenhouse Gases
<b>GIS</b>	Geographical Information System
<b>GMS</b>	Greater Mekong Sub-region
<b>GoL</b>	Government of Lao PDR
<b>GPS</b>	Global Positioning System
<b>GRID</b>	Gender Resource and Information Development (GRID) Center
<b>GRM</b>	Grievance Redress Mechanism
<b>GWh</b>	Giga Watt Hour (one million watt hour)
<b>H/H, HH</b>	Household
<b>Ha</b>	Hectare
<b>HC</b>	Head Construction Contractor
<b>HCC</b>	Head Construction Contract
<b>HEPP</b>	Hydroelectric Power Project
<b>HH</b>	Households
<b>HIV</b>	Human Immune Deficiency Virus
<b>HRD</b>	Human Resources Development
<b>HV</b>	High Voltage



IAP	Independent Advisory Panel
IAR	Impacted Asset Registration
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association (a unit of the World Bank groups)
IEE	Initial Environmental Examination
IFC	International Finance Corporation
IMA	Independent Monitoring Agency
IMF	International Monetary Fund
IMR	Infant mortality Rate
IOL	Inventory of Loss
IPDP	Indigenous Peoples Development Plan
IPP	Independent Power Producer
IRR	Internal Rates of Return
IRRI	International Rice Research Institute
IUCN	World Conservation Union (The International Union for Conservation of Nature)
JBIC	Japan Bank for International Cooperation
JICA	Japan International Cooperation Agency
JSC	Joint Steering Committee
KANSAI	The Kansai Electric Power CO.,INC.
km	Kilometre
km <sup>2</sup>	Square Kilometre
kV	Kilo volt
kVA	Kilo Volt-Ampere
kW	Kilo watt
LACP	Land Acquisition and Compensation Plan
LAK	Lao Kip
LANIC	Lao National Inter Committee
LAR	Land Acquisition and Resettlement
LFNC	Lao Front for National Construction
LHSE	Lao Holding State Enterprise
LIRP	Livelihood and Income Restoration Plan
LNCE	Lao National Committee for Energy
LNFC / LFNC	Lao National Front for Construction / Lao Front for National Construction
LNTA	Lao National Tourism Administration
LPRP	Lao People's Revolutionary Party
LRC	Livelihood Restoration Committee

<b>LRHS</b>	Lao Reproductive Health Survey - 2000
<b>LSHE</b>	Lao Holding State Enterprises
<b>LTA</b>	Lenders' Technical Adviser
<b>LV</b>	Low Voltage
<b>LWU</b>	Lao Women Union
<b>m</b>	Meter
<b>m<sup>2</sup></b>	square meter
<b>m<sup>3</sup></b>	Cubic meter
<b>m<sup>3</sup>/s</b>	Cubic meter per second
<b>MAF</b>	Ministry of Agriculture and Forestry
<b>MAR</b>	Mean Annual Runoff
<b>MCTPC</b>	Ministry of Communication, Transportation, Post and Construction
<b>MDB</b>	Multilateral Development Bank
<b>MEM</b>	Ministry of Energy and Mines
<b>MIH</b>	Ministry of Industry and Handicrafts
<b>MLA</b>	Multilateral Agencies
<b>mm.</b>	Millimetre
<b>MMR</b>	Maternal Mortality Rate
<b>MOH</b>	Ministry of Health
<b>MOI</b>	Ministry of Industry
<b>MOL</b>	Minimum Operation Water Level
<b>MoM</b>	Minutes of Meeting
<b>MoNRE</b>	Ministry of Natural Resources and Environment
<b>MOU</b>	Memorandum of Understanding
<b>MRC</b>	Mekong River Commission
<b>MSL</b>	Mean Sea Level
<b>MSY</b>	Maximum Sustainable Yield
<b>MW</b>	Mega Watt (one million watt)
<b>MWL</b>	Maximum Water Level
<b>N/A</b>	Not Applicable
<b>NAFRI</b>	National Agriculture and Forest Research Institute
<b>NBCA</b>	National Biodiversity Conservation Area
<b>NCC</b>	National Consulting Company
<b>NEAP</b>	National Environmental Action Plan
<b>NEM</b>	New Economic Mechanism
<b>NEPO</b>	National Energy Policy Office

<b>NGO</b>	Non-Government Organization
<b>NGPES</b>	Nation Growth and Poverty Eradication Strategy
<b>NNP1</b>	The Nam Ngiep Hydropower Project 1
<b>NNP1PC</b>	Nam Ngiep 1 Power Company
<b>NPA</b>	National Protected Area (the preferred term is NBCA)
<b>NSC</b>	National Statistics Centre (of Lao PDR)
<b>NTEC</b>	Nam Theun 2(NT2) Electricity Company
<b>NTFP</b>	Non-Timber Forest Product
<b>NTPC</b>	Nam Theun 2 Power Company
<b>NUOL</b>	National University of Laos
<b>NWL</b>	Normal Water Level
<b>OD</b>	Operational Directive (World Bank)
<b>ODA</b>	Official Development Assistance
<b>OHS</b>	Occupational Health and Safety
<b>OP</b>	Operational Policy (World Bank)
<b>PAFO</b>	Provincial Agriculture and Forestry Office
<b>PAP</b>	Project Affected People
<b>PCD</b>	Public Consultations and Disclosure
<b>PCPP</b>	Public Consultation and Participation Process
<b>PDA</b>	Project Development Agreement
<b>PDR</b>	People Democratic Republic
<b>PE</b>	Primary Energy
<b>PGRC</b>	Provincial Grievance Redress Committee
<b>PHO</b>	Provincial Health Office
<b>PIB</b>	Public Information Booklet
<b>PM</b>	Prime Minister
<b>PMF</b>	Probable Maximum Flood
<b>PMM</b>	Protection and Mitigation Measures
<b>PMO</b>	Prime Minister's Office
<b>PMP</b>	Probable Maximum Precipitation
<b>PPA</b>	Power Purchase Agreement
<b>PPE</b>	Personal Protective Equipment
<b>PRA</b>	Participatory Rural Appraisal
<b>PRLRC</b>	Provincial Resettlement and Livelihood Restoration Committee
<b>PRP</b>	Preliminary Resettlement Plan
<b>QA</b>	Quality Assurance

<b>RAP</b>	Resettlement Action Plan
<b>RCC</b>	Roller Compacted Concrete
<b>RCS</b>	Replacement Cost Survey
<b>RCS/RCSC</b>	Resettlement and Compensation / Resettlement and Compensation Sub-Committee
<b>REDP</b>	Resettlement and Ethnic Development Plan
<b>RH</b>	Relative Humidity
<b>RMU</b>	Resettlement Management Unit
<b>RO</b>	Resettlement Office
<b>ROE</b>	Return on Equity
<b>ROR</b>	Run of the River
<b>ROW</b>	Right of Way
<b>RTM</b>	Round Table Meeting
<b>RWL</b>	Rated Water Level
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SD</b>	Social Development and Monitoring Section
<b>SDP</b>	Social Development Plan
<b>SE1</b>	Secondary Energy One
<b>SE2</b>	Secondary Energy Two
<b>SIA</b>	Social Impact Assessment
<b>SMMP</b>	Social Management and Monitoring Plan
<b>SMO</b>	Social Management Office
<b>SOA</b>	Study of Alternatives
<b>SPS</b>	Safeguard Policy Statement
<b>SPS 2009</b>	Social Policy Statement 2009 (ADB)
<b>STD</b>	Sexually Transmitted Disease
<b>STEA</b>	Science, Technology and Environment Agency
<b>STI</b>	Sexually Transmitted Infection
<b>t/km<sup>2</sup>/yr ; (ton/km<sup>2</sup>/year)</b>	tonnes per square meter per year
<b>T/L</b>	Transmission Line
<b>TA</b>	Technical Assistance
<b>TB</b>	Tuberculosis
<b>TBA</b>	Traditional Birth Attendant
<b>THPC</b>	Theun-Hinboun Power Company
<b>TOR</b>	Terms of Reference
<b>TSS</b>	Total Suspended Solids

<b>UN</b>	United Nations
<b>UNDP</b>	United Nations Development Program
<b>UNESCO</b>	United Nations Educational, Scientific and Cultural Organization
<b>UNFCCC</b>	UN Frame work Convention on Climate Change
<b>UNFPA</b>	United Nations Population Fund
<b>UNICEF</b>	United Nations International Emergency Children's Fund
<b>UNITS</b>	
<b>UPS</b>	Uninterruptible Power Supply
<b>US</b>	Upstream
<b>US\$/USD</b>	United States Dollar (US Dollar)
<b>USEPA</b>	United States Environment Protection Authority
<b>UXO</b>	Unexploded Ordnance
<b>VDC</b>	Village Development Coordination Committee
<b>VGRC</b>	Village Grievance Redress Committee
<b>VHV</b>	Village Health Volunteer
<b>VRC</b>	Village Resettlement Committee
<b>WB</b>	World Bank
<b>WCD</b>	World Commission on Dams
<b>WCS</b>	Wildlife Conservation Society
<b>WHO</b>	World Health Organization
<b>WMCA</b>	Watershed Management Conservation Agency
<b>WQ</b>	Water Quality
<b>WREA</b>	Water Resources & Environment Administration
<b>WWF</b>	World Wildlife Fund

## CHAPTER 1 - Introduction

1. **This document is the Social Impact Assessment (SIA)** of the Nam Ngiep 1 Hydropower Project (NNP1, the Project). The SIA is one of 10 documents required by the NNP1 Concession Agreement and its referring standards, which includes standards of the Asian Development Bank (ADB). It describes the anticipated social, economic, and cultural impacts NNP1 will have on persons living and working within its impact zone. It provides recommendations to mitigate these direct and indirect impacts and how they may be operationalized during the project's lifetime. Specific action plans to address different social and environmental impacts are outlined in the following action plans, in total comprising the full Environmental and Social Impact Assessment (ESIA):
  - i. The Environmental Impact Assessment (EIA), which reviews environmental conditions and potential environmental impacts of the proposed dam with suggested mitigation measures. The EIA also includes the elements of a suggested watershed management (WSM) program, to protect forest and water resources throughout the Nam Ngiep watershed, maintaining sufficient water supply to the dam and minimizing soil erosion and siltation, to ensure effective dam operation for its expected life.
  - ii. The Environmental Management Plan (EMP), which provides the systematic program over the project's lifetime to mitigate environmental impacts within the immediate area affected by the Project.
  - iii. This Social Impact Assessment (SIA), which reviews anticipated social, economic, labour, and cultural impacts of the proposed Project as well as the legal and social framework in which it is placed.
  - iv. The Resettlement and Ethnic Development Plan (REDP), provides the systematic program of all social, economic, and cultural mitigation measures requiring compensation, either in cash or in kind, for losses incurred due to construction and operation of the Project via Resettlement Action Plans (RAPs); livelihoods of project-affected people (PAPs) will be restored by the Project via a Livelihood and Income Restoration Plan (LIRP). The document also includes an Ethnic Development Plan (EDP) as most PAPs belong to ethnic groups which meet criteria defined in ADB's 2009 Safeguard Policy Statement (SPS) of indigenous peoples. The EDP describes the Project's policies and programs to mitigate impacts and enhance benefits on culture, livelihoods and other issues specific PAPs from ethnic groups.
  - v. The Social Development Plan (SDP), which describes social, economic, labour, and cultural development measures not requiring relocation or compensation for losses and so are not part of the REDP.
  - vi. The Initial Environmental Examination (IEE) of the Transmission Lines, which assesses the environmental and social impacts of the proposed transmission lines.
  - vii. The Land Acquisition and Compensation Plan for the Transmission Line (LACP-TL), which describes the program of all mitigation measures involving compensation for

- losses incurred by Transmission Line construction from the Dam Site to the Nabong Substation.
- viii. The Initial Environmental Examination (IEE) of the Access Road. This report is provided as an annex to the ESIA.
  - ix. The Land Acquisition and Compensation Plan for the Access Road (LACP-AR), which describes all mitigation measures involving compensation for losses incurred due to the Project's pre-construction works on Access Roads to the Dam Site. As of April 2014, more than 80% of PAPs have already been compensated and a Social Compliance Audit of the LACP-AR implementation conducted by an external senior social safeguards consultant engaged by ADB in order to assess compliance with ADB's SPS requirements.
  - x. The Initial Environmental Examination (IEE) of the resettlement area, which assesses the environmental impacts of the development of the designated resettlement site in Houaysoup.
2. Documents comprising the ESIA are based on prior technical feasibility studies and drafts. The history of the production of the social documents is outlined in Chapter 4 (Methodology). Each document is readable as stand-alone-documents. Therefore, certain information is repeated in each document. The ESIA documents will be disclosed to the public as required by the project's Concession Agreement (CA) and in compliance with ADB's Public Communications Policy (PCP) on information disclosure.<sup>1</sup> These emphasise the importance of public consultation in preparing safeguards documents, and their subsequent public disclosure. Broader public disclosure is online through NNP1 and ADB websites, as well as printed publications in the NNP1 Power Company (NNP1PC) Headquarters, field offices, and information centres. Documents are also provided to Government of Lao PDR (GoL) authorities, including the Ministry of Natural Resources and Environment (MONRE) and provincial, district, and village authorities. Executive summaries and entitlement matrices are translated into Lao and Hmong languages. Details on information disclosure can be found in Chapter 5. As the ESIA documents are considered living documents, updates will be provided via the same procedures. This includes a first revision of the REDP, including the LIRP and EDP after 6 months from the Effective Date of the CA, as required by the CA<sup>2</sup>. All updates will first be submitted to MoNRE, ADB and lenders for review and approval, prior to implementation.

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<sup>1</sup> Annex C, Clause 17.b.xvi and 17.c.ii. ADB, *Public Communications Policy 2011, Disclosure and Exchange of Information*, <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>

<sup>2</sup> The Effective Date will be reached once all specified conditions for the Effective Date of the Concession Agreement as outlined in the main document (outside Annex C) have been fulfilled and Government of Laos and NNP1 Power Company have acknowledged this Effective Date. Therefore, these requested updated Social Documents by the CA, Annex C, will be provided approximately at the beginning of 2015.

## 1.1 Scope of the SIA

3. The Social Impact Assessment (SIA) covers the characteristics and conditions of the people living in areas that will be directly or indirectly affected by the NNP1 Project, and describes possible impacts resulting from Project construction and associated activities. Affected communities are described, including demographic details, socioeconomic conditions, livelihoods sources and status, and cultural practices. Concerns and issues expressed by the communities living within and in the vicinity of the project area, understood as the Project Impact Zone, are identified. Anticipated project impacts are then evaluated for each type of impact. Mitigation measures are based on applicable laws, regulations, policies and guidelines of the Lao PDR, and safeguard policies of the Asian Development Bank (ADB) reflected in its Safeguard Policy Statement (SPS). Specific details on mitigation measures can be found in the complementing social documents outlined above.
4. This SIA is the outcome of a process lasting several years. This has already allowed a constant interaction with the stakeholders involved over a long period, while at the same time it makes the document complex. Therefore, the steps in developing this SIA up until April 2014 are outlined in the following table.
5. In 2013/2014 a complete revision of the Social Safeguard Documents was undertaken by NNP1 to improve their standards further and to ensure full compliance with both GoL and ADB safeguards and social standards. This included a series of public consultations (see below).

Year	Steps towards the development of the SIA
2000-2002	1. Preliminary studies: Nippon Koei Co NNP1 Feasibility Studies 1 and 2;
2007 First draft; 2012 Update 2013 Revision	2. Review the legal framework of Lao PDR;
2007 First draft; 2012 Update 2013 Revision	3. Review the detailed project design, feasibility studies and previous social surveys;
2007 - on-going	4. Facilitate discussions with the local government officials in affected provinces/ districts;
2007/8 1 <sup>st</sup> Survey 2011 2 <sup>nd</sup> Survey 2014 Confirmation Survey (planned)	5. Undertake an initial census of all APs, preliminary inventory of affected assets and a sample based socioeconomic survey;
2007 - on-going	6. Hold consultation with stakeholders (including APs) to obtain their inputs for the SIA Design, to enhance ownership, and to facilitate the approval process
2012	7. Analyse data to identify different categories of APs depending upon the degree and scale of impacts of the Project components;
2007 First draft; 2012 Update 2013/14 Revision	8. Prepare a detailed SIA to understand project impacts and to form the base for the development of according mitigation plans and measures



Table 1: Steps towards development of the SIA

6. **Remark:** Quantitative data in this report is based on household surveys conducted between 2007/8 and 2011, while qualitative information has been integrated up until the date of publication. Final data will result from the Confirmation Survey as specified in the CA, to be conducted after Cut-Off-Date. A cut-off date in January 2014 was set for land acquisition and compensation procedures for the Access Road. For other impact zones, the Cut-Off-Date has been announced by the Provincial Resettlement and Livelihood Restoration Committee (PRLRC) as April 11, 2014. The Transmission Line Cut-Off-Date will be declared after final design, due to be concluded in mid-2014. While an increase in numbers will alter provisional budgets presented in this report, it does not change obligations towards the PAPs which are limited by scope<sup>3</sup>.

## 1.2 Structure of the report

7. The SIA report consists of 19 chapters, divided in four parts:

### Part I - Overview

**Chapter 1 - Introduction:** describes the scope and structure of the report including a list of the authors of the report;

**Chapter 2 - Project Description:** presents a brief description of the project features and components – the main dam and its re-regulating dam, the powerhouse, transmission lines and access roads – that are expected to affect nearby communities.

**Chapter 3 - Legal Framework and Policies:** presents the laws and policies, and other relevant legal and administrative context for the Project.

### Part II - Stakeholders, Institutions, and Consultations

**Chapter 5 - Stakeholder Analysis and Institutions:** identifies the key project stakeholders and describes characteristics of the individuals, groups and institutions that have something to gain or lose by the Project. For the latter, above all government and project institutions are described, but as well the role of Project contactors and Grievance Institutions.

**Chapter 6 - Public Consultation, Participation, and Disclosure:** describes the process to date of disseminating information about the Project to and soliciting feedback from the various stakeholders, the main outputs of these briefings and meetings, and how feedback has been incorporated into the Project. It, too, contains a detailed description of the methods used for this purpose.

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<sup>3</sup>Concession Agreement, Annex C, Clause 6.

### **Part III - Description of Project Impact Zones and Types of Impact per Zone**

**Chapters 6 to 12 Social Analysis:** describe social conditions and impacts of the Project as can be assessed on village level, grouped by villages facing similar conditions. Each chapter is divided in seven sections: socioeconomic profile, summary of land acquisition impacts, impacts on livelihoods, impacts on social structures, impacts on access, impacts on gender issues, impacts on ethnic issues, and impacts on other forms of vulnerability.

### **Part III - Social Impact Assessment of the Project Impact Zone**

**Chapter 14 - Socioeconomic Conditions and Impacts:** describes the overall socioeconomic situation of the Project Impact Zone and impacts of the project, including land acquisition impacts but as well wider social impacts and risks.

**Chapter 15 - Transitional Impacts of Constructions:** describes the potential impacts construction activities, including workers and camps, have on the local population via a social impact and risk assessment.

**Chapter 16 - Ethnicity:** describes the conditions of ethnic groups in the Project Impact Zone and potential adverse and positive impacts of the Project.

**Chapter 17 - Gender:** describes similarly the conditions regarding gender in the Project Impact Zone and potential adverse and positive impacts of the Project.

**Chapter 18 - Vulnerable Households:** describes the situation of vulnerable households in the Project Impact Zone and challenges and opportunities faced by vulnerable households towards the Project. It, too, includes a short discussion on youth and children.

**Chapter 19 - Summary:** the last chapter sums up social impacts in the broadly defined Project Impact Zone and provides references to the documents which describe related measures and how the Project will address any unanticipated impacts.

## CHAPTER 2 - Project Description

### 2.1 *Project History*

8. The Nam Ngiep 1 (NNP1) Hydropower Project will be designed, implemented, maintained, and operated by the NNP1 Power Company (NNP1PC) for a period of 27 years under a build, operate, transfer agreement with Government of Lao PDR (GoL). For the concession period, operation and maintenance will be outsourced to the Japanese KANSAI Electric Power Co., Inc., and EGATi Electricity Generating Authority of Thailand International Co.. Design and construction of the project is divided into different NNP1PC divisions under the Managing Director. These are the Civil Division (CD), the Environment and Social Division (ESD), the Administrative Division, and the Finance Division. ESIA related assessments, planning, and implementation fall under the responsibility of the ESD. The organizational structure is more fully described in Chapter 4.
9. The project was identified in the early 1990s and a preliminary Feasibility Study (FS) conducted by the French company Sogelerg Sogreah in 1991. An MOU was signed between the GoL and the Shlapak Group of USA in 1991 but was cancelled in 1996. At the request of the Government of Lao (GoL), Japan International Cooperation Agency (JICA) through Nippon Koei conducted a new FS of the Project in two phases, 1998-2000 (Phase 1: focus on environmental impacts) and 2001-2002 (Phase 2: focus on technical and commercial aspects). The FS, submitted to GoL in November 2002, confirmed the feasibility of the Project on a build-operate-transfer basis and recommended an optimized development plan of the Project based on physical, economic, and safeguard considerations.
10. Nippon Koei as an investor concluded the MOU with GoL to implement a further study of the Project in May 2003. During this period, The KANSAI Electric Power Co., Inc. (“KANSAI”) joined the study, and KANSAI and Nippon Koei made a review report in May 2004. KANSAI and Nippon Koei signed the Project Development Agreement (PDA) on 27th April 2006.
11. KANSAI, Electricity Generating Authority of Thailand (“EGAT”) and Rojana Industrial Park Ltd. (“Rojana”) (collectively, “the Consortium”) entered into an agreement to jointly develop the Project and signed a memorandum of understanding (“the Consortium MOU”) on 9th April 2007. Nippon Koei withdrew upon signing the Consortium MOU and Rojana also withdrew from the Consortium in September 2007.
12. The Tariff MOU was concluded on 13th June 2007; however, due to increasing Engineering-Procurement-and-Construction (EPC) prices, result of the rapid price inflation of oil during the EPC tendering process, and consequently the necessity of a higher tariff for maintaining commercial feasibility, the Tariff MOU was terminated on 29th December 2008.
13. Based on the concept of EGAT Power Development Plan 2010, KANSAI re-submitted a Tariff proposal to EGAT and an MOU was concluded with EGAT in July 2011. The Consortium MOU was amended on 18th June 2009, reflecting the transfer of project shares from EGAT to EGAT International Co, Ltd. (EGATi). Finally on 27<sup>th</sup> August 2013 a Power

Purchase Agreement (PPA) with EGAT was signed by the Nam Ngiep 1 Power Company Limited and the Concession Agreement (CA) signed with GoL represented by the Ministry of Planning and Investment. Shareholders are now KANSAI (45%), EGAT International (EGATi) (30%), and Lao Holding State Enterprise (LHSE) (25%). Financial Closure is targeted for early 2014. The Consortium is seeking financing from the Asian Development Bank (ADB), Japan Bank for International Cooperation (JBIC), and regional and international commercial banks. Following Financial Closure, main project construction will begin, with impoundment during the rainy season of 2018 and operations in 2019.

14. Environmental and social (E&S) planning has proceeded parallel to commercial and engineering plans. First assessments were integrated in the JICA FS, with additional studies conducted since 2007. Annex C of the Concession Agreement(CA) describes all legal E&S obligations of the project with GoL (as represented by MoNRE), and was signed by MoNRE on 24th April 2013, prior to that of the main Concession Agreement.

Year	Technical and Commercial Activities	Environmental and Social Activities	Agencies
1991	Preliminary Feasibility Study		Sogelerg Sogreah Group (France)
1991	MoU (signed); cancelled in 1996		GoL / Shlapak Group (USA)
1998-2000		Phase 1 Feasibility Study (Environmental impact)	Nippon Koei on behalf of JICA requested by GoL
2001-2002	Phase 2 Feasibility Study (Technical and commercial)		
2003/4	MoU and Review Report		Nippon Koei / GoL plus Kansai Electric
2006	Project Development Agreement		
2007	Consortium-MOU; Tariff-MOU	Draft Environmental and Social Surveys and Assessments	Kansai, EGAT, Rojana Industrial Park (short-term); ERIC/NCC on E&S
2008	Termination of Tariff-MOU		Kansai, EGAT; ERIC/NCC on E&S
2009	Amended Consortium MoU		Kansai, EGATinternational
2011	New Tariff MoU	Socioeconomic and Impact Survey	Consortium, EGAT; ERIC, NCC on E&S
2012		Draft ESIA Documents	ERIC
2013	Establishment NNP1PC, Signing of CA and PPA	Revision of ESIA Documents	NNP1PC, GoL, EGAT, EdL; NNP1PC/ ADB on E&S
2014	Financial Closure, Effective Date of the CA, Start of Construction	Finalization of ESIA Documents and approval by ADB	NNP1PC, Lenders, GoL; NNP1PC/ ADB on E&S
2019 (planned)	Commercial Operation Date	All E&S Mitigation Measures in place	NNP1PC

Table 2: Project History

## 2.2 Description of the NNP1 Hydropower Project<sup>4</sup>

### 2.2.1 Project Location

15. The NNP1 Hydropower Project (the Project) will be located on the Nam Ngiep River in Bolikhamxay province, central Lao PDR. The main facilities, including the main dam, re-regulation dam, and power generating plants, will fall in Bolikhan District of Bolikhamxay province, just adjacent to the border with Xaysomboun Province, about 160 km north-east of Vientiane municipality, the capital of Lao PDR. The main reservoir will cover parts of Xaysomboun Provinces to the north-west of the main dam. The Nam Ngiep River originates in Xiengkhouang Province, flowing through Xaysomboun and Bolikhamxay Provinces before discharging into the Mekong River just upstream from Pakxan, Provincial Capital of Bolikhamxay Province (Figure 1). The Project will create 2 dams: a main dam and a re-regulation dam, both located in Bolikhan District (Bolikhamxay) close to the boundary to Hom District (Xaysomboun). Access to the dam site will be facilitated by upgrading the existing road from Nonsomboun village to Hat Gniun village, close to Bolikhan town. Transmission lines will connect the two power houses at the dam site to Pakxan town for local consumption and to Nabong Substation in Vientiane Province, to connect to an existing transmission line already exporting electricity to Thailand. Figure 2 shows in more detail the facilities in the construction area.

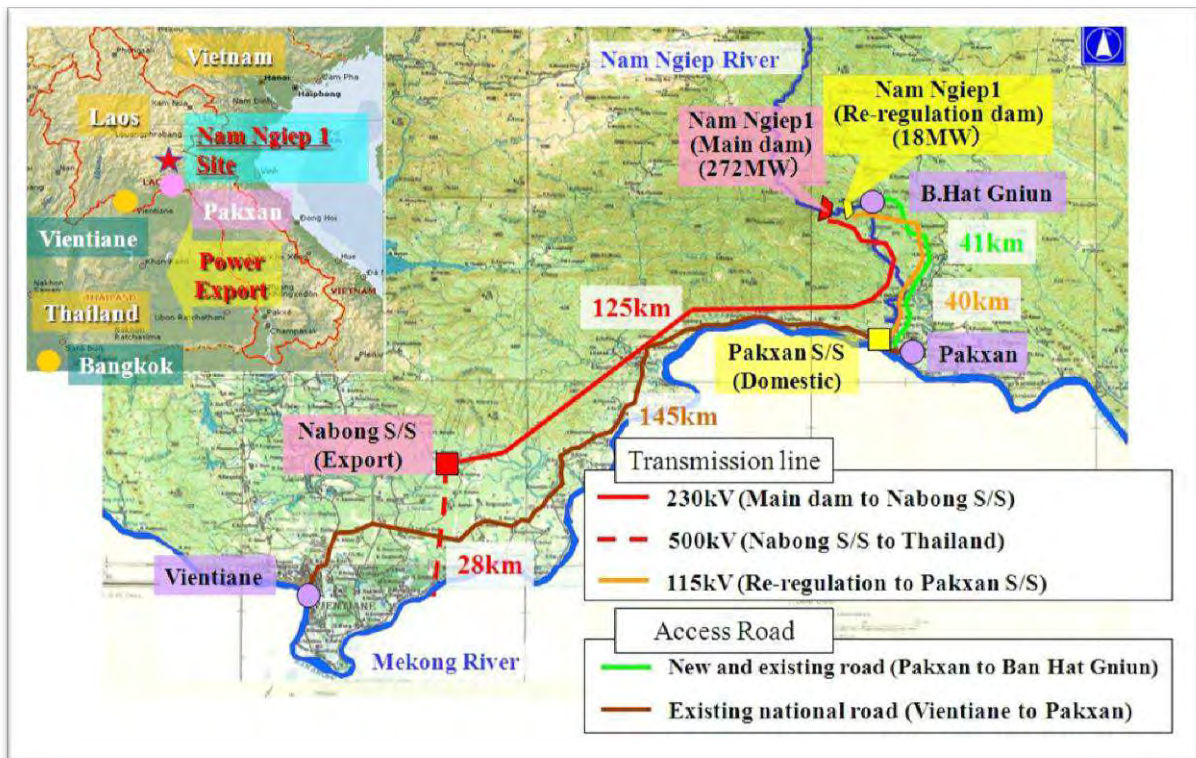


Figure 1: Location of the Nam Ngiep Hydropower Project

<sup>4</sup> A more detailed description of the summarized technical project features is presented in the EIA.

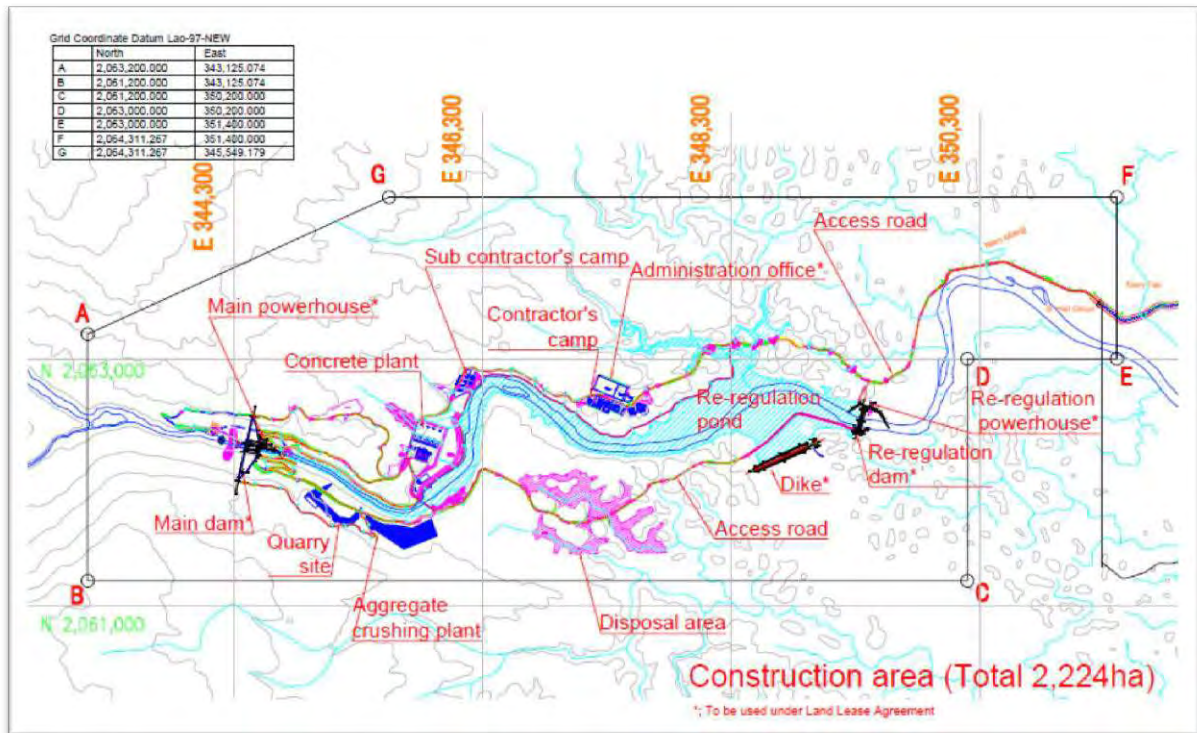


Figure 2: Locations of Main Features (Source: Technical Report, September 2011)

## 2.2.2 Main Dam and Re-Regulation Dam

16. The main dam will be a roller-compacted concrete (RCC) type with 148 m in height situated in a gorge that cuts between 2 mountains: Mt. Huasua to the northeast and Mt. Katha to the southwest. The site is at about 4.9 km upstream from Ban Hatsaykham and 9.4 km upstream from the main village Ban Hat Gniun. The main dam together with the main powerhouse covers permanently an area of 11.8 ha.

Facility	Items	Unit	Specifications
<i>Main dam</i>	Type	-	Concrete gravity dam (Roller-Compacted Concrete)
	Dam height	m	148.0
	Crest length	m	530.0
	Dam volume	10 <sup>3</sup> m <sup>3</sup>	2,034
	Crest level	MSL.m	322.0
<i>Spillway</i>	Gate type	-	Radial gate
	Number of gates	-	4
	Design flood	m <sup>3</sup> /s	5,210 (1,000-year)
<i>Intake</i>	Type	-	Bell-mouth
	Number	-	2
	Discharge capacity	m <sup>3</sup> /s	230.0
<i>Penstock</i>	Type	-	Covered by concrete and embedded



Facility	Items	Unit	Specifications
	Number	-	2
	Length	m	185
	Diameter	m	5.2

Table 3: Technical Specifications Main Dam (Source: Technical Report, May 2013)

17. A free overflow type concrete gravity dam of 90.0 m length and 20.6 m height will be built 6.2 km downstream from the main dam, 1.3 km downstream from Ban Hatsaykham and 3.2 km upstream from Ban Hat Gniun. Additionally, a dyke on the right bank river side will prevent unregulated water flows into the low-laying areas of adjacent Houaysoup, while providing the opportunity for an irrigation system in the resettlement site of Houaysoup. The Re-Regulation Dam and the related powerhouse cover an area of 2.4ha.

Facility	Items	Unit	Specifications
<i>Re- regulation Dam</i>	Type	-	Concrete Gravity dam
	Dam height	m	20.6
	Crest length	m	90.0
	Dam volume	10 <sup>3</sup> m <sup>3</sup>	23.9
	Crest level	MSL.m	187.0 (non-overflow section)
<i>Re-regulation gate</i>	Type	-	Fixed wheel gate
	Number	-	1
	Discharge Capacity	m <sup>3</sup> /s	160
<i>Dyke</i>	Type	-	Concrete gravity (Roller-Compacted concrete) associated with rock-fill dam
	Crest length	m	507.2
	Dam height	m	14.6
<i>Spillway</i>	Gate type	-	Ungate spillway (Labyrinth type)
	Design flood	m <sup>3</sup> /s	5,210 (1,000yr)
<i>Intake</i>	Type	-	Open
	Number	-	1
	Discharge capacity	m <sup>3</sup> /s	160.0

Table 4: Technical Specifications Re-Regulation Dam (Source: Technical Report, May 2013)

### 2.2.3 Power House

18. The stored water of the main reservoir will be released through two turbines to produce electricity; with variations over day and week according to the electricity demands of the international buyer. The powerhouse at the main dam will have an electrical producing capacity of 272.8 MW, or 1,515 GWh per year.

Facility	Items	Unit	Specifications
<i>Powerhouse</i>	Type	-	Semi-underground
	Length	m	25.0

Facility	Items	Unit	Specifications
	Width	m	62.5
	Height	m	47.2
<i>Turbine and generator</i>	Maximum plant discharge	m <sup>3</sup> /s	230.0
	Gross head	m	132.7
	Effective head	m	130.9
	Type of turbine	-	Francis
	Rated output	MW	272.8 (at substation)
	Annual power generation	GWh	1,515 (at substation)

Table 5: Technical Specifications Main Powerhouse (Source: Technical Report, May 2013)

19. From the re-regulation reservoir, water will be released, thereby producing constant electricity for local consumption and regulating fluctuations from the main dam with even discharge from Monday to Saturday and reduced discharge on Sundays. The powerhouse at the re-regulation dam will have the capacity of 17.6 MW, or 105 GWh per year.

Facility	Items	Unit	Specifications
<i>Powerhouse</i>	Type	-	Semi-underground
	Length	m	46.4
	Width	m	22.1
	Height	m	49.1
<i>Turbine and generator</i>	Maximum plant discharge	m <sup>3</sup> /s	160.0
	Gross head	m	13.1
	Effective head	m	12.7
	Type of water turbine	-	Bulb
	Rated output	MW	17.6(at substation)
	Annual power generation	GWh	105 (at substation)

Table 6: Technical Specifications Re-Regulation Powerhouse (Source: Technical Report, May 2013)

## 2.2.4 Additional Components in the Construction Area

20. Additional Components in the Construction Area cover the following items
- Administration office
  - Quarry site
  - Stockpile and plant and camp yards
  - Disposal areas
21. Apart from the administration office, none of these areas will be permanently used by the Project. Land temporarily acquired will be re-vegetated and returned to previous users (private or community) in a restored state.



Functional area	Size	Length	Permanent*
	(ha)	(km)	Yes/No
Quarry site	8.5	-	No
Temporary yards (Plant yard, camp yard, coffer dam, diversion)	24.6	-	No
Disposal area	26.0	-	No
Administration office	3.2	-	Yes
<b>Total Temporary Land Loss</b>	<b>59.1 ha</b>		
<b>Total Permanent Land Loss</b>	<b>3.2 ha</b>		

Table 7: Sizes of Additional Functional Areas during Construction Phase

## 2.2.5 Transmission Lines

22. There are two transmission lines (T/L) connecting the project, a 230 kV line and a 115 kV line. The 230 kV transmission line will be constructed by the Project and routed from the powerhouse of the main dam to Nabong Substation, for a total of 125 km in length. The 115 kV transmission line will be constructed under the full responsibility of Électricité de Lao (EdL) and routed from the powerhouse of the re-regulation dam toward Pakxan Substation, running in parallel with the first line before diverging at Ban Nampa, with a length of 40 km. Additionally, the Project will use a 22kV line owned by EdL to provide electricity to the construction site as well as to the new resettlement site of Houaysoup, located in Bolikhan district. This 22kV line will originate in Pakxan, continue to Nonsomboun, and from there along the Access Road to the dam site. This transmission line will be installed by upgrading and extending (in Hatsaykham) an existing transmission line and lies within the right-of-way of existing roads where new transmission line poles have to be installed.



Figure 3: Alignment of Transmission Lines

## 2.2.6 Access Roads

23. Access roads requiring improvement or new construction run for a total of about 58.42 km, as shown in Table 8 and Figures 5 and 6; of these, 21.2 km of the existing road from Ban Nonsomboun to Ban Hat Gniun and 9.25 km of the pre-existing JICA road<sup>5</sup> need rehabilitation. Another 11.2 km of newly constructed permanent road will be built from Ban Hat Gniun to the construction area and within the grounds of the project facilities. 16.8 km of temporary road will be required for transportation within the construction area. The access road will also be used for transportation and access to the new resettlement site located on the right bank behind the dyke. Impacts of the Access Roads are described and addressed in a separate LACP-AR. Resettlement related to specific access roads crossing the Nam Ngiep River into the Houay Soup resettlement area will be outlined in this REDP.



Figure 4: Road route plan for new access roads in the construction area

No.	Road section	Distance	Road condition
<b>Part I: Improvement of existing Road from Ban Nonsomboun to Dam Site</b> (Distance and Existing Road Conditions)			
	Permanent road from Nonsomboun to Hat Gniun	21.2 km	Dirt road (sealed in community areas)
	Temporary road along old JICA road	9.25 km	Dirt road
	<b>Total improvement of existing road</b>	<b>30.45 km</b>	
<b>Part II: New Road Construction from Ban Hat Gniun to Dam Site</b> (Distance and Specification of New Road)			
	Permanent road	11.2 km	Subgrade (Non-surface treatment except in community areas)
	Temporary road	16.8 km	Subgrade (Non-surface treatment)
	<b>Total new road construction</b>	<b>28.0 km</b>	
	<b>Total Access Road Length</b>	<b>54.6 km</b>	

Table 8: Access road: Improved Existing Road, New Permanent Road, and New Temporary Road

<sup>5</sup>A small access road linking Hat Gniun and the dam site, constructed during the feasibility study on NNP1 by JICA in early 2000

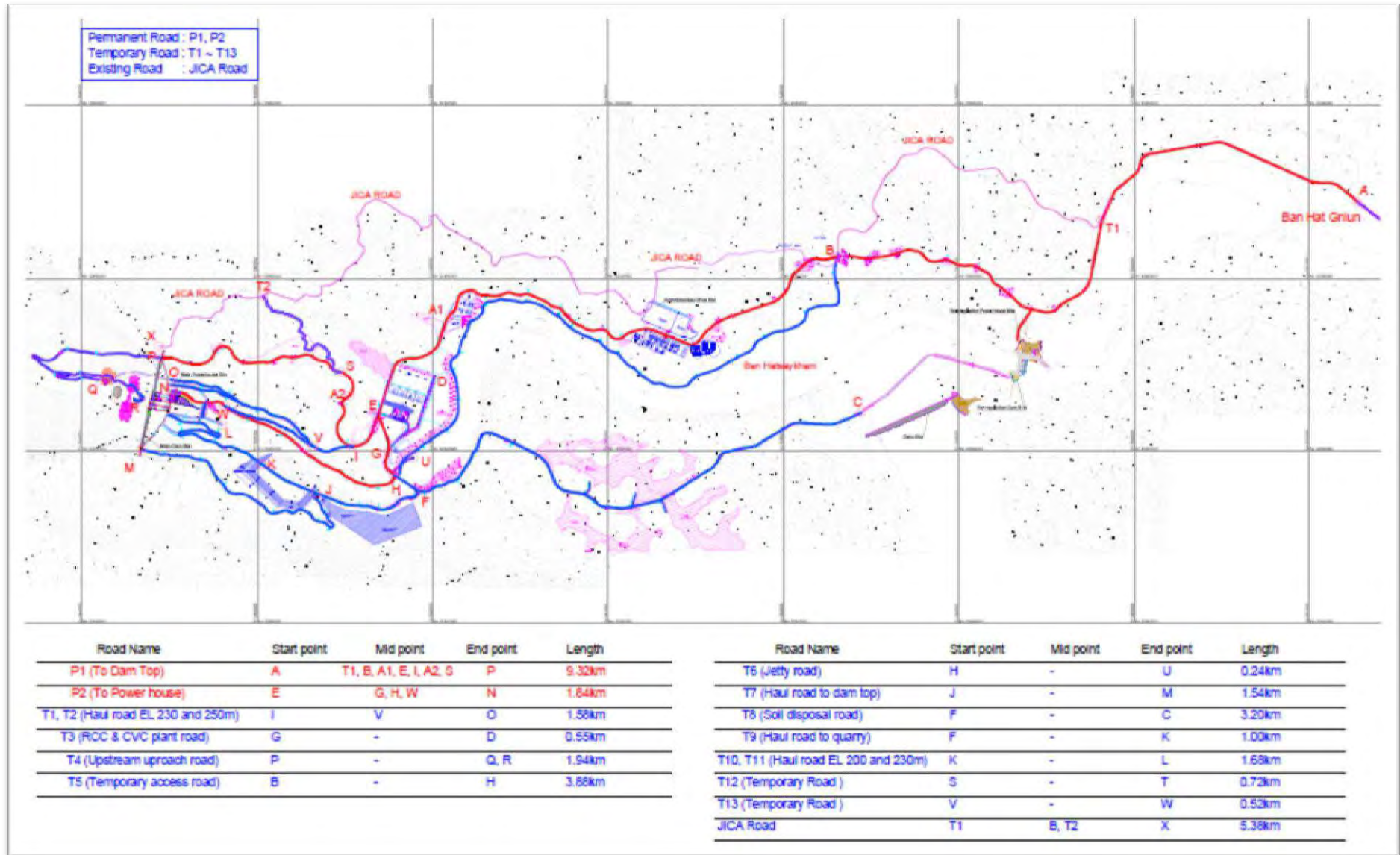


Figure 5: Road route plan for new access roads in the construction area



## 2.2.7 Reservoir and Reservoir Lifetime

24. The main dam will create a 66.9 km<sup>2</sup> reservoir. The reservoir will be rather narrow, but long and deep, extending about 70 kilometres in length. The maximum water level is set for Mean Sea Level (MSL) 320 m and the minimum water level at MSL 296 m.

Facility	Items	Unit	Specifications
<i>Main Reservoir</i>	Flood water level	MSL.m	320.0
	Normal water level	MSL.m	320.0
	Rated water level	MSL.m	312.0
	Minimum operating level	MSL.m	296.0
	Available depth	m	24.0
	Reservoir surface area	km <sup>2</sup>	66.9
	Effective storage capacity	10 <sup>6</sup> m <sup>3</sup>	1,192
	Catchment area	km <sup>2</sup>	3,700
	Average annual inflow	m <sup>3</sup> /s	148.4
mill.m <sup>3</sup>		4,680	

Table 9: Technical Specifications Main Reservoir (Source: Technical Report, May 2013)

25. The re-regulation dam will create a second reservoir of 1.27 km<sup>2</sup>, with maximum water level of MSL 179 m and minimum water level of 174 m.

Facility	Items	Unit	Specifications
<i>Re-regulation pond</i>	Flood water level	MSL.m	185.9
	Normal water level	MSL.m	179.0
	Rated water level	MSL.m	179.0
	Minimum operating level	MSL.m	174.0
	Available depth	m	5.0
	Reservoir surface area	km <sup>2</sup>	1.27 at NWL
	Effective storage capacity	10 <sup>6</sup> m <sup>3</sup>	4.6
	Catchment area	km <sup>2</sup>	3,725

Table 10: Technical Specifications Re-regulation Reservoir (Source: Technical Report, May 2013)

26. Based on comparison with other major hydropower project sites in Lao PDR with similar geology and land use over a 50 year period, not included the trapping capacity of the five other dams in the catchment, sediment plumes are expected to reach 233 MSL, while NNP1 intake at the main dam is at 274 MSL. No periodic dredging or bottom discharge releases (sediment flushing) are anticipated; the dam design is based on low sediment yield. A detailed analysis on the lifetime of the reservoir can be found in the EIA.

## 2.2.8 Construction Schedule

27. While preliminary works, such as construction and upgrading of access roads, commenced in December 2013, construction on the primary site is planned to start in mid-2014, and will

take around 70 months to finish. The indicative construction schedule is presented in the following table.

	2013			2014				2015				2016				2017				2018			2019				
	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3	4-6	7-9	10-12	1-3		
Preparatory Works																											
Road Works																											
base Camp																											
Diversion																											
Main dam																											
Grouting																											
Power Pant																											
Re-regulation dam																											
Re-regulation Power plant																											
Construction facility																											
Quarry site																											
Transmission Line																											

Table 11: NNP1 Construction Schedule

### 2.2.9 Operation

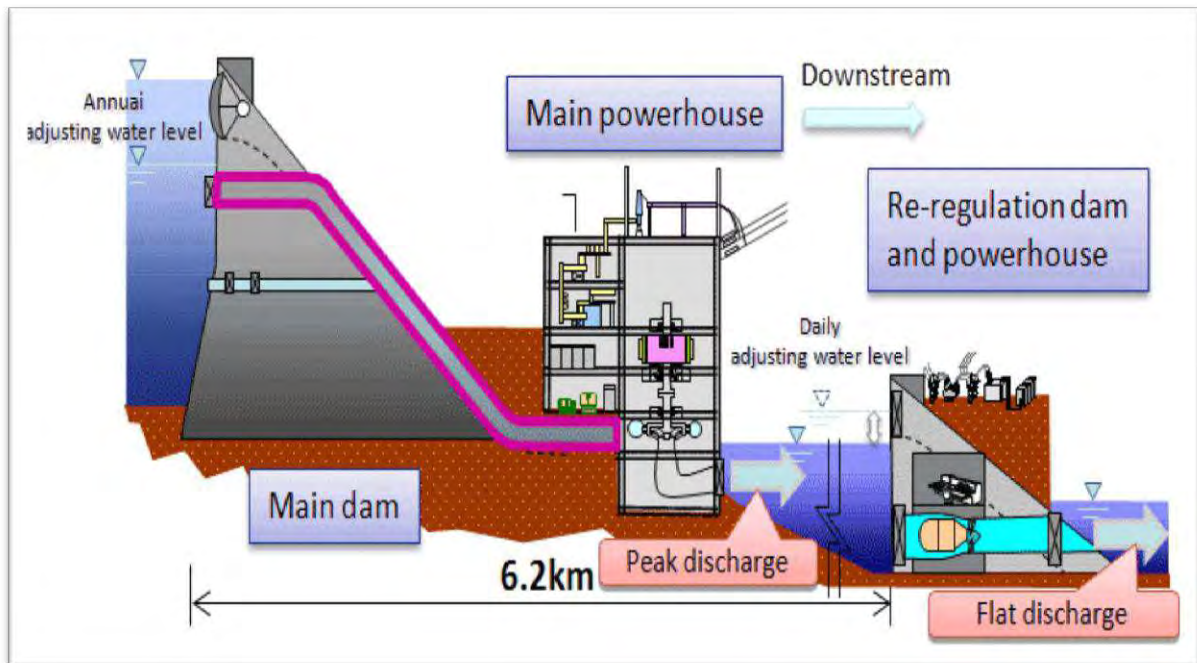


Figure 6: Dam site with schematic technical project drawing

28. The above outlined technical components of the Project indicate components required for

operations. After a period of 27 years from Commercial Operations Date (COD), the facilities will be handed over to the Government of Laos for continued operation. Electricity production from the main dam will adjust to demands in Thailand and water discharge will fluctuate over a 24 hours period. The re-regulation pond will balance these fluctuations and allow a flat discharge into the Nam Ngiep, with constant electricity consumption for local use.

### 2.3 Design Changes to Reduce Project Impacts

29. The project has analysed together with PAPs and GoL, adaptations of the project-design to reduce and avoid social and environmental impacts from the outset. These measures are outlined in Table 12.

Topic	Original Plan	Avoided Impact	Project Adaptation	Area
<i>Reservoir height</i>	Original Plan: 360MSL	Flooding of several villages in the upper reservoir area	Reduction of reservoir height to 320MSL	Upper Reservoir Area, Xaysomboun Province
<i>Resettlement Upper Reservoir</i>	Resettlement of part of 3 villages to a new resettlement site	Split of communities, loss of local knowledge, merging of different villages, new host communities, possible loss of ethnic identity, loss of social and economic ties.	Relocation of 15HH within village boundaries and joint efforts on land development and alternative livelihood restoration activities	Upper Reservoir Area, Xaysomboun Province
<i>Resettlement Site Lower Reservoir</i>	Resettlement to several sites spread out in Vientiane Province	Split of villages-cluster, dissatisfaction of villagers	Several options and then development of the Houaysoup resettlement site in Bolikhamxay Province	Xaysomboun Province / Bolikhamxay Province
<i>Resettlement of Hatsaykham</i>	Relocation closer to Hat Gniun (Lao Loum main village)	Increasing pressure inside the administrative village, potential inter-community conflicts, loss of ethnic identity	Resettlement to Houaysoup with other Hmong communities	Bolikhamxay Province
<i>Water-Intake</i>	/	Risk of low oxygen in released water and impact on downstream aquaculture	High intake of reservoir water for electricity generation	Bolikhamxay Province / Downstream
<i>Re-Regulation Dam</i>	/	Strong and daily fluctuation of water levels downstream	Construction of a re-regulation dam	Bolikhamxay Province / Downstream
<i>Access Road I</i>	50m non-exclusive right	Significant land acquisition and impacts	Significant reduction of the usage of this	Bolikhamxay Province

	for extending access road		right	
<i>Access Road II</i>	Roads optimized on straightness	Impact on several houses and a cemetery	Re-alignment of the access road to avoid all potential impacts on houses and the cemetery	Bolikhamxay Province
<i>Access Road III</i>	Alternative Route	Extensive impacts on paddy rice fields	Rejection of the Alternative Route	Bolikhamxay Province
<i>Access Road IV</i>	/	Dust reducing living quality of PAPs	Regular watering during construction	Bolikhamxay Province
<i>Labour Camps</i>	/	Large camp follower communities	Obligation for contractors to provide all facilities within camps, preparation of Labour Management Plan	Bolikhamxay Province

Table 12: Project Design Adaptation to Avoid or Mitigate Project Impacts

30. The initial plan was to construct a higher dam, allowing the reservoir to fill up until 360MSL. This would have impacted several more villages in the upper reservoir area, flooding all villages in Thaviengxay Villages-Cluster, Thathom District, Xaysomboun Province. Concerns were not just raised because of loss of houses, but as well because of an essential part of the province's rice fields. A second design established a full supply level at 340MSL, but still several villages would have been flooded. The current design was agreed to establish a reservoir with a full supply level of 320MSL. Thus, the impact in the upper reservoir area was reduced considerably and according to the impact assessment for the upper reservoir area, only 15 houses and agricultural land of three villages will now be impacted (Survey 2011).
31. Secondly, the original plan was to resettle impacted people in the upper reservoir area to a new resettlement site, including all PAPs losing houses or significant parts of their agricultural land. After a series of consultations with the PAPs and GoL, it was finally decided together with the PAPs to drop this plan, to allow PAPs to relocate within their existing villages, and to support the development of land and alternative income sources to allow full livelihood restoration in their original homes. Replacement houses for 15 impacted houses will be rebuilt within the village boundaries and replacement agricultural land sourced either within the village or in adjacent villages through willing-buyer-willing-seller arrangements. Community separation is avoided, and PAPs can continue to make use of the newly constructed inter-provincial road connecting them to the provincial capital of Xieng Khouang as well as to provinces south of Xaysomboun.
32. Selection of a suitable and mutually acceptable resettlement site for villages impacted in the lower reservoir area has been the result of several years of exploration and negotiation between GoL, PAPs, and the Project. Several sites were explored and rejected before final site selection in the Houaysoup area in Bolikhamxay Province. The administrative challenge

of resettling people over provincial boundaries has been taken on to allow the usage of a larger area. Thus the original allocated land of 2,000ha has been increased to an allocation of more than 6,000ha. PAP feedback on the Houaysoup site is reflected in Chapter 5.

33. Fourthly, the sub-village of Hatsaykham with people of Hmong origin, impacted due to the inundation of the re-regulation dam, was intended to be relocated within its existing administrative boundaries closer to the main village of Hat Gniun, populated mainly by Lao Loum households. When the Houaysoup area, just opposite Hatsaykham on the other side of the Nam Ngiep River, was explored as a potential resettlement site for the four villages impacted in the lower reservoir area (all of which constitute Hmong communities), the Project, together with the relevant GoL authorities, agreed to facilitate the request of Hatsaykham to relocate to Houaysoup instead to join with the other four Hmong villages, to form a new administrative unit.
34. Fifthly, reducing potential operational impacts for downstream villages, water-intake for power generation is situated high in the dam. This reduces the risks of releasing water with low oxygen levels and mitigates fisheries impacts.
35. Sixthly, the re-regulating dam will prevent disturbance of the river downstream through fluctuations of water release at the main dam. Water release at the main dam depends on electricity demands by the international buyer, which again depends on different usage of electricity during different times over the day. The re-regulation reservoir will store the water from fluctuating release and provide at the lower end a steady release of water downstream, preventing hourly changes of river height.
36. During the construction phase, impacts will be minimized by reducing the construction area at the access road. While the Concession Agreement provides a non-exclusive right of a total of 50m width, this right will not be used fully so as to limit impacts on PAPs along the road. Furthermore, the alignment of the road has been adapted to avoid any impact on PAPs' houses. Within and close to villages the access road will be watered several times daily to prevent dust from construction traffic.
37. Finally, contractors are obliged to provide full facilities in labour camps, reducing the number of camp followers and limiting associated impacts on adjacent communities near the construction site.

## ***2.4 Project Impact Zone***

38. Within the broader Project Impact Zone, 5 distinct regions are identifiable through geographic, administrative and socioeconomic differences. These different regions are termed "impact zones". Criteria for determining their boundaries include types and extent of project impacts on communities in each zone, corresponding closely with administrative boundaries. Figure 7 shows a map of the overall Project Impact Zone; zone-specific characteristics and expected impacts are described below as summaries of the details outlined in the specific chapters on each zone. The zones, provinces, districts, villages, and numbers of households can be found in a Table 13 at the end of this section. Full details of



mitigation, compensation, resettlement and livelihood restoration measures for these impacts are outlined in the Resettlement and Ethnic Development Plan (REDP) and the Land Acquisition and Development Plan for Access Roads (LACP-AR).

#### **2.4.1 Zone 1 – Upstream Area**

39. Zone 1 covers the area upstream from the 320m MSL reservoir. Eight (8) villages located along the banks of the Nam Ngiep River in this zone are expected to experience no adverse impacts by the project, including no Land Acquisition and Resettlement (LAR) impacts; they will, however, be integrated in the implementation of the Watershed Management Plan. Unforeseen impacts will be addressed by monitoring of water quality and fisheries. All are under the governance of Thathom District, Xaysomboun Province. A fisheries co-management program will be implemented.

#### **2.4.2 Zone 2 – Reservoir Area**

40. Zone 2 covers the area affected by the 320m MSL reservoir. There are 2 sub-zones. The communities in the upper section of the reservoir, Zone 2UR, will be affected by partial inundation of land. Communities in the lower section of the reservoir, designated as Zone 2LR, will be completely inundated and residents will need to be resettled.

#### **2.4.3 Sub-Zone 2UR – Upper Reservoir Area**

41. This sub-zone covers the upper section of the immediate catchment area of the 320m MSL main reservoir. Three (3) villages (Pou, Hatsamkhone, Piengta) located alongside the Nam Ngiep River will be directly affected. All belong to Thathom District, Xaysomboun Province.
42. Expected impacts from the reservoir at 320 m MSL are: 10 households in Ban Pou and 5 households in Hatsamkhone will need to be relocated to a higher elevation because their residential land will be flooded, while a further 178 households from all three villages (including the 15 households losing their residential areas and 2 households from a fourth village upstream with land in the upper reservoir) will lose some of their productive land and require compensation. Additionally, residents of these communities will be provided training and resources under the livelihood promotion program and access to improved social services and infrastructure provided by the project.
43. Affected households were initially scheduled for relocation to a new resettlement village. However, after an extended consultation process, the preference of affected persons to remain in their existing villages, and to find vacant land within those or adjacent villages to replace their lost housing and agricultural land, was agreed.

#### **2.4.4 Sub-Zone 2LR – Lower Reservoir Area**

44. This sub-zone covers the lower section of the 320m MSL reservoir, where 4 villages (Houaypamom, Sopphuane, Sopyouak, and Namyouak) will be completely inundated. All are part of Hom District, Xaysomboun Province. Because of the total inundation, all 384

households (as of the 2011 survey) in these villages will have to be resettled and compensated for the loss of housing, residential land, productive lands, and other assets, and to have livelihoods restored. They will also be provided with infrastructure, social services, and economic and social development programs, to assure that their standard of living is at least the same level as pre-project condition, if not higher, and that poor households are brought above the poverty line. Special provisions for vulnerable households will be put in place by the Project.

#### **2.4.5 Zone 3 – Construction Area**

45. This zone covers the area where the main project components will be built. It includes the main dam, re-regulating dam, powerhouses, Project Office, camp site, storage areas, access roads, and the area between the main dam and the re-regulating dam that will be covered by its reservoir. There is one (1) directly affected community (Hatsaykham Hamlet) in this zone, administratively included in the village of Hat Gniun in Bolikhan District, Bolikhamxay Province.
46. Because of construction activities and inundation of the re-regulation reservoir, all 33 households of this community will have to be resettled and compensated for their loss of housing, residential lands, productive lands, and other assets. As with the villages in Zone 2LR, the people of Zone 3 will also be provided with infrastructure, social services, and economic and social development programs, to assure that their standard of living is at least maintained, if not better than pre-project condition, and that poor households are brought above the poverty level. Special provisions for vulnerable households will be put in place by the Project.

#### **2.4.6 Zone 4 – Far Downstream Area**

47. This zone covers the catchment area of the Nam Ngiep River downstream from the re-regulating dam, except for the downstream villages of Ban Hat Gniun and Ban Thahuea, which are classified as host villages to the designated resettlement site in Houaysoup and separately assessed under Zone 5. Nine (9) villages (Ban Somseun, Ban Nampa, Ban Houykhoun Ban Thong Noi, Ban Thong Yai, Ban Sanaxay, Ban Phonsy, Ban Pak Ngiep, and Ban Sanoudom) are located between 30km and more than 40km downstream of the re-regulation dam. No LAR impact is expected. Possible impacts to these 9 villages in Zone 4 are changes in water level of the Nam Ngiep River, changes in water temperature, possible erosion of the riverbank, and other changes in water quality. Because of mitigation measures already included in the design of the Project (i.e. water flow control via the re-regulation dam) and their distance from the dam, any such impacts are expected to be minimal or non-existent. Even so, these villages will be involved in monitoring of the water quality and flow, as well as in a fisheries co-management program to facilitate long-term sustainable supplies of fish and a water supply program to guarantee water supply for household use will be implemented.

48. Early impacts on downstream villages may be experienced by activities of the Nam Ngiep 2 (NNP2) hydropower project, located upstream of the NNP1 project. Reservoir impoundment for NNP2 is scheduled for the rainy season of 2015, with COD in 2016. Consequently the NNP1 project will undertake baseline assessments of pre-impact downstream conditions, to ensure that impacts caused by another project are not attributed to the NNP1 project. Responsibility for any subsequent compensation claims can then more easily be determined, and any impacts that may be attributed to joint activities of both projects will require coordination between the two projects.

#### **2.4.7 Zone 5 - Prospective Resettlement Areas and Host Villages**

49. Four sites were investigated by the Project, GoL, and PAPs as possible resettlement areas for the four villages in sub-zone 2LR and the one village in Zone 3. A fifth site was suggested by the PAPs but rejected by GoL due to security reasons. After numerous consultations and negotiations, a sixth option, the Houaysoup area in Bolikhan District, Bolikhamxay Province, on the opposite bank of the Nam Ngiep River from Ban Hat Gniun and immediately south of the re-regulation reservoir and dam, was suggested as resettlement area for the four villages from Zone 2LR and one village of Zone 3. Consequently, Bolikhamxay provincial authorities allocated this area of more than 6,000 ha on the right bank of the Nam Ngiep as the officially designated resettlement area. It gets its name from two tributaries to the Nam Ngiep, Houay Soup Gnai and Houay Soup Noi. The bigger of the two Houay Soup Rivers runs 8 km from the mountain slopes to the southwest of the resettlement site. The flatter lands along both banks of the Houay Soup River will provide more than 400 ha of irrigated paddy fields as well as upland rice fields, grassed areas, cash crops, and commercial tree plantations. Details are outlined in the REDP. Villagers from 2LR have expressed concern over soil quality in Houaysoup, which the company will address with special soil improvement programs.
50. As the nearest villages to the resettlement site, Ban Hat Gniun and Ban Thahuea are considered host villages to the resettled communities. Located across the river and up to 10 kilometres distant from the construction site, they will be connected to the resettlement site via a bridge across the Nam Ngiep and an upgraded access road, which also extends southwards to the provincial capital. A new school building in the resettlement area will be available for students from these host villages, as will the improved health facilities. Some households from Hat Gniun, Thahuea and Hatsaykham have cultivated land in Houaysoup, but satellite images acquired by the project show limited land use in Houaysoup for 2013/2014. As the villages closest downstream from the two dams, water quality near these two villages will also be monitored as for villages of Zone 4 (see SDP).

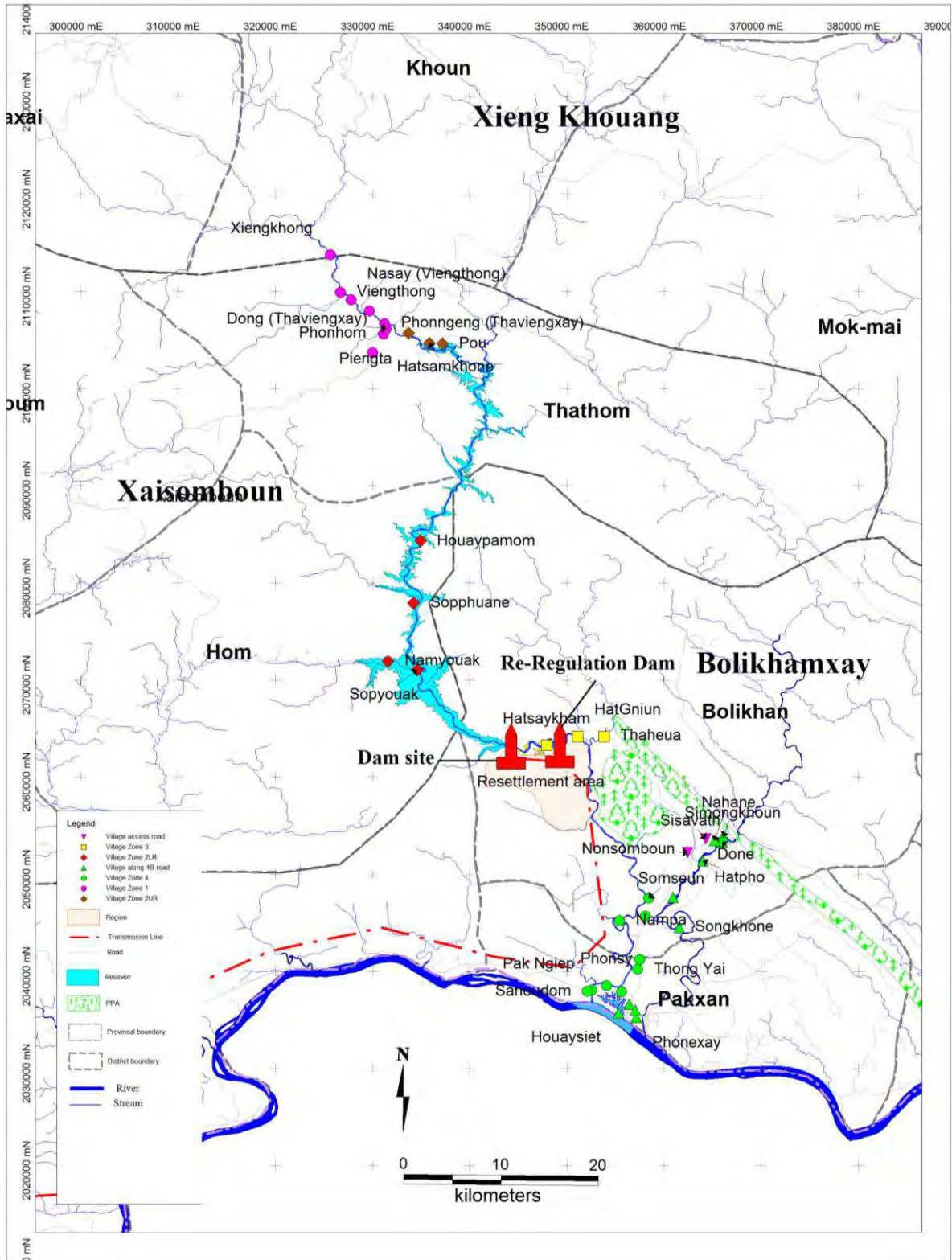


Figure 7: Map of NNP 1 Project Impact Zone

51. Some households living along the Transmission Line and Access Road are also losing land or other assets for these project components. However, project design has tried to minimize impacts and no significant involuntary resettlement impact is expected. LAR for the Access

Road is described in the LACP-AR. Once final alignments of the 230kV Transmission Line and the 22kV line for use during construction are concluded in mid 2014, LAR will also be addressed in the subplan LACP-TL. For the 115kV Transmission Line, a due diligence on land acquisition and compensation undertaken by EDL will be conducted to determine if there is an outstanding issue. Results of the due diligence and proposed corrective measures will be communicated to EDL. Safety issues will be addressed by the relevant Environment and Social Management and Monitoring Plan - Construction Phase (ESMMP-CP) documents, while labour management, health and gender issues are addressed in the LACPs as well as in separate action plans<sup>6</sup> included as part of the SDP.

52. For these as for any other area, impact mitigation measures are limited by scope and not by budget, which secures PAPs entitlements even if project anticipated and unanticipated impacts are revised during project implementation.

No	Province	District	Village	No. of HH	No. of Population		No. of LAR-affected HH
					Total	Female	
<b>Zone 1- Upstream Area</b>							
1	Xieng Khouang	Thathom	Thaviengxay (Dong)	267	1,646	981	No direct impact expected
2			Phonngeng	95	771	371	
3			Nasong	111	681	240	
4			Vienthong	107	617	252	
5			Nasay	51	270	170	
6			Xiengkhone	102	546	266	
7			Nahong	92	543	273	
8			Phonhom	180	1,200	557	
<b>Total</b>				<b>1,005</b>	<b>6,274</b>	<b>3,110</b>	
<b>Zone 2 Upper Reservoir area</b>							
9	Xaysomboun	Thathom	Pou	172	1,129	557	178 HH impacted on land including 15 houses
10			Piengta	82	454	210	
11			Hatsamkhone	74	453	233	
<b>Total</b>				<b>328</b>	<b>2,036</b>	<b>1,000</b>	
<b>Zone 2 Lower Reservoir area</b>							
12	Xaysomboun	Hom	Houaypamom	37	254	122	All households impacted and will be
13			Soppuane	58	416	206	
14			Sopyouak	126	916	439	
15			Namyouak	163	1,149	564	

<sup>6</sup> These include the Labor Management Plan (LMP), Public Health Action Plan (PHAP), Gender Action Plan (GAP) and Community Development Plan (CDP).

No	Province	District	Village	No. of HH	No. of Population		No. of LAR-affected HH	
					Total	Female		
<b>Total</b>				<b>384</b>	<b>2,735</b>	<b>1,331</b>	relocated	
<b>Zone 3 - Construction Area</b>								
16	Bolikhamxay	Bolikhan	Hatsaykham (sub-village)	33	218	108	All households impacted and will be relocated	
<b>Zone 4 - Far Downstream Area</b>								
19	Bolikhamxay	Bolikhan	Nampa	84	584	293	No direct impact expected	
20			Somseun	221	1,207	602		
21			Houykhoun	358	2,180	1,076		
22		Pakxan	Thong Noi	165	839	410		
23			Thong Yai	86	437	218		
24			Sanaxay	274	1,156	582		
25			Phonsy	137	719	369		
26			Pak Ngiep	173	859	430		
27			Sanoudom	94	457	221		
<b>Total</b>				<b>1,592</b>	<b>8,438</b>	<b>4,201</b>		
<b>Zone 5-Resettlement and Near Downstream Area</b>								
17	Bolikhamxay	Bolikhan	Hat Gniun	67	371	157	21 HH from Hat Gniun lose land in the resettlement site	
18			Thahuea	50	265	122		
<b>Total</b>				<b>117</b>	<b>636</b>	<b>279</b>		
<b>Transmission Lines : 24 villages</b>								
-	Bolikhamxay	Bolikhan	Hat Gniun	67	371	157	Impact to be re-assessed after the final alignment of the TL	
-			Houykhoun	358	2,180	1,076		
-			Nampa	84	584	329		
-		Pakxan	Thong Noi	165	839	410		
-			Thong Yai	86	437	218		
-			Sanaxay	274	1,156	582		
28			Anusonxay	390	1,120	NA		
-			Pak Ngiep	137	659	430		
29			Bolikhamxay	Thaphabat	Xaysavang	87		123
30		Vuenthat			356	523		NA
31		Pakthouay Tai			126	278		NA
32		Pakthouay			174	391		NA

No	Province	District	Village	No. of HH	No. of Population		No. of LAR-affected HH
					Total	Female	
			Neu				
33			Nongkuen	256	342	NA	
34			Sisomxay	275	371	NA	
35			Thabok	364	946	NA	
36			Palai	221	315	NA	
37			Somsaath	121	321	NA	
38			Na	179	462	NA	
49	Vientiane	Pak Ngum	Vuenkabao	125	749	NA	
40			Xienglea Na	115	639	NA	
41			Xienglea Tha	237	1,416	NA	
42			Nong	111	498	NA	
43			Thakokhai	178	378	NA	
44			Nabong	365	456	NA	
<b>Total</b>				<b>4,851</b>	<b>15,554</b>	<b>NA</b>	
<b>Access Road 4 villages and 1 sub-village</b>							
-	Bolikhamsay	Bolikhhan	Hat Gniun	67	371	157	A maximum of 202 HHs will lose land. As of April 2014, 80% of land required have been acquired. No physical relocation required.
-			Hatsaykham	33	218	108	
-			Thahuea	50	265	122	
45			Nonsomboun	62	313	151	
46			Sisavath	51			
<b>Total</b>				<b>263</b>	<b>1,167</b>	<b>538</b>	

Table 13: Population and Number of Households in the Project Area including impacted and non-impacted households (Source: Field Survey 2008 and Field Survey 2011; Access Road Survey April 2013)

Land use (in ha)	Z1	2UR	2LR	Z3	Z4	Z5
1.1 Resident area	34.90	34.33	44.11	5.48	42.82	21.00
1.2 Paddy fields	353.00	276.73	264.49	33.76	228.19	30.00
1.3 Upland rice fields	440.70	155.14	313.15	60.60	10.88	NA
1.4 Other cultivated land	495.10	424.58	679.71	38.00	142.70	462.00
1.5 Fish Ponds (ha)	34.20	0.00	2.72	0.68	5.26	NA
1.6 Other land	55.30	14.00	1,432.18	0.00	NA	NA

<b>Total Private Land</b>	<b>1,413.30</b>	<b>904.78</b>	<b>2,736.36</b>	<b>138.52</b>	<b>429.00</b>	<b>513.00</b>
2.1 School Land	6.80	4.00	4.10	0.70	NA	NA
2.2 Temple Land	0.20	0.50	0.00	0.00	NA	NA
2.3 Village Office Land	0.50	0.00	0.00	0.00	NA	NA
2.4 Cemetery Land	0.90	7.00	10.50	1.20	NA	NA
2.5 Village Health Centre	16.60	1.63	0.00	0.00	NA	NA
2.6 Community Grazing Land	189.80	50.55	263.00	67.00	NA	NA
2.7 Other Public Land	100.10	85.40		4.60	NA	NA
<b>Total Public Land</b>	<b>314.90</b>	<b>149.08</b>	<b>277.60</b>	<b>73.50</b>	<b>NA</b>	<b>NA</b>
3.1 Community Managed Production forest	3,797.00	3,152.00	2,510.00	193.00	NA	NA
3.2 Community Managed Reserved Forest	2,795.00	1,584.00	894.00	244.00	NA	NA
3.3 Protection Forest	3,328.00	6,620.50		107.00	NA	NA
3.4 Unstocked Forest	4,599.00	1,610.00	613.00	97.00	NA	NA
3.5 Buffer Zone	248.20	50.55	477.00	25.00	NA	NA
<b>Total Forest Land</b>	<b>14,767.20</b>	<b>13,017.10</b>	<b>4,494.00</b>	<b>666.00</b>	<b>2,526.79</b>	
<b>Total Land</b>	<b>16,495.40</b>	<b>14,070.91</b>	<b>7,507.96</b>	<b>878.02</b>	<b>2,956.64</b>	<b>513.00</b>

Table 14: Land Use in Project Zones (Source: Surveys 2011 and 2007/08)

53. The following chapters outline how these zones are impacted and which mitigation and development measures the Project will take.



## CHAPTER 3 - Legal Framework

### 3.1 National Laws and Policies and ADB Policy Requirements

54. Safeguard policies are operational policies that seek to avoid, mitigate, minimize, or compensate adverse environmental and social impacts, including protecting the rights of those likely to be affected or marginalized, or who may have their ethnic identity compromised by the development process. GoL has the objective of pursuing economic growth in an environmentally sustainable manner. National legislation in Lao PDR immediately relevant to E&S safeguards for NNP1 includes:
- Prime Minister’s Decree No 192/PM, dated 7 July 2005 on Compensation and Resettlement of People Affected by Development Projects,
  - Prime Minister’s Decree, dated 16 February 2010, on Environment Impact Assessment.
  - The Minister to the Prime Minister’s Office and Head of the Water Resources and Environment Administration (WREA) endorses and promulgate the Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, issued in March 2010.
  - The updated Constitution (2003), Road Law 03 (NA) 1999, Land Law 04 (NA) 2003, National Hydropower Policy (2006), and PM Decree 101 on Implementation of the Land Law (2006), Decree 135/PM on State Land Lease or Concession (2009), all contain provisions relevant to involuntary resettlement and ethnic minority rights.
55. Decrees 192, 112 and Regulation 99 provide the guiding Lao PDR legal and policy environmental and social (E&S) framework for development projects, and represent significant improvements in its national E&S safeguards regulatory framework vis-à-vis ADB's SPS. Decree 135 establishes methodologies for assessing compensation valuations and unit rates.
56. ADB's SPS was issued in June 2009 and applies to all projects funded by ADB effective from 20 January 2010. This operational policy revision resulted in a consolidated policy outlining common objectives of ADB's safeguards, policy principles, and delivery process for the SPS. It also outlines a set of specific safeguard requirements when addressing social and environmental impacts and risks. These are supported by an Operations Manual which outlines the procedural requirements through which the ADB ensures the social and environmental sustainability it supports<sup>7</sup>.
57. ADB’s SPS consists of three operational policies on the Environment, Indigenous Peoples, and Involuntary Resettlement<sup>8</sup>. Objectives of ADB’s environmental and social safeguards are to: (i) avoid adverse impacts of projects on the environment and affected people, where

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<sup>7</sup> OM F1/OP, 4th March 2010. Available from <http://www.adb.org/Documents/Manuals/Operations/OMF01-4Mar2010.pdf>.

<sup>8</sup> Asian Development Bank, Safeguard Policy Statement, (SPS), June 2009

possible; (ii) minimize, mitigate, and/or compensate for adverse project impacts on the environment and affected people when avoidance is not possible, and (iii) help borrowers/clients to strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

58. Resettlement is involuntary when individuals or communities are physically displaced (relocation, loss of residential land, or loss of shelter) and/or economically displaced (loss of land, assets, access to assets, income sources, or means of livelihood) as a result of involuntary acquisition of land or involuntary restrictions on land use or access<sup>9</sup>.
59. Both Lao law and ADB SPS entitle affected persons to compensation for affected land and non-land assets at replacement cost, as well as to livelihood restoration. The key difference between the two refers to the definition of "significant" involuntary resettlement impact. While ADB defines this as more than 200 persons experiencing major impacts, which are defined as being physically displaced from housing or losing 10% or more than their productive assets<sup>10</sup>, MoNRE (formerly WREA) defines "severe impacts" where all assets are lost and/or more than 20% of productive (income generating) assets are lost<sup>11</sup>.
60. NNP1 will adopt ADB's standard of 10% or more asset loss as the benchmark for establishing the definition of "significant" or "severe".
61. According to national regulations<sup>12</sup>, all persons in Lao PDR severely affected by development projects including those persons affected by the loss of 20% or more of their productive assets (agricultural or commercial land or shop) or loss of primary source of household incomes and in need to be relocated to new site, or to reorganize on existing location, would be entitled to food support for each person in the household for a period of six months. Affected persons displaced due to the loss of residential house without any impact on business or source of incomes will be entitled to food allowance for each member of the household for a period of three months. The transition subsistence allowance is intended to make up for lost income and to compensate for other household expenses during the transition period while affected persons are trying to settle down at the new site. The preferred mode of payment of this allowance is in kind. However, where this is logistically not possible and at specific request of affected persons, this allowance may be given in cash.
62. This requirement is based on the assumption that PAPs will relocate with no prior livelihood preparation. The NNP1 project intends to work for at least 2 years prior to physical relocation to ensure that there is no loss of primary source of household income by preparing the new agricultural area, planting replacement trees/saplings in the new

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<sup>9</sup> Ibid

<sup>10</sup> OM, F1/OP, op cit, para 9

<sup>11</sup> Prime Minister's Office, WREA, Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, March 2010, para 8.2.1

<sup>12</sup> Ibid

resettlement area, providing training in agricultural extension, and supporting livelihood activities in the new location, so that any adverse livelihood impacts of relocation are avoided or minimized. Therefore the actual support will be for much longer than the statutory 3 months, and will attempt to ensure there will be no loss of income. There will also be no household expenses during the transition period, as the project will cover these, as specified in the entitlement matrix.

63. The objective of this REDP is also to guide the project to ensure that livelihoods and standards of living of displaced persons are improved, not merely restored, by providing adequate housing, security of land tenure and steady income and livelihood sources for affected households when impacts are significant. Where impacts are deemed not significant, cash compensation will be provided, if no compensation in kind is directly available.
64. ADB's SPS Safeguards Requirements 3 on indigenous people (IP policy) identify key challenges, including (i) recognition of Indigenous Peoples' cultural identity and rights to their ancestral lands and resources, (ii) fair sharing of development benefits among affected Indigenous Peoples communities and the rest of the Society, and (iii) meaningful and culturally appropriate consultations with Indigenous Peoples communities in planning and implementation projects that are likely to affect their lives.
65. In Lao PDR the ADB's IP Policy applies to ethnic minorities, as all Lao consider themselves indigenous to the country. Almost all affected people under the NNP1 project belong to a single ethnic group, namely Hmong. Decree 192 specifies that mitigation measures and socio-economic benefits should improve status of ethnic communities and be in harmony with their cultural preferences<sup>13</sup>, while the updated Guideline requires special attention paid to poor and vulnerable groups (para 20.1), of which ethnic minorities form a majority in Laos. It is for this reason that this REDP identifies impacts and integrates mitigating measures to address issues related to land acquisition and involuntary resettlement, while the SDP addresses gender and development, public health, labour and social protection, with particular attention and sensitivity to special needs of affected ethnic minorities.
66. All compensation and mitigation measures outlined in this REDP are available to eligible households, irrespective of ethnic identity. However, special measures have been included to ensure that activities address specific needs of affected ethnic minorities, particularly of women. These measures include:
  - support for non-formal education in Houaysoup, with an emphasis on female literacy;
  - support for health and nutrition education, with particular attention to customary Hmong practices;
  - women and men included on village resettlement and grievance process committees;
  - compensation will be given to both husband and wife in a jointly named bank

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<sup>13</sup> PM Decree 192, Compensation & Resettlement of Development Projects, July 2005, Article 11.3

- account;
- land titles will be ensured for Houaysoup resettlers, with title jointly in the name of husband and wife, or in the name of second wives where applicable;
  - no ethnic minority from Zone 2UR will be required to relocate outside the existing village boundary;
  - Hmong households from Hatsaykham will not be required to relocate to a Lao village, but may integrate with other Hmong households from Zone 2LR in Houaysoup resettlement site;
  - public consultation meetings include verbal translation in ethnic minority languages, and key documents translated into Hmong language;
  - all PAPs, irrespective of ethnic identity, are treated the same and are entitled to the same compensation and mitigation measures where eligible;
  - both male and female PAPs will be able to participate in jobs available;
  - a code of conduct for project and Contractor's staff will be required.
67. As the Project will create temporary and permanent employment for skilled and unskilled labour, the Project will comply with ADB's Social Protection Strategy (2001) which upholds international recognised labour standards and/or national labour laws, particularly on the following conventions: (1) no harmful or exploitative forms of forced labour, (2) no child labour, (3) no discrimination in respect of employment and occupation, and (4) no restrictions of freedom of association and the effective recognition of the right to collective bargaining.
68. The Project's CA (Annex C, Appendix 2) outlines in details applicable standards, of which a selection is included in Table 15.

Year	Institution	Subject
1996	GoL	Water Resources Law, No 05/NA; 11 October 1996 and the Presidential Decree promulgating the law, No126/PDR;; 2 November 1996
1999	GoL	Law on Environmental Protection; 3 April 1999
2001	GoL	Decree on the Implementation of the Environmental Protection Law; 4 June 2001
2003	GoL	Constitution of the Lao People's Democratic Republic; 15 August 1991, amended on 6 May 2003
2003	GoL	Land Law; 21 October 2003
2004	GoL	Law on Promotion on Foreign Investment; 22 October 2004
2005	GoL	Decree on the Compensation and Resettlement of Development Projects, No. 192/PM;; 7 July 2005
2005	GoL	National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR, 7th June 2005.
2006	GoL	Regulations for Implementing Decree 192/PM on Compensation and Resettlement of People Affected by Development Projects
2007	GoL	Forestry Law; 24 December 2007
2007	GoL	Wildlife and Aquatic Law No 07/NA; 24 December 2007

2008	GoL	Electricity Law, No 03/NA; 8 Dec 2008
2009	GoL	Decree on State Land Lease or Concession; 25 May 2009, No. 135/PM
2010	GoL	The Decree on Environmental Impact Assessment, No 112/PM; 16 February 2010
2010	GoL	Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects, Regulation 699/PMO, MONRE March 2010
1998	ADB	Gender and Development Policy (1998);
2001	ADB	Social Protection Strategy (2001)
2009	ADB	ADB Safeguard Policy Statement (2009) including (II) Safeguard Requirements 2: Involuntary Resettlement; and (III) Safeguard Requirements 3: Indigenous Peoples
2011	ADB	Public Communications Policy (2011); and
2002	IFC	IFC Handbook for Preparing a Resettlement Action Plan, 2002
2012	IFC	Performance Standard 5: Land Acquisition and Involuntary Resettlement
2012	IFC	Performance Standard 7: Indigenous Peoples
2012	IFC	Performance Standard 8: Cultural Heritage

Table 15: Selection of Social Standards to be applied by NNP1 according to the CA, Annex C, Appendix 2

### 3.2 GAP Analysis

69. Table 16 and Table 17 summarise differences between ADB and GoL policies on resettlement (SR2) and ethnic (IP - SR3) safeguards, and describes how the NNP1 project will bridge any gaps arising.

<b>ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)</b>	<b>Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)</b>	<b>Gap filling Measures</b>
1. Screen the project early on to identify past, present, and future involuntary resettlement impacts and risks. Determine the scope of resettlement planning through a survey and/or census of displaced persons, including a gender analysis, specifically related to resettlement impacts and risks.	Article 4 requires project owners to (a) carry-out surveys and field investigations, identify affected communities and prepare inventory of impacts by type and degree.	No difference. No gap-filling measure required.
2. Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement	Article 4 requires project owners to... (d) ensure resettlement process is carried out through a meaningful involvement of project-affected communities, and their existing social and	No major difference.  The Project ensures preparation of communities before major decisions by households have to be taken, for example through family financial trainings before

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
<p>options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons' concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.</p>	<p>cultural institutions are supported to the greatest extent feasible;</p> <p>(c) Pay particular attention to the needs of the poorest affected people, and their existing social and cultural institutions are supported to the greatest extent possible.</p> <p>Article 13 requires the establishment of grievance redress mechanism. More specifically it requires the establishment of a grievance redress committee to address complaints and grievances pertaining to land acquisition, compensation and resettlement due to the project.</p> <p>The assistance should also include institutional strengthening and capacity building of tribal elders, community groups working on resettlement activities.</p>	<p>compensation payments, a literacy program, agricultural trails and demonstrations before resettlement, study tours to other hydropower projects, etc. This complements appropriate consultation technologies as focus group discussions with vulnerable groups, usage of local languages, appropriate IEC materials, etc.</p>
<p>3. Improve, or at least restore, the livelihoods of all displaced persons through (i) land-based resettlement strategies when affected livelihoods are land based where possible or cash compensation at replacement value for land when the loss of land does not undermine livelihoods, (ii) prompt replacement of assets with access to assets of equal or higher value, (iii) prompt compensation at full</p>	<p>Article 6 requires that:</p> <p>1. Project owners shall compensate project affected people for their lost rights to use land and for their assets (structures, crops, trees, and other fixed assets) affect in full or in part, at replacement cost.</p> <p>Article 8 on Economic Rehabilitation requires that: 2. For displaced persons whose land-based livelihoods are affected due to the Project, preference shall be given to</p>	<p>No major difference.</p> <p>Decree 192 Technical Guidelines (March 2010) specifically require inclusion of criteria that will assist in the formulation of development strategies and equitable distribution of project development benefits, especially maximizing the impacts on poverty alleviation. The Project follows ADB standards on compensation before impact.</p>

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
replacement cost for assets that cannot be restored, and (iv) additional revenues and services through benefit sharing schemes where possible.	land-based resettlement strategies, or where land is no available, options built around opportunities for employment.	<p>With respect to poor and vulnerable PAPs, ADB standards require the project to improve their standards of living to at least national minimum standards.</p> <p>On top of the compensation and restoration measures, the Project will implement benefit sharing schemes through social development activities as well as a community development program with yearly payments of 195,000USD for the entire duration of the concession period following COD</p>
	<p>Article 8 on Economic Rehabilitation requires that :</p> <p>1. All PAPs severely affected by the Project due to loss of 20% or more of productive income generating assets (loss of agricultural, industrial or commercial land), means of livelihood, employment or business, and access to community resources shall be entitled to sustainable income restoration measures in addition to their entitlement for compensation and other allowances to attain at a minimum pre-project livelihood levels.</p>	<p>ADB SPS does not have a definition of severely affected PAPs. However, OMF1 defines significant impacts as 200 or more persons experiencing major impacts, which are defined as being physically displaced from housing or losing 10% or more than their productive assets. NNP1PC will adopt ADB's standard of 10% or more asset loss as the benchmark for establishing the definition of "significant" or "severe".</p> <p>NN1PC will likewise ensure that livelihoods of all displaced persons losing less than 10% of their land will be restored by paying cash compensation at replacement cost.</p>
4. Provide physically and economically displaced persons with needed assistance, including the following: (i) if there is relocation, secured	<p>Article 10 requires</p> <p>1. All persons relocating to group resettlement sites shall be provided with suitable housing or developed housing lots, shop</p>	<p>No major difference.</p> <p>The Project will follow both standards which outline the different entitlements for PAPs, described in detail in the</p>

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
<p>tenure to relocation land, better housing at resettlement sites with comparable access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, and extension of project benefits to host communities; (ii) transitional support and development assistance, such as land development, credit facilities, training, or employment opportunities; and (iii) civic infrastructure and community services, as required.</p>	<p>lots if businesses are affected, agricultural sites of equivalent size, with productive potential and locational advantages better or at least equivalent to the old site. Replacement land, house/business plot shall be as close as possible to the land that was lost and/or acceptable to PAPs. Group resettlement sites shall be developed with water supply, sanitation, drainage, with internal access roads, and access to electricity.</p> <p>2. All replacement land for agriculture, residential and businesses shall be provided with secured land titles and certificates and without any additional cost, sales taxes, fee surcharge to PAPs at the time of transfer.</p> <p>Article 7 requires that PAPs displaced and/or affected due to the loss of income and livelihood shall be provided with the following assistance until their income levels and living conditions are stabilized: Transport allowance or assistance in kind; Food allowance, in cash or in kind; Suitable development assistance after displacement during the transition period until they are able to restore their incomes and living standards or reach the targeted level of household incomes on a sustainable basis</p>	<p>prepared Detailed Entitlement Matrices. A basic principle is thereby that replacement assets will be of the same or better quality in regard to their impact on the livelihood of PAPs; this includes amongst others housing as well as public infrastructure. Furthermore, if resettlement is required, at the new resettlement site livelihood opportunities of the same or better quality shall be present. Transitional support shall be provided. Host communities shall have the right to use public infrastructure constructed by the Project and shall be integrated into the Project's livelihood program.</p>
<p>5. Improve the standards of living of the displaced poor and other vulnerable groups,</p>	<p>Article 8, requires that 4. ...rehabilitation measures shall specifically focus on</p>	<p>No gap-filling measure required. While women are not explicitly mentioned in this</p>



ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
including women, to at least national minimum standards. In rural areas provide them with legal and affordable access to land and resources, and in urban areas provide them with appropriate income sources and legal and affordable access to adequate housing.	vulnerable groups. Adequate assistance in addition to compensation for affected assets and other allowances shall be provided to enable such PAPs to achieve household income targets set above the poverty line.	article of the Lao standard as part of vulnerable groups, they are included elsewhere in the regulation and the Project will accordingly follow both standards in targeting gender topics.
6. Develop procedures in a transparent, consistent, and equitable manner if land acquisition is through negotiated settlement to ensure that those people who enter into negotiated settlements will maintain the same or better income and livelihood status.	No provision for negotiated settlement.	Not anticipated. In the unlikely event that there will be negotiated settlement, ADB policy will be followed.
7. Ensure that displaced persons without titles to land or any recognizable legal rights to land are eligible for resettlement assistance and compensation for loss of non-land assets.	<p>Article 6 requires ... 6. PAPs who are living in rural or remote areas, who do not have any legal Land Use Certificate or any acceptable other proof indicating land use right to the affected land and assets they occupy shall be compensated for their lost rights to use land and for their other assets at replacement cost and provided additional assistance to ensure that they are not worse-off due to the project...</p> <p>7. All PAPs, regardless of land use right, will be entitled to compensation for lost assets (structures, crops, trees) at replacement cost, and provided with other assistance during the transition period, and economic rehabilitation assistance to ensure that they are not worse off due to the project.</p>	<p>NNP1PC will provide displaced persons with customary rights to land compensation for loss of land-use rights at replacement cost, in addition to compensation for their other assets and other assistance. Where impacted land exceeds the land allocation in the designated resettlement site, cash compensation will be provided for the areas which cannot be compensated with replacement land.</p> <p>Should displaced persons be found to be non-titled and required to relocate, the Project will ensure they are provided replacement land at no cost to the displaced persons, as long as not judged by GoL monitoring institutions as project-related opportunistic short-term encroachers. Acquisition and/or</p>

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
	8. Land without titles are legalizable via the concept of customary land use rights, a process the Project applies. Customary land use rights do not void land regulations, which entitle each household to a maximum size of land holdings based on the household's workforce and the estimated amount of land a worker can cultivate.	amendment of land titles by GoL will be assisted by the company.
8. Prepare a resettlement plan elaborating on displaced persons' entitlements, the income and livelihood restoration strategy, institutional arrangements, monitoring and reporting framework, budget, and time-bound implementation schedule.	Article 14 requires Project owners to prepare the resettlement plan with detailed cost estimates for compensation and other resettlement entitlements and relocation of PAPs. The Technical Guidelines further elaborate under 5.5.2 the content of a Resettlement Plan equivalent to ADB requirements.	The Project will combine national and ADB requests regarding resettlement plans. Items not included in both definitions include additionally from SPS SR2 the livelihood restoration strategy, the institutional arrangement, as well as the reporting framework. The Technical Guidelines request additionally a review of the legal framework of the Lao PDR, the results of the SIA, and grievance redress procedures.
9. Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.	Article 12 requires project owners to make concerted efforts for an effective public dissemination of information about the objectives of the project, the compensator package that is part of the resettlement process, through mass media such as newspapers, radio, TV, our public meeting and other means to inform local authorities at provincial, district and village levels and mass organizations, PAPs and other concerned	No major difference for disclosure of key information from the draft RP. No explicit requirement to disclose the final resettlement plan and its updates. NNP1PC has disclosed the key information from the draft resettlement plan. The NNP1 CA follows the ADB standard and requires timely disclosure of impacts, of plans before implementation, and of updates of the documents. They will be accessible on the Project Website as well as on ADB

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
	parties as necessary.	website in English language, with the Executive Summaries translated into local languages.
10. Conceive and execute involuntary resettlement as part of a development project or program. Include the full costs of resettlement in the presentation of project's costs and benefits. For a project with significant involuntary resettlement impacts, consider implementing the involuntary resettlement component of the project as a stand-alone operation.	Decree 192, Article 12 states that "Total estimated cost of RPs shall be included in the cost of the Project. In case of cost-overruns due to unforeseen circumstances or delays, the project authorities/owners shall allocated additional funds as may be necessary.	Consistent with GoL.  GoL has no requirement for implementing the IR component of the project as a stand-alone operation.
11. Pay compensation and provide other resettlement entitlements before physical or economic displacement. Implement the resettlement plan under close supervision throughout project implementation.	Article 6, (10) Prior to the commencement of project construction, PAPs shall be fully compensated and resettled and rehabilitation measures shall be in place, although not necessarily completed yet.	No civil works will be undertaken for areas in each phase where there are involuntary resettlement impacts until the relevant update is prepared, a census of affected persons is conducted, unit rates for compensation and entitlements agreed during consultations. Updates of the REDP covering updated information of each zone will be submitted to ADB prior to any involuntary resettlement impacts. For any unanticipated impacts, social impacts will be assessed and the relevant document will be updated.
12. Monitor and assess resettlement outcomes, their impacts on the standards of living of displaced persons, and whether the objectives of the resettlement plan have been achieved by taking into account the baseline conditions and the	Article 16 requires that ...1. Project owners shall make adequate monitoring arrangements of the implementation of the compensation, resettlement and rehabilitation measures. 2. The project shall make post	Except for the disclosure of monitoring reports, there is no difference between GoL and ADB SPS.  For highly complex sensitive projects, quarterly internal monitoring reports submitted to

ADB SPS SR2 on Involuntary Resettlement Policy Principles (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
results of resettlement monitoring. Disclose monitoring reports.	evaluation 6 months to 1 year after completion of the resettlement and rehabilitation measures, to check whether the economic rehabilitation and the livelihood objectives of the resettlement plan have been achieved.	ADB will be publicly disclosed.  Semi-annual external monitoring reports submitted to ADB will be publicly disclosed.
13. /	GoL encourages voluntary donation of land (Article 11 of 192/PM) if a displaced person's loss of income is less than 20%	Voluntary donations are not covered in the SPS. NNP1 will not permit voluntary land donations

Table 16: Gap Analysis ADB SPS SR2 / National regulations

ADB SPS SR3 on Indigenous People (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
1. IPs are identified by (a) self-identification, (b) collective attachment to geographically distinct habitats or ancestral territories, (c) customary cultural, economic, social, or political institutions separate from those of the dominant society and culture, and (d) a distinct language; these characteristics can apply in varying degrees	GoL does not recognise the term "Indigenous Peoples", but does recognise the presence and uniqueness of different ethnic groups in Lao PDR	The Project has identified the presence of Ethnic Groups in the PIZ based on the definition of SPS SR3. The term "Ethnic Groups" are used throughout the REDP instead of "Indigenous Peoples".
2. IPs shall receive culturally appropriate social and economic benefits	The proposed mitigation measures should ensure that social and economic benefits they receive are in harmony with their cultural preferences. The focus of the EMDP should be on resource-based, non-cash measures that are developed through an extensive public participation and consultation to mitigate adverse impacts on	No major differences; meaningful consultations with ethnic groups will ensure appropriate social and economic benefits via land-for-land options, development of private and public infrastructure in the resettlement site, business opportunities, and appropriate livelihood restoration activities. The Project will additionally to

ADB SPS SR3 on Indigenous People (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
	such communities.	resettlement and compensation implementation, livelihood restoration, and social development activities make annual payments to a community development program in the amount of US\$ 195,000 each year during the Concession Period following COD
3. IPs shall not suffer adverse impacts as a result of projects	General provisions of impact mitigation due to resettlement	The Project agreed that adverse impacts shall be i. prevented or avoided, whenever and wherever, and to the extent possible; ii. reduced, whenever and wherever, and to the extent possible, when prevention or avoidance cannot be achieved; iii. remedied and rectified, whenever and wherever, and to the extent possible, when prevention or avoidance or reduction cannot be achieved; and iv. compensated through payment to be made to GOL and / or to Project Affected Persons, as the case may be, whenever and wherever such Adverse Impacts have not been wholly prevented or avoided, reduced or remedied by the Company
4. IPs shall participate actively in projects that affect them	Information should be gathered from group meetings, one with a general assembly of affected ethnic minority groups in the area and one with indigenous women, especially those who live along the zone of influence of the project area.	The Project applies a variety of consultation methods to integrate different voices from ethnic groups into the consultations, including village elders, women, elderly, youth, and vulnerable persons
5. Culturally appropriate grievance procedures, monitoring and evaluation	The community participation and consultation framework and grievance redress	The Project's GRM starts on the village level and integrates into the village grievance committees

ADB SPS SR3 on Indigenous People (2009)	Decree 192 on Compensation and Resettlement of People Affected by Development Projects Requirements (2005) and Updated Technical Guidelines (2010)	Gap filling Measures
arrangements shall be put in place	mechanism should be developed in culturally appropriate ways familiar to the ethnic minorities. They should be developed with the ethnic minority groups and their tribal leaders in close collaboration with local officials.	not just administrative authorities but as well members of local mass organizations and elders, ensuring participation of ethnic groups in the GRM. Women as well as men will be included in village grievance committees.
6. Ascertain the consent of affected Indigenous Peoples communities to the following project activities where Indigenous Peoples groups are deemed to be particularly vulnerable: physical relocation from traditional or customary lands and commercial development of natural resources within customary lands under use that would impact the livelihoods or on cultural, ceremonial, or spiritual uses of the lands that define the identity and community of Indigenous Peoples	If the Social Assessment indicates that the potential impact of the proposed sub-project will be significantly adverse and that the ethnic minority community rejects the project, the project authorities should consider redesigning or reformulating the project.	The Project follows the higher standard to ascertain Broad Community Support as defined by ADB SPS SR3.
7. Preparation of an Indigenous Peoples Plan	An Ethnic Minority Development Plan (EMDP) will be developed	Due to the overlap between resettlers and ethnic group people, a resettlement plan and an ethnic development plan is combined into a Resettlement and Ethnic Development Plan, clearly marking the EDP and related assessments and measures inside the REDP
8. /	Wherever possible, staff with ethnic minority background and experience should be hired as part of the social impact assessment team as well as the monitoring team.	The Project will hire persons from Hmong and Khmu ethnic groups, as well as from Lao Loum.

Table 17: Gap Analysis ADB SPS SR3 / National regulations

70. The CA explicitly states that if inconsistencies exist between different standards, the higher standards to the benefit of PAPs have to be followed, and this will apply for all E&S measures and activities.

### ***3.3 Framework on Public Consultations and Information Disclosure***

#### **3.3.1 Laws and Regulations of Lao PDR**

71. Article 12 of Decree No. 192/PM states that a participatory manner is necessary when implementing a resettlement program so to ensure that PAPs, local authorities and other stakeholders are fully informed and consulted. Their concerns have to be taken into account at all stages of the project cycle, above all during the planning and implementation phases of land acquisition, calculation of compensation values, and resettlement.
72. Furthermore, the Project shall make concrete efforts for an effective public dissemination of information about the objectives of the project, the compensatory package that is part of the resettlement process, through the mass media such as newspaper, radio, TV or public meeting.
73. The Technical Guidelines/Decree 699 further elaborate the necessity of the Project to provide information and solicit public consultation with all affected parties, including informing them of the purpose and rationale of the project, and the expected impacts of the Project on the affected parties along with proposed resettlement plans, compensation measures, and other mitigation measures; following the general objectives of transparency, cooperation, and participation.
74. Further detailed provisions of these Lao regulations encompass that:
- Information dissemination will be in the local language;
  - A tribal representative/leader and relevant agency representative or social scientist knowledgeable in the ethnic minority group's history and tradition will always be present in all discussions with clusters of ethnic groups; and
  - All meetings will be properly documented and shared with the concerned ethnic minority groups.

#### **3.3.2 ADB Safeguard Policy Statement**

75. ADB policy standards have been outlined above. The key aspects for consultation and participation of PAPs will be quoted in details in the following few paragraphs:

##### **3.3.2.1 SPS provisions on Consultation and Participation**

76. Consultation and participation are central to the achievement of safeguard policy objectives. ADB requires meaningful consultation with affected persons and communities to be conducted at all stages of project activities. "Meaningful consultation" means:

- i. beginning early in the project preparation stage and is carried out on an on-going basis throughout the project cycle;
- ii. providing timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people;
- iii. undertaking the consultations in an atmosphere free of intimidation or coercion;
- iv. being gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and
- v. enabling the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.” (SPS Article 32)

### 3.3.2.2 Public Consultation and Disclosure (SPS SR2 Involuntary Resettlement)

- “Carry out meaningful consultations with affected persons, host communities, and concerned nongovernment organizations. Inform all displaced persons of their entitlements and resettlement options. Ensure their participation in planning, implementation, and monitoring and evaluation of resettlement programs. Pay particular attention to the needs of vulnerable groups, especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land, and ensure their participation in consultations. Establish a grievance redress mechanism to receive and facilitate resolution of the affected persons’ concerns. Support the social and cultural institutions of displaced persons and their host population. Where involuntary resettlement impacts and risks are highly complex and sensitive, compensation and resettlement decisions should be preceded by a social preparation phase.” (SPS page 17.2)
- “Disclose a draft resettlement plan, including documentation of the consultation process in a timely manner, before project appraisal, in an accessible place and a form and language(s) understandable to affected persons and other stakeholders. Disclose the final resettlement plan and its updates to affected persons and other stakeholders.” (SPS page 17.9)

### 3.3.2.3 Consultation and Disclosure (SPS SR3 Indigenous Peoples)

- “The borrower/client will undertake meaningful consultation with affected Indigenous Peoples to ensure their informed participation in (i) designing, implementing, and monitoring measures to avoid adverse impacts on them or, when avoidance is not possible, to minimize, mitigate, and compensate for such effects; and (ii) tailoring project benefits that accrue to them in a culturally appropriate manner....Consultation will be carried out in a manner commensurate with the impacts on affected communities. The consultation process and its results will be documented and reflected in the Indigenous Peoples plan (IPP).” (SPS SR3, para 10)
- “To carry out meaningful consultation with affected Indigenous Peoples, the borrower/client will establish a context-specific strategy for inclusive and participatory consultation, including approaches of identifying appropriate



Indigenous Peoples representatives, and consultation methods appropriate to the social and cultural values of the affected Indigenous Peoples communities. The borrower/client will pay special attention to the concerns of indigenous women and youth.” (SPS SR3,para 11)

- “When the borrower/client and the affected Indigenous Peoples have serious differences and disagreements in relation to the project, its components, or the IPP, the borrower/client will undertake good faith negotiations to resolve such differences and disagreements.” (SPS SR3,para 12)
- “The borrower/client will provide relevant information, including information from the above documents in a timely manner, in an accessible place and in a form and language(s) understandable to the affected Indigenous Peoples and other stakeholders. If the Indigenous Peoples are illiterate, other appropriate communication methods will be used.” (SPS SR3,para 21)
- Where a project entails (i) commercial development of the cultural resources and knowledge of Indigenous Peoples; (ii) physical displacement from traditional or customary lands; and (iii) commercial development of natural resources within customary lands under use that that would impact the livelihoods or the cultural, ceremonial, or spiritual uses that define the identity and community of Indigenous Peoples, “...the borrower/client will seek the consent of affected Indigenous Peoples communities. ...Consent of affected Indigenous Peoples communities refers to a collective expression by the affected Indigenous Peoples communities, through individuals and/or their recognized representatives, of broad community support for the project activities... Such broad community support may exist even if some individuals or groups object to the project activities.” (SPS page 61, para 30-31)
- “Where broad community support has been ascertained, the borrower/client will provide documentation that details the process and outcomes of consultations with Indigenous Peoples and Indigenous Peoples’ organizations, including (i) the findings of the SIA; (ii) the process of meaningful consultation with the affected Indigenous Peoples communities; (iii) the additional measures, including project design modification, that may be required to address adverse impacts on the Indigenous Peoples and to provide them with culturally appropriate project benefits; (iv) the recommendations for meaningful consultation with and participation by Indigenous Peoples communities during project implementation, monitoring, and evaluation; and (v) the content of any formal agreements reached with Indigenous Peoples communities and/or Indigenous Peoples’ organizations. The borrower/client will submit documentation of the engagement process to ADB for review and for ADB’s own investigation to assure itself of the existence of broad community support for the project activities. ADB will not finance the project if such support does not exist.” (SPS SR3,para 32)

#### **3.3.2.4 Public Communications Policy 2011**

77. The Public Communications Policy 2011, which partly refer to internal ADB policy but relevant for NNP1 as well requires the following:

- Proactive disclosure
- Presumption in favour of disclosure: All documents will be disclosed unless they contain information that falls within the exceptions of policies, which regards concern of privacy and confidentiality of stakeholders as well as national security issues of GoL
- Right to access and impart information and ideas: “ADB recognizes the right of people to seek, receive, and impart information and ideas about ADB assisted activities. ADB shall provide information in a timely, clear, and relevant manner. Information shall be given to affected people and other stakeholders, including women, the poor, and other vulnerable groups early enough for them to provide meaningful inputs into project design and implementation. ADB shall not selectively disclose information. People will have equal access to the information that ADB makes available under the policy”

78. The same principles will be followed by NNP1 in its public communication policy.

## Part II – Stakeholders, Institutions, and Consultations

## CHAPTER 4 - Stakeholder Analysis and Institutions

79. The following chapters of the methodology part of the SIA will outline how interaction with a variety of stakeholders forms the basis for an assessment of broader project impacts, the perceptions and concerns of the stakeholder, and an overall understanding of the broader project impacts. The Project has differentiated assessments along project zones as outlined above, but the aim of this document is not just to highlight the specific local impacts of the project, but also the wider development. Therefore, in a bottom-up approach, after starting with an overview on stakeholders and consultations in this part, the next part will provide results for the smaller zones, providing the variety of details to be used for an overall analysis in the final part of the document.
80. A key requirement of any project is stakeholder engagement. The first step in engaging communities and other key stakeholders is to know who they are, and their area of influence (both positive and negative) in relation to the project, the provinces and districts affected, and the broader socio-economic growth of Lao PDR.
81. A preliminary review of stakeholders has been developed based on exhaustive interviews with communities, district and provincial authorities, and based on fieldwork data analysis. It is important to recognize that the stakeholder list is not fixed, and may be updated during the course of project preparation and implementation.
82. The stakeholders in the Project can be separated into 3 broad categories.
- Primary stakeholders, who are people directly affected by the project, those who are indirectly affected, village organizations, and implementing agencies at district levels;
  - Secondary stakeholders are the developers, workers and other project staff, lenders, the GOL via various line ministries, GOL authorities at provincial and district level;
  - External stakeholders are NGOs, press and other media, and any other concerned parties who may have a legitimate interest in the Project.
83. Table 18 presents each type of stakeholder within these main categories, their relative priority of general interests, whether the Project will affect them adversely or provide benefits, and includes a brief description of their interests in the Project. The following sections outline the proposed engagement strategy of the Project with respect to different stakeholders during construction and operational phases.
84. The purpose of this exercise is two-fold:
- i. to ensure the concerns of the main stakeholders, in particular the primary stakeholders, are covered in the EIA, SIA, REDP, SDP, and other key documents, and
  - ii. to assure that all the stakeholders, whether primary or secondary or even external, are included in meetings and other participatory discussions.

Stakeholder	Potential Project Impact	Relative Priority of Interest	Key Stakeholders' Interests in the Project
<b>Primary Stakeholders</b>			
<i>Directly affected people, i.e. displaced PAPs: who will lose their property or lose livelihood opportunities due to inundation of the NNP1 reservoirs, and/or construction of various Project components</i>	(-)(+)	1	<ul style="list-style-type: none"> <li>• The comprehensive environmental, economic, social and cultural impacts of the Project</li> <li>• What properties and how much property will be affected? Privately owned or public property?</li> <li>• What will they get in return?</li> <li>• How will the losses be compensated or the impacts be mitigated?</li> <li>• Where will they be resettled?</li> <li>• How will their livelihoods be affected by the Project?</li> <li>• Who are the main people responsible or the people or organizations to contact in case compensation or mitigations measures are unsatisfactory?</li> <li>• Can they take part in the Project as workers or some other capacity?</li> <li>• What will be their sources of income after the project?</li> <li>• Will they still be able to continue their existing ways of life or livelihoods?</li> </ul>
<i>Indirectly affected people, i.e. non-displaced PAPs: who are in the same communities as some of the directly affected people, or who share the Nam Ngiep basin</i>	(-)(+)	2	<ul style="list-style-type: none"> <li>• What will be the impacts of the project?</li> <li>• Can they be certain there will be no direct impacts to them?</li> <li>• Will they also have the right to participate in the development programs or other activities of the Project that can provide benefits?</li> <li>• Is there any chance for them to be hired to work for the project?</li> <li>• What will be their livelihoods with the project?</li> <li>• Will they still be able to continue their existing ways of life or livelihoods?</li> </ul>
<i>Labourers and other staff</i>	(+)	3	<ul style="list-style-type: none"> <li>• Good living conditions in the workers' camp and good facilities</li> <li>• Adequate protection in hazard prone areas or protection from hazardous materials</li> <li>• Sufficient training for the assigned tasks</li> </ul>

Stakeholder	Potential Project Impact	Relative Priority of Interest	Key Stakeholders' Interests in the Project
<b>Village Organizations:</b> Village Headman and Deputy Village Security Police Health Volunteers Lao Youth Lao Women Union Front for National Construction	(-)(+)	1	<ul style="list-style-type: none"> <li>• Continuation of existing organizational arrangements at the new resettlement sites</li> <li>• Boundaries and land use of the new villages</li> <li>• Land reallocation criteria and fair application of the criteria</li> <li>• Management of newly introduced development projects</li> <li>• Priority of participation in the newly introduced development projects or activities</li> <li>• Ability to be the first line of approach for Grievance Procedures</li> </ul>
<b>Secondary Stakeholders</b>			
<b>Developers:</b> NNP1PC EGATi KANSAI LHSE	(+)		<ul style="list-style-type: none"> <li>• Costs</li> <li>• The most economical and practical process</li> <li>• The fastest way to implement the plan efficiently</li> <li>• Efficient and effective communication with stakeholders</li> <li>• Investment profit and positive image</li> <li>• Ability to meet loan and legal requirements of GoL and Lenders</li> </ul>
<b>Development Lenders:</b> ADB and JBIC + Banks adhering to Equator Principles (Development Banks)	(+)		<ul style="list-style-type: none"> <li>• Reduce poverty among APs and promote national development of Lao PDR</li> <li>• The Project is implemented according to approved plans and Concession Agreement</li> <li>• Affected people are adequately compensated</li> <li>• Integration of the Project into the overall plans and policies of the banks</li> <li>• Assure compliance with social and environmental safeguards to protect people, flora, fauna, and environment in the project area</li> <li>• Managing reputational risk to the Banks based on sound project planning and implementation</li> </ul>

Stakeholder	Potential Project Impact	Relative Priority of Interest	Key Stakeholders' Interests in the Project
<b>Commercial Lenders:</b> different commercial banks from Thailand and other countries	(+)		<ul style="list-style-type: none"> <li>• Dividends</li> <li>• Continuing repayment of debts</li> <li>• Reputation from being involved in a development project</li> <li>• Avoidance of bad publicity due to project controversies</li> </ul>
<b>Government of Lao PDR</b> via various line ministries, as MAF Ministry of Communication, Transport, Post and Construction Ministry of Industry and Handicrafts DOE Ministry of Labour and Social Welfare Ministry of Information and Culture Ministry of Education Ministry of Health	(-)(+)		<ul style="list-style-type: none"> <li>• Integration of the Project into the National Development Plan 2010-2015 and the Millennium Development Goals</li> <li>• Implementation of activities according to the Concessions Agreement</li> <li>• Sustainability of positive developments</li> <li>• Budget in-flows</li> <li>• Development of infrastructure</li> <li>• Technology transfers</li> <li>• Minimizing environmental and social impacts</li> <li>• Benefits to the local people, distributed thoroughly and evenly</li> <li>• Effective communication between the Project, GOL authorities, provincial and district counterparts, and affected people</li> <li>• Involvement of district and provinces in project implementation</li> </ul>
<b>GOL Authorities at Provincial Level:</b> Vientiane Province, Xaysomboune Province, Bolikhamxay Province	(-)(+)		<ul style="list-style-type: none"> <li>• Integration of Project and its elements into provincial development plans</li> <li>• Selection and management of personnel required to help implement and/or monitor the Project</li> </ul>
<b>GOL Authorities at District Level:</b> Hom District, Bolikhane District, Pakxan District, Thaphabath District, Pak Ngum District, Thathom District	(-)(+)		<ul style="list-style-type: none"> <li>• Integration of Project and its elements in district development plans</li> <li>• Selection and management of personnel required to help implement and/or monitor the Project</li> <li>• Benefit to the district and local people</li> <li>• Land use and land reallocation, + issuance of legal tenure documents</li> </ul>
<b>External Stakeholders</b>			
NGOs and other external	(-)(+)		<ul style="list-style-type: none"> <li>• Impacts on environment within Nam</li> </ul>

Stakeholder	Potential Project Impact	Relative Priority of Interest	Key Stakeholders' Interests in the Project
stakeholders			Ngiep watershed <ul style="list-style-type: none"> <li>• Impacts on environment of the Mekong River</li> <li>• Impacts of the Project on local people and the Lao PDR</li> <li>• Issues of culture, gender, ethnicity, etc.</li> <li>• Compliance with IFI safeguards policies</li> </ul>
Media	(-)(+)		Accompanying hydropower development in Mekong sub-region and disclose information to a global public, including the national audiences of developers

Table 18: Summary of Stakeholders

#### 4.1 Stakeholder's Institutions

Out of these stakeholders, a variety of institutions forms a stable framework, in which this Project is situated, encompassing government institutions on different level, project institutions, international institutions, civil society organizations, and last but not least information institutions in the communities, as for example elders and clan-leaders.

85. Of key importance are institutions of the public administration as outlined above. On national level, the Ministry of Natural Resources and Environment as well as the Ministry for Energy and Mines are the key agencies related to the Project. Further project activities require close cooperation with for example the Ministry of Agriculture and Forestry, the Ministry of Health and the Ministry of Education. Over the last 15 years, several dozen hydropower projects have been planned and partly already implemented in Lao PDR. The public administration on the national level is thereby well aware of the possibilities and challenges of hydropower projects. It has also established the necessary regulations as outlined in the previous chapter as well as the institutions to handle these projects. Further specific institutions for NNP1 are outlined below.
86. On the provincial level, Bolikhamxay has experience with Nam Theun 2, a Hydropower Project supported by International Financial Institutions, including the World Bank. Furthermore, Theun Hinboun, another Hydropower Project following the Equator Principles is located in Bolikhamxay. Civil servants assigned to cooperate with NNP1 have also experience with these Projects. In Xaysomboun, a Province just established in January 2014, less experience is available and more fundamental explanations from Project side are necessary. Similar than on national level, on provincial level the Department of Natural Resources and Environment, as well as the Department of Energy and Mines is of importance, as well as other departments working in the same areas as the ministries outlined above.



87. Of specific importance are the districts in Lao PDR, which are the essential authorities in the implementation of Government policies and instructions, with a congruent structure as described for the national and provincial level. The District Governors are due to the proximity to the impacted communities of essential importance for the Project. On the village level, the village chief is the first respondent for GoL as well as for the Project.
88. As described below for the PIZ, public administration gets complemented by mass organizations and local institutions, with the Lao People's Revolutionary Party in the forefront. Three mass organizations are of specific importance: the Lao Women's Union, the Lao Youth Union, and the Lao Front for National Construction. All of them have village level organizational structures, which are linked to provincial and national structures of these organizations.
89. As described in detail in section 17.1.1 the Lao Women's Union (LWU) is they core organization in Laos for the organization of women with over 600,000 members nationwide. Present in all villages, the Project can link its Gender Action Plan to the LWU, but also all other project activities involving women. Members of the LWU are also present in the grievance committees. Similarly, the Lao Youth Union is of importance when addressing interests and activities with young people.
90. Given the Project's impacts on ethnic groups, the Lao Front for National Construction is of importance, as this organization, complementing the Neo Lao Sang Sat (Ethnic Organization), is putting attention on the advancement of ethnic group people and has ethnic group people in the top ranks. It is the strongest organization focusing ethnic group issues and representing their interests on the different levels, also providing communication channels towards the national institutions.
91. Non-Profit-Associations outside these mass organizations play an increasing role in the socioeconomic development of the country, focusing mainly on capacity development on the local level. However, they are a recent development and still not very present in the overall public structure of Lao PDR; also in comparison with international NGOs and IOs, which, due to their financial possibilities, have higher outputs. A strong advantage of Non-Profit-Associations is their local knowledge and flexibility. For the construction of the Project itself, the Lao Federation of Trade Unions is important dealing with labour issues.
92. Apart from these organizations, informal institutions on village-level can be of importance for the Project, above all village elders. They overlap and complement the other public institutions on local level; and facilitate consent-oriented decision makings, formally implemented and enforced by public institutions. The clan-system in the Hmong communities is a similar informal institution with influence on social structures on the local level.
93. The institutional arrangements for NNP1 build thereby upon existing specific institutional structures that have been established for hydropower projects in Laos, or that otherwise concern environment or social or economic issues relating to this project. The institutional arrangements are intended to provide the means to implement the environmental and socioeconomic mitigation measures, development activities, and monitoring effectively,

while also building the capacity of local residents, administrative organizations, and government agencies. Vientiane and Xieng Khouang provinces have experience of hydropower projects being constructed in their districts, but none to current international safeguards standards. Part of this staff will work in the newly, re-founded Xaysomboune Province as well. Bolikhamxay has experience of Nam Theun 2 in Khamkeut district, but not on a day-to-day program implementation basis. EDL has experience of working with ADB to international safeguards standards for transmission lines and the Nabong sub-station.

94. NNP1 implementation arrangements are set up in such a way as to facilitate a process of addressing the concerns and needs of the main stakeholders – the PAPs, the project owners and developers, and the government – and to provide a framework for the participation of PAPs, for the resolution of any grievances that may arise, and for the involvement of any other project stakeholders in the process.
95. The overall framework of GoL-Project-cooperation is shown in the Figure 8. This framework is indicative and might be modified during the implementation phase as agreed between the parties.

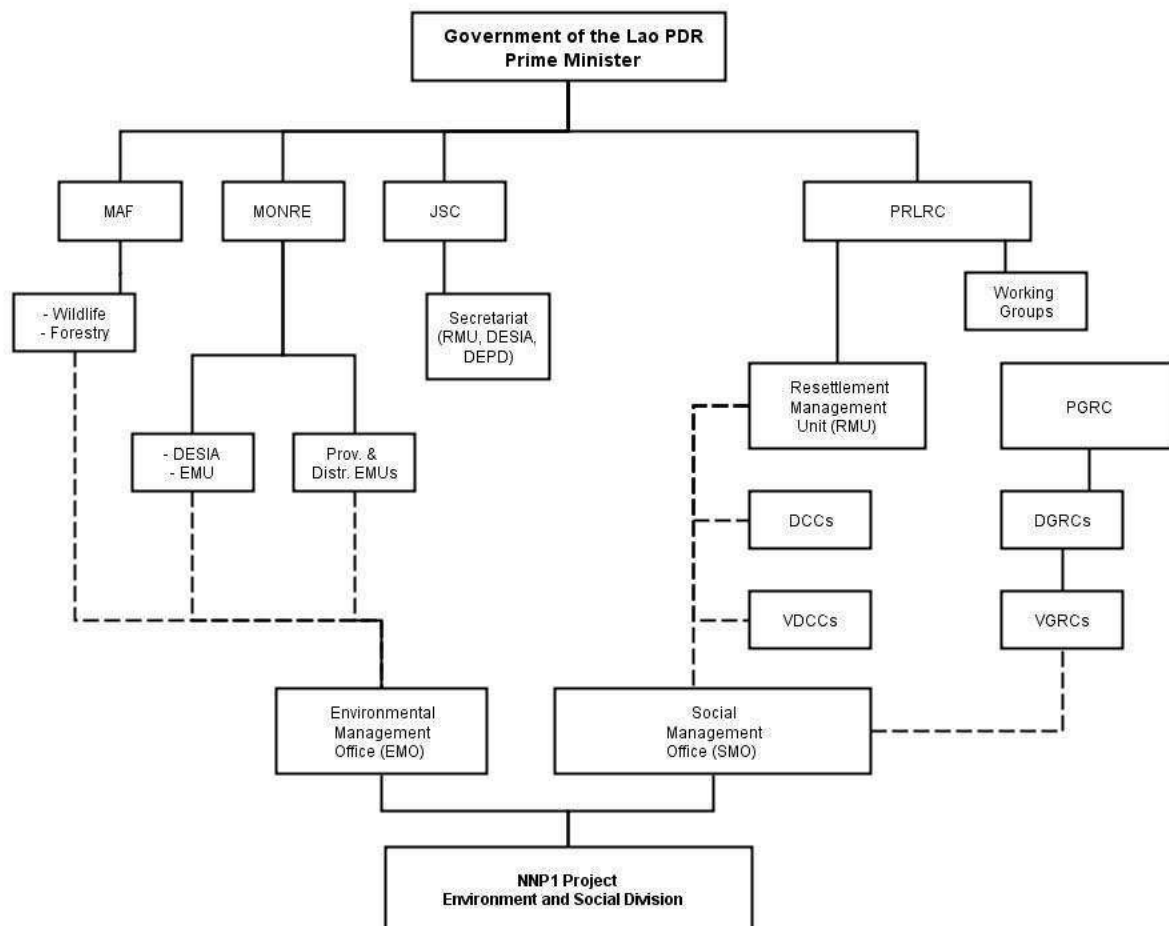


Figure 8: GoL-NNP1 Institutional Arrangements for the NNP1 Project

## ***4.2 Government Institutional Arrangements for the Project***

96. GoL has established the national level organizations responsible for setting policy and directions, for supervising and monitoring NNP1. The project provides additional resources so that these organizations can provide efficient and effective support to the implementation and monitoring of the mitigation measures and development programs under the Project.

### **4.2.1 Joint Steering Committee and Environmental Management Unit**

97. The Nam Ngiep 1 Project Joint Steering Committee (JSC) has been established by GoL to serve as a task force for the implementation of the NNP1 Project. It is attached to the Department of Energy Promotion and Development under the Ministry of Energy and Mines (MEM). Other members include representatives from MONRE and the Resettlement Management Unit of the Project. The JSC will lead GoL's public relations work and disclosure for the Project; provide GoL engineering staff and facilitate their work; coordinate with GoL project units and various government entities at national, provincial, and district levels; and monitor progress of the Project.
98. The Environmental Management Unit (EMU) has been established by MONRE to monitor the environmental components and mitigation measures of the Project and is described in details in the EIA and here just included for reasons of comprehensiveness.

### **4.2.2 Provincial Resettlement and Livelihood Restoration Committee**

99. GoL has established a Provincial Resettlement and Livelihood Restoration Committee (PRLRC) to oversee and monitor the planning and implementation of resettlement, compensation, livelihood restoration, and other social development activities of the project according to the provisions in the CA, Annex C, Appendix 5. The PRLRC has established the Resettlement Management Unit (RMU), the District Coordination Committees (DCC), and the Provincial, District, and Village Grievance Redress Committees (PRGC, DGRC, VGRC); and will supervise and instruct the RMU, the DCCs, and the Village Development Coordination Committees (VDCs) concerning the implementation of the resettlement, compensation, livelihood restoration, and other social measures. The VDCs will be established by the DCC. The PRLRC, now chaired by the Governor of Xaysomboun, will be responsible for these activities in all areas affected by the Project, and will work closely with the Environment and Social Division of the Project.
100. Other members of the PRLRC are District Heads of all the Districts affected by the Project, Directors of the relevant Provincial government offices, and a representative from the Lao Front for National Reconstruction. The Head of the RMU will serve as Secretary to the Committee.

### **4.2.3 Resettlement Management Unit**

101. A Resettlement Management Unit (RMU) has been established by and serves under the direction of the PRLRC, consisting of officials seconded from relevant GoL agencies or

personnel hired directly by the RMU, based in one of the two RMU offices in Xaysomboun respectively Bolikhamxay. The RMU administers the resettlement, compensation, livelihood restoration, and other social development activities of the project and ensure participation of all relevant GoL agencies in these activities. A list of activities has been outlined in the CA, Annex C, Appendix 5. The RMU works in coordination with the Social Management Office (SMO) of the Project. The RMU and SMO will have, according to the CA, its office in a District in each of the Xaysomboun Province and Bolikhamxay Province to be determined by PRLRC.

102. The RMU will be headed by a Manager, with first-hand experience with resettlement, compensation and rural development issues. Two RMU Co-Coordination shall be senior qualified officials, one from each Province (Bolikhamxay, Xaysomboun), with first-hand experience with resettlement, compensation and rural development issues, and selected from GoL line agencies at the provincial level, to work under the direction of the RMU Manager and coordinate the implementation of the social measures in their respective provinces. RMU Members will be selected from GoL line agencies at the provincial level, with other technical staff contracted to assist as needed with the implementation of the social measures.

#### **4.2.4 District Coordination Committees**

103. The PRLRC will establish District Coordination Committees (DCC) on recommendation of the RMU in districts affected by the project. The DCCs will work under the supervision of the PRLRC and the RMU, and in cooperation with the SMO. The DCCs will help implement the various registration surveys, resettlement, compensation, livelihood restoration, and other social development works of the Project. This will also include the construction or provision of roads, buildings, rural electrification, bridges, water supply, and other infrastructure projects related to resettlement and livelihood restoration works; provision of health services, education, occupational training, and other social development programs; agricultural development programs; and cultural and ethnic minority programs. Furthermore, the DCC will participate in the grievance redress processes.
104. The DCCs will consist of the District Governor, as Chairperson, and representatives from the District Natural Resources and Environment Office, the District Public Works and Transportation Office, the District Agriculture and Forestry Office (DAFO), the District Health Office, the District Education Office, the District Information, Culture and Tourism Office, the District Labour and Social Welfare Office, Police, Militia and Army, the Lao Youth Union, the Lao Women Union (LWU), Lao Front for National Construction (LFNC), and other contract staffs required.

#### **4.2.5 Village Development Coordination Committees**

105. The DCCs will establish Village Development Coordination Committees (VDC) as necessary in those villages affected by the project. With the support of the SMO and DCCs, the VDCs shall be the implementing body for the management and implementation of the

resettlement, livelihood restoration, and other social development works and activities. The VDCs are expected to represent the villagers in the affected areas, and to voice their concerns and assure their needs are met.

106. The VDCs will consist of the Head of the Village as Leader of the committee, and village authorities (Mass organizations, public security, defence, etc.), village elder representatives (Naew-Hom), Lao Women’s Union representatives, other skilled members of the community, representatives of all ethnic groups, and representatives of all vulnerable groups, as members.

### ***4.3 Overall Project Institutional Arrangements***

#### **4.3.1 Environment and Social Division**

107. NP1PC has established an Environment and Social Division (ESD) of the Project. The ESD consists of an Environmental Management Office (EMO) and a Social Management Office (SMO) to enable the Project to meet all of its environmental and social obligations, including resettlement, compensation, livelihood restoration, and other works. These are all to be carried out in close cooperation and in coordination with the relevant government organizations set up to implement environmental and social aspects of the project, such as the EMU, the PRLRC, the RMU, the DCCs and the VDCs, and government agencies responsible for various works as described above.
108. Among the ESD’s responsibilities are:
  - Manage the environmental, social, economic, and resettlement components;
  - Monitor and report to the developer on the effectiveness of implementation of the mitigation measures, social development activities, and resettlement program; and
  - Coordinate activities during construction and after construction with relevant government agencies, with the aim of improving the environmental performance of the project during its operating phase.
109. The ESD is the first point of contact for the EMU and other offices of MONRE and the RMU and indirectly (through the EMU and MONRE) for all other government agencies or offices, corporations, or for NGOs involved in the mitigation of environmental, social, and economic impacts of the project and/or sustainable economic and social development of the people . The ESD will also be the main contact between the project and affected people.
110. The ESD will be responsible on the Developer's side to handle all complaints and grievances arising during implementation of the EMP, SDP, and/or the REDP, and will to resolve problems with offended parties as well as the Grievance Redress institutions along the Grievance Redress Mechanism outlined above.
111. An ESD Deputy Managing Director (DMD) heads the ESD on a full time basis. He or she will closely work with the subordinated SMO and EMO Managers, which are responsible for the work of the respective offices. The DMD will report directly to the project proponent

Managing Director. His or her role will be to ensure that the mitigation and monitoring measures are implemented and that the applicable standards in the schedules of the EMP, SDP, and REDP and those also applicable to the operation of the project are applied. Breaches of the standards detected during compliance monitoring and mitigation measures undertaken to resolve the problem and the success or otherwise of these measures will be reported to the NNP1PC Managing Director by the DMD.

112. Further duties of the DMD are:

- Coordination, supervision, monitoring and reporting on activities undertaken in the EMP, SDP and REDP
- Liaising between the Managing Director, SMO and EMO Manager, the Government Agencies, and the contractors for implementation of E&S requirements, and concerned or contracted NGOs.
- Supervising and monitoring together with the managers of SMO and EMO field activities of ESD staff in relation to implementing the EMP, SDP and REDP.
- Supervising specific routine technical tasks of the ESD such as water quality monitoring
- Reporting to the Managing Director.

113. To implement these tasks, the DMD will be aided by full and part time national and international staff and consultants in SMO and EMO; as well as by GoL Relations officers and an ESD administration support.

### **4.3.2 Environmental Management Office**

114. Major tasks of the Environmental Management Office (EMO), mentioned here for reasons of comprehensiveness and described in detail in the environmental documents, is to collect all the baseline data and information and conduct subsequent monitoring of all aspects of the environment that could be affected by the project, such as fish and other aquatic resources, hydrology, water quality, river bank erosion, forest cover, etc., and implement the mitigation measures in the EMP.

115. Thereby, monitoring environmental indicators in the project area is one task, while monitoring of construction is another. The later includes the preparation of detailed plans with the contractors on the management and mitigation of environmental aspects of different construction sites, including access roads and transmission lines, ensuring the contractors provide adequate environmental facilities and management for the work sites, and monitoring safety of the workers in the work sites; the latter links to activities of the SMO.

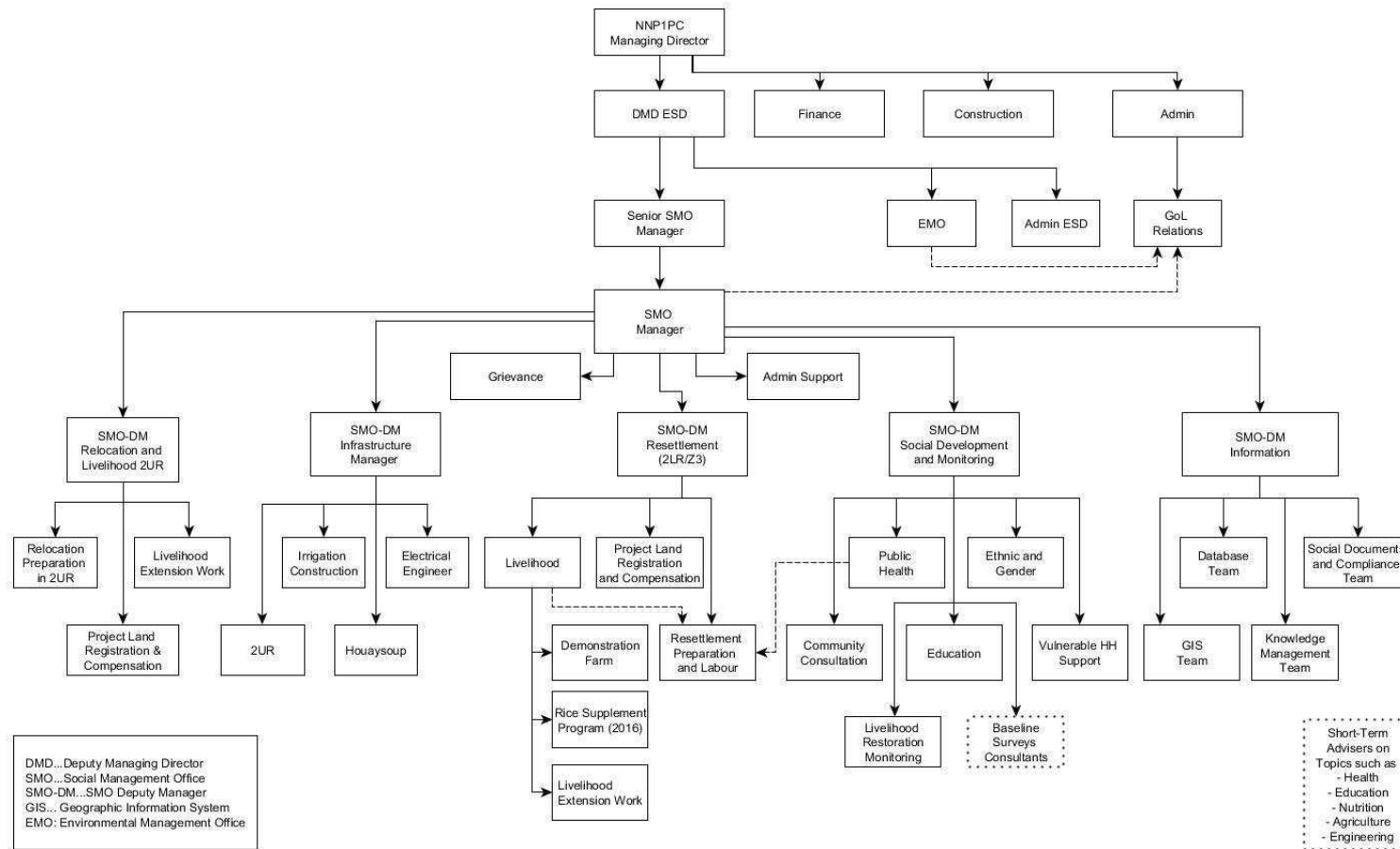


Figure 9: ESD – Organizational Structure with Focus on Social Impacts and Mitigation Measures

**Remark:** All teams will get inputs from and work together with relevant GoL national, district, and village institutions to achieve the set targets.

This chart is still in progress and has not yet officially been approved by the Board of Director and is still susceptible of minor changes.

### **4.3.3 Social Management Office**

116. The social aspects of the Project will be planned, implemented, and monitored by the Social Management Office together with PAPs and GoL authorities. It encompasses a resettlement section for the resettlement of villages in the lower reservoir area; a livelihood restoration section for the upper reservoir area; an infrastructure section; a social development and monitoring section; and an information, analysis, and documentation section.
117. The SMO Office has its main office at the Company's headquarter in Vientiane and several field offices in Bolikhamxay and Xaysomboun Province.

## **4.4 ESD Vientiane Office**

### **4.4.1 Office Location**

118. The Vientiane office of SMO is in the same compound as all other divisions of NNP1PC in Sisattanak District, Vientiane Capital. This allows close cooperation with company management and the other divisions (environment, technical, finance, and admin division). The office is the main base for the social management, the social development and monitoring section and the information, analysis and documentation section.

### **4.4.2 Social Management**

119. The Social Manager and the Deputy Managers of the different sections are currently based in the Vientiane office. From here, the development of the program and the strategic implementation gets coordinated. Frequent field travels ensure communication between the offices and integration of information from the field into management decisions.

### **4.4.3 Social Development and Monitoring Section**

120. The Social Development and Monitoring section is considered a cross-cutting section which works in all project zones. Accordingly, most of the staff of the Social Development and Monitoring section will be moving between the different field offices, depending on the tasks needed to be implemented at that point of time.
121. The Social Development and Monitoring (SD) section will have primary responsibility for all consultations in the project area as well as community and human services aspects of the resettlement and livelihood improvement process. It will initiate and monitor consultations, health programs, education programs and a range of community development initiatives.
122. The section will be headed by an experienced Deputy Manager with proven social mitigation and development project experience, who will report directly to the SMO Manager and work closely with the relevant GoL agencies and staff. The SD section will seek intermittent input from an Ethnicity Specialist and a Gender Specialist, both during detailed planning, and the commencement of implementation, in order to ensure that ethnic and gender aspects are mainstreamed. The SD section will also ensure that the needs of



vulnerable groups are addressed.

123. The main tasks of the four teams in the Social Development and Monitoring section will consist of the following:

#### **4.4.3.1 Community Consultation Team**

124. The community consultation team has the following tasks:
- Participatory planning support for resettled people and villagers in adjacent villages, ensuring that local concerns and beliefs are incorporated.
  - Participatory planning for downstream, the watershed and project construction land areas.
  - Establish consultation feedback loops between affected households and project implementing organizations.
  - Ensure that gender and ethnic issues are incorporated into planning procedures and implementation.
  - Ensure that all affected households are familiar with content and mechanisms of the Grievance Procedure.

#### **4.4.3.2 Health Team**

125. The health team has the following tasks:
- Facilitate preparation of a comprehensive long-term health strategy and annual implementation plan for resettled people and other project affected groups.
  - Oversee construction of new and upgrading of existing health facilities and the transfer to and orientation/training of Ministry of Health (MoH) staff for these facilities.
  - Establish baseline data on the health status of the population in project affected villages; facilitate annual surveys to measure changes in health status against the baseline; report to the project proponent, MoH and any other relevant GoL line ministry on changes in health status.
  - Liaise with MoH at national, provincial and district level to link project supported activities with GoL health initiatives.
  - Provide direct monitoring and support to Provincial Health Office (PHO) and District Health Office (DHO) staffs to conduct regular monitoring and supervision of health facilities and service delivery standards.
  - Liaise with health and safety officers appointed by dam site construction companies on issues related to effects on the population of adjacent villages of risks to health such as water pollution, dusts, and vehicular accidents, and potential risks of STD/HIV/AIDS and other communicable diseases.
  - Liaise with multilateral, bilateral and NGO agencies active in health sector programs, to maximize cooperation and minimize duplication; participate in MoH activities to facilitate sector-wide coordination.

#### **4.4.3.3 Education Team**

126. The education team has the following tasks:

- Facilitate development of a comprehensive education and training strategy and plan, for resettled people and other project affected groups
- Oversee the reestablishment and upgrading of school facilities
- Assist District and Provincial education authorities in recruiting teachers and link up with GoL education initiatives
- Monitor education programs and school attendance
- Implement the Project's scholarship program

#### **4.4.3.4 Ethnic and Gender Team**

127. The ethnic and gender team has the following tasks:

- Ensure ethnic-sensitive planning and implementation by advising and controlling all other project activities
- Implement programs outlined in the Ethnic Development Plan including cultural awareness programs
- Ensure gender-mainstreaming by advising and implementing all other project activities to mainstream measures that will provide opportunities and/or empower women
- Assist the health team regarding different aspects of women's health
- Implement programs outlined in the Gender Action Plan

#### **4.4.3.5 Vulnerable Household Support Team**

128. The vulnerable household support team has the following tasks:

- Ensure vulnerable household-sensitive planning and implementation by advising and controlling all other project activities
- Implement vulnerable household support programs, including the extension of transitional assistance

#### **4.4.3.6 Social Monitoring Team**

129. Good practice in resettlement requires continuously incorporating the learning that takes place in programs using a variety of implementation strategies and institutional models, allowing the Social Development Plan as well as Livelihood Restoration Programs to evolve as needed. Monitoring provides the mechanism by which to do this. Monitoring and evaluation will occur as part of the overall Monitoring and Evaluation Plan. Participatory self-monitoring by affected people will be essential to accurate monitoring. For example monitoring of the effectiveness of the health team in providing access to health services will be undertaken by individual resettled people through their own personal assessment of the community's access to health services with support by the monitoring team.

130. Taken together, the social monitoring team has two main tasks: the first is to coordinate the establishment of baseline surveys in cooperation with the social development teams

regarding a range of indicators, including social, socioeconomic, and health data. Throughout the following years, the section will then use this baseline data in monitoring the development of the impacted communities along the assessed indicators and propose adaptations to the other sections to fulfil livelihood restoration targets. Also, the Social Monitoring Team will work as SMO representative in the Project’s Contractor Compliance Committee, the joint committee encompassing all divisions of the Company (see section on contractors).

131. The monitoring team will thereby include the following specialists full time or part time:
- i. A project monitoring Specialist with a strong background in mathematics or statistics and a relevant social or natural science plus experience in planning, implementing, monitoring and evaluating resettlement plans or projects to international standards on large hydropower projects, and preferably with relevant experience in Lao PDR or elsewhere in the region.
  - ii. Social Development Specialists with strong background in relevant social sciences and demonstrated experience in organizing and managing socioeconomic data collection and analysis, PRA, group facilitation, and with relevant experience in the Project area.
  - iii. Surveyors with demonstrated experience in household surveys, data input and analysis and participatory rapid appraisal techniques, and group facilitation will be used. Surveyors and monitoring team leaders will have an equal gender mix and local language skills.
  - iv. An Ethnic and/or Gender Specialist who will probably be a member of the social development team will assist the monitoring unit to ensure that Ethnic and Gender issues are included in the various monitoring programs.

#### **4.4.4 Information, Analysis, and Documentation Section**

132. The Information, Analysis, and Documentation Section is a cross-cutting section, cooperating with all other sections in collecting data, managing its storage, analyse data and provide resulting information back to the other sections. This data will be used, too, to compile the social planning and reporting documents, thereby analysing compliance with national and international standards and providing advice to the SMO management team for a decisive analysis. The section will furthermore store all information and documentation along data and document security system. While centralized information is stored and managed in Vientiane, the section has staff in the field offices, responsible for data collection and quality control.

##### **4.4.4.1 Database Team**

133. The database team has the following tasks:
- Operation of a database server system
  - Operation of an ICT data management system
  - Development of Databases: Census, Asset Registration Access Road, Asset

registration 2UR, Asset registration 2LR, Asset registration Houaysoup, Socioeconomic Survey Access Road, Broad Socioeconomic Survey, Health Survey, Grievances, Other DB as necessary

#### **4.4.4.2 Knowledge Management Team**

134. The knowledge management team has the following tasks:

- Establishment of a conceptual knowledge management system for SMO
- Implementation as an ICT-based knowledge management system for SMO accordingly
- Processing of field reports and other internal information qualitative information as requested
- Monitoring of the knowledge management system for SMO
- Analysis of data and provision of results to other sections
- Preparation of lessons-learned/best practices reports and tool-kits

#### **4.4.4.3 GIS Team**

135. The GIS team has the following tasks:

- Production of general maps of the project area, activity locations and facilities made available upon request
- Production of detailed Asset registration information available in a GIS system, for impact analysis and compensation procedures
- Production of Land Use and Land Use Planning tools available for the resettlement area and 2UR and analysis of activities above full supply level in 2LR
- Production of economic, poverty, vulnerability, livelihood and agricultural productivity and other social mapping

#### **4.4.4.4 Social Documents and Compliance Team**

136. The social documents and compliance team has the following tasks:

- Documentation of compliance-related activities
- Checks compliance of activities related to social standards (Lao, Lenders, International)
- Cooperation with Monitoring Unit on Compliance Data Collection
- Regular data analysis to check on compliance inconsistencies
- Provision of information to and accompaniment of monitoring missions
- Provision of compliance reports
- Completion and regular updates of Social Reports as required by the CA and International Financing Institutions
- Facilitation of the preparation of Action Plans

## **4.5 ESD Xaysomboun Field Office**

### **4.5.1 Office Location**

137. In Xaysomboun the SMO will have activities implemented in 2UR and 2LR villages and will coordinate where necessary with GoL at the provincial capital. Therefore, several locations will be operational:
- Thaviengxay, a larger village next to the three villages of 2UR
  - Sopyouak, one of the two larger villages in 2LR
  - Eventually temporary offices in Phalavaek and/or in Xaysomboun town to coordinate with district and provincial authorities of Hom district and Xaysomboun Province
138. For the villages of 2LR, in the resettlement preparation phase staff from the Resettlement Section (see below) will be based in the field office in 2LR and move afterwards together with the resettlers to the Houaysoup resettlement site.

### **4.5.2 Resettlement Section 2UR**

139. The Resettlement Section in 2UR has similar land acquisition and compensation tasks as the Resettlement Section for 2LR/Zone 3 inasmuch as it will organize the land acquisition, compensation and resettlement process, and provide all resettlement-related livelihood programs. Further overlapping details are outlined in section 4.6.3 describing the resettlement section of 2LR. While the program in 2UR is smaller than for 2LR/Zone 3 due to minimal impact on housing and lesser impacts of overall land loss, a strong focus on livelihoods activities is necessary and staff will be appointed to work in the 2UR field office. Additional staff from the other offices will backstop the resettlement section, as will staff from the infrastructure, social development and monitoring sections.

## **4.6 ESD Bolikhamxay Field Office**

### **4.6.1 Office Location**

140. Currently, the SMO operates from an office in Pakxan town and from the demonstration farm in the Houaysoup resettlement site. In 2015, the main Bolikhamxay office will move to the owner camp at the dam site. Main SMO sections in Bolikhamxay are the Infrastructure Section and the Resettlement Section. The latter includes the team which worked on the Access Road compensation process.

### **4.6.2 Infrastructure Section**

141. The Infrastructure Section will work with the Resettlement Management Unit to provide technical and financial assistance in all infrastructure development related to compensation and mitigation measures for host and affected people, including infrastructure for the

provision of all livelihood planning and programs and technical advice for the implementation and monitoring of the relocation process for households to the new resettlement area.

142. The Unit will be headed by a Deputy SMO Manager with proven infrastructure development experience, who will report directly to the SMO Manager, and work closely with the RMU and other GoL support staff (see below).
143. The tasks of the team in the Infrastructure Section will be as follows:
  - Coordinate with the RMU on infrastructure issues
  - Ensure access to new sites/adjacent villages through the construction of new bridges and roads; and rehabilitation or upgrading of existing transportation facilities
  - Develop low land paddy fields with well-organized irrigation systems and non-acid soil
  - Ensure that effective water supply is provided to all new sites/adjacent villages, through the installation of wells and piping systems
  - Ensure irrigation is well constructed, water is available when appropriate, and operational at new sites
  - Ensure that housing and other relevant structures are constructed at the resettlement site and for villages with relocation inside village boundaries; and that community and service buildings for resettled people are constructed or rehabilitated
  - Ensure that the resettlement site has reliable electricity supplies and is linked to the Lao grid in accordance with GoL planning

### **4.6.3 Resettlement Section**

144. The Resettlement Section will work with the Resettlement Management Unit to prepare compensation and resettlement to the new resettlement site, to organize the resettlement process itself, and to provide all resettlement-related livelihood programs. Together with the RMU, it will carry primary responsibility for livelihood restoration and improvement for the villages in Bolikhamxay. In addition, it will coordinate with the RMU in all compensation and relocation issues related to Project Construction Lands in Bolikhamxay Province.
145. The section is headed by a Deputy Manager with proven resettlement implementation experience, who reports directly to the SMO Manager, and works closely with the RMU and other GoL staff. The section includes a livelihood team, a project lands and compensation team, a resettlement preparation team, a site preparation team, and a camp followers team.
146. The activities of the resettlement section encompass all activities to implement a successful resettlement of people from 2LR and Z3 to the Houaysoup resettlement site and cooperation with the host communities including but not limited to:
  - Coordinate with the RMU on resettlement issues
  - Ensure establishment of necessary baseline information
  - Prepare all logistical arrangements for resettlement
  - Coordinate resettlement preparation together with the resettlement infrastructure

team, including the development of residential and agricultural areas as well as the preparation of public infrastructure

- Restore and enhance Resettlers livelihoods
- Further tasks of every team of the resettlement section as outlined below

#### **4.6.3.1 Livelihood Team**

147. The Livelihood Team coordinates with the RMU to develop suitable agricultural systems and carries out extension and technical support work to ensure food security and income targets for resettled people and villagers in adjacent villages. Core tasks are:

- Support of agricultural activity development
- Ensure sustainable livestock and aquaculture development for all households (resettled people and adjacent population) by training and coaching
- Support of GoL veterinary services
- Establish project nursery(s) for the development of tree crops and domesticated NTFPs and support their proliferation with extension work
- Facilitate management of the village forest resources through zoning, regulations and raising awareness, and through clarifying rights and responsibilities over different land zone areas
- Investigate markets and marketing-chains for agricultural produce and forge links with middlemen and cash crop companies
- Facilitate the implementation of savings and credit schemes.
- Assist villagers in developing off-farm livelihood alternatives including handicraft and small-scale business opportunities and identify market channels
- Together with the SD section, monitor livelihood development until income targets are reached and sustained

#### **4.6.3.2 Project Lands and Compensation Team**

148. The Project Lands and Compensation Team has the task to:

- Consult with the PAPs on impacts and the process of land acquisition and compensation
- Coordinate with the RMU to register the assets lost due to construction activities in Project Construction Lands as well as the assets lost to acquire resettlement and relocation sites
- Prepare all necessary papers to document the asset registration and the agreements with the PAPs
- Coordinate with the RMU to undertake cash compensation to entitled PAPs via Bank Accounts

#### **4.6.3.3 Resettlement Preparation and Labour Team**

149. The Resettlement Preparation and Labour Team includes the resettlement preparation unit and the labour unit. The Resettlement Preparation Unit has the following tasks::

- Liaise with the SD section in carrying out resettlement preparation activities for the PAPs who have to resettle, including adult education, vulnerable households preparation, resettlement information and consultation
- Liaise with Resettlement Section 2UR to ensure PAPs benefit from early livelihood activities, where required
- Coordinate with the Site Preparation Team for the resettlement process
- Finally integrate with the site preparation team into the livelihood team
- Liaise with Infrastructure Section to ensure all infrastructures are in place for villagers who have to resettle from Project Construction Lands areas
- Implement all activities at the demonstration farm to develop necessary expertise for farming at the resettlement site
- Coordinate with the Resettlement Preparation Team for the resettlement process
- Support DCC and VDC in setting up protocols for camp followers
- Support GoL authorities in monitoring and controlling camp followers activities
- Support the SD Section in supporting respective teams in all issues relating to camp followers
- Coordinate with the host communities to facilitate a successful transition period

150. The Labour Unit has the following tasks:

- Coordinate with other members of the Contractor Compliance Committee (CCC) to ensure the implementation of the Labour Management Plan
- Support PAPs if they would like to work for the Project
- Coordinate with livelihood activities teams regarding employment trainings and opportunities
- Initiate and facilitate necessary awareness programs
- Conduct site inspections together with EMO to ensure
- Monitor employment targets and recruitment, wages and benefits in coordination with the monitoring team
- Provide a contact persons for worker's grievances directed towards the CCC
- Coordinate support for the Lao Federation of Trade Unions
- Coordinate with the Lao Federation of Trade Unions if they request for conflict resolution

#### ***4.7 External Auditor***

151. The external monitoring will be conducted by experts who are highly experienced and are not involved directly in any work of the Project. The experts shall have extensive experience with the social issues in the area and familiar with the local language and socio-economic conditions. Three institutions will form the main agencies of external monitoring: the Independent Advisory Panel (IAP), the Independent Monitoring Agency, and the Lender's Technical Advisors (LTA). Further external monitoring will be done by agencies not directly integrated into the Project's organizational structure, i.e. national and international media and non-governmental organizations, for which the Project will disclose information in an



open and transparent way as outlined in the SIA, following national and international communication standards.

#### **4.7.1.1 Independent Advisory Panel (IAP)**

152. For projects that are deemed by ADB to be highly complex and sensitive, as NNP1, ADB requires the client to engage an independent advisory panel during project preparation and implementation as outlined above. The NNP1 IAP was formed in 2013, and includes four international experts with high reputation and knowledge on their specific field of expertise, which regularly assess the development of the Project regarding environmental and social concerns and advise the Project on possibilities of improvement. On social side, one member of the IAP is an international expert in Involuntary Resettlement with decades of working experience in Laos and with international development institutions; and a second member is a Hmong expert on Indigenous People.
153. The IAP will meet at least three times during the project design, pre-construction and construction phase and twice annually thereafter. Visits to the project area will be arranged at the IAP's request, including field visits. IAP members will be supplied with complete sets of documents before field visits and will be briefed in Vientiane. The IAP would normally visit the greater project area and the Project proponents for a week or two.
154. After each meeting the IAP provides the Sponsors, GoL, and ADB with a signed copy of its findings and recommendations before departure. For social issues, ADB requires that the IAP review issues of Involuntary Resettlement and Indigenous Peoples and social documents to address them; and, if necessary, recommend changes in project design to comply with the SR2 on Involuntary Resettlement and SR3 on Indigenous Peoples. In addition, the IAP will also review issues and concerns related to women and other vulnerable groups and propose measures to address them. This would include, but would not be limited to:
  - i. Resettlement: Assess whether resettlement has been minimized, whether sufficient preparation has been undertaken for restoration of income and living standards of the affected peoples; and review the timetable, budget and institutional capacity to implement resettlement. And also assess the adequacy of the resettlement sites and determine the need for Broad Community Support (BCS).
  - ii. Indigenous Peoples: Review whether Indigenous Peoples have security of tenure over forest and forest products, whether the Resettlement and Ethnic Development Plan (REDP) are culturally appropriate, if cultural heritage requires protection and establish that meaningful consultation has taken place. And also assess the adequacy of the resettlement sites and determine the need for BCS.
  - iii. Other social plans: Review measures to protect and improve the socio-economic conditions of the project affected people and make recommendations as appropriate.

### **4.7.1.2 Independent Monitoring Agency (IMA)**

155. Meanwhile, the Independent Monitoring Agency extends its tasks not just to monitor the project, but above all train and enhance MONRE's monitoring capabilities. Its role is defined in the Concession Agreement, outlining that the IMA has to encompass experts with international experience in resettlement implementation, social surveys, social auditing and monitoring on projects of a similar scope and size as the Project. The independent Monitoring Agency shall also be responsible for training GoL staff in monitoring methodologies. Thus, the IMA is able to facilitate a better monitoring of the Project from government site, which can combine local knowledge, expertise on national regulations, and the enhanced monitoring skills. The independent Monitoring Agency is thereby under the direction and supervision of GoL.
156. The Company and the GoL shall provide the Independent Monitoring Agency with all relevant and all reasonably requested data and documentation in order to facilitate the effective monitoring and evaluation of the environmental issues and / or social issues, as applicable. This includes information on the implementation of socio-economic and asset surveys as well as data on income targets benchmarks. The Independent Monitoring Agency's monitoring reports will be disclosed in accordance with the Concession Agreement, Annex C, Clause 17.

### **4.7.1.3 The Lenders Technical Advisor**

157. Finally, the Lenders Technical Advisor (LTA) will monitor the project regularly for providing information to the lenders in the latter's interests. It reports to the lenders via a lenders' representative, to which the reports are directed. Accordingly, LTA contracts are signed between a representative of the Project, a representative of the lenders, and a representative of the LTA.
158. While the other two external monitoring institutions solely focus on monitoring of the environmental and social aspects of the Project, the LTA will also monitor financial and technical matters. International Experts in their respective fields will regularly visit the Project and inspect plans and implementation along report analysis and project site visits. A specific characteristic of the LTA's terms of reference is that they can issue non-compliance warnings, ranging over several steps from minor compliance problems up to incidences which have to be fixed immediately.

#### ***4.8 Other Partner Organizations***

159. While the Company will establish strong expertise in-house as outlined above, it will rely on external assistance for specific topics – from nutrition advice, to PLUP planning, to establishment of independent market price analyses. Thereby, it will work together with either single national and international expert consultants or with respective, high-reputational institutions. These can encompass civil society organizations, universities, and research centres, depending on the expertise available. This allows the Project to make use of knowledge, but as well to link the activities of the Project to the wider context of development in Lao PDR.
160. Several civil society organizations have already expressed their interest to work together in implementing common aims. It is thereby understood, that there are different interests involved in this process, with different institutional structures, weaknesses and strengths. However, when properly managed in a transparent way, the Project is convinced that it can become successful for all stakeholders involved.
161. A first, major step is the integration of civil society organizations into the Broad Stakeholder Forum, taking place in Vientiane on May 7 2014. Comments and suggestions (for example to elaborate how to integrate PAPs into social monitoring) have been taken by the Project and integrated into the social documents. Following up from this first meeting, institutions and Project can assess the different areas where cooperation is feasible and promising.

#### ***4.9 Coordination with Technical Units of NNP1***

162. Mitigation measures related to labour and environment (Labour Management Plan, see SDP) will be implemented by the technical division, contractors, and/or subcontractors. Day to day supervision of the contractors/subcontractors will be part of construction supervision to be carried out by supervision and safety engineers. Ensuring compliance with environment, health, safety and social standards is the responsibility of the ESD. Thereby, the Project uses a respective joint Contractor Compliance Committee involving staff from all divisions of NNP1PC: SMO, EMO, Civils, HR, and Procurement with SMO taking the lead.
163. This Committee will monitor and evaluate the contractors and subcontractors' compliance with environmental, labour, and social components. This monitoring can include unannounced checks and site-visits to assure compliance. Non-compliance with national laws and international commitments and standards regarding environment, health, safety and social standards will have consequences for the contractors' and subcontractors' overall contract-situation with the Project and not just towards ESD. Thus, cooperation with this Committee will be a mutual interest between all involved parties.
164. The bidding packages for the civil works contracts (including the contracts for the access roads and transmission lines) will include clauses covering resettlement and other social mitigation measures such as

- The contractor and subcontractors shall preferentially hire skilled and unskilled labour from local communities.
- The contractor shall avoid placing fill or spoil on agricultural, cultivated or productive land.
- Consultation must be undertaken with village administration regarding the placement of fill and spoil within village boundaries;
- The contractor shall avoid using agricultural, cultivated or productive land for borrow or cut. Consultation must be undertaken with Village Administration regarding the location of borrow pits or areas of cut within village boundaries;
- The contractor shall assist with the clearance and preparation of replacement land, as identified in consultation with the affected communities and recorded in the updated resettlement plan;
- The contractor shall replace or restore any damages caused to land or structures (including irrigation channels and ditches and other community property resources) to the satisfaction of the PAPs and village administration. If land or structures cannot be restored to their original condition, the contractor must compensate the PAP according to the compensation and replacement rates identified in the resettlement plan and finalized during the process of detailed measurement survey and updating resettlement costs; and
- All resettlement activities will be coordinated with the civil works schedule.
- The contractors and subcontractors have to comply with all social and environmental standards the Project agreed to follow
- The contractors' and subcontractors' employees have to comply with these safeguards and the contractors and subcontractors are reliable to establish a system to contain illegal behaviour.
- The contractors and subcontractors shall comply with the national labour laws and shall take measures to comply with the relevant International core labour standards.
- Disputes between workers and local villagers will be solved via the Grievance Redress Mechanism

## CHAPTER 5 - Public Consultation, Participation, and Disclosure

### 5.1.1 Approach

165. As usual for a project of this nature public consultation and disclosure has started and continue to be implemented through a three-phase process.
166. The first phase had the objective to collect and disseminate information on the human and physical characteristics of the current environment in order to foresee the Project impacts. During this phase, information about the project features and the implications on the social and physical environment was obtained from, and also disseminated to, the stakeholders. This started to some extent when the first feasibility studies were undertaken in 1991, although the objective was not to achieve any consent from the population and the process is not documented. Some consultations focused around the GoL commissioned study of alternatives, economic analysis, and the environmental management plan. This information is important for both the Project as much as for PAPs to adequately evaluate and plan for project implementation. This phase fully commenced with the first studies undertaken by the Environmental Research Institute of Chulalongkorn University in 2007.
167. The second phase is the consultation with the various stakeholders, emanating from the comments sought from them in response to the information gathered in the first phase and the subsequent adjustments made to the proposed mitigation measures and alternatives. It is also the stage when the consent of affected ethnic minority households has been obtained from Zones 2LR and 3, and from host communities in Zone 5. Data and information collected have been disclosed in affected villages in Zones 2UR, 2LR, 3 and 5, to formulate compensation and offsetting measures, including resettlement planning. It is on-going with Asset Registration, Confirmation Surveys as well as a full Socioeconomic Survey, establishing the baseline for compensation and livelihood restoration activities.
168. This leads to a third phase of active and iterative involvement and participation in the project design and implementation, which is expected to increase after Financial Close and to continue during the project implementation. Livelihood restoration models will be further developed in this stage, including the layout of the new village and the design of the most appropriate irrigation system for the replacement agricultural land in the Houaysoup resettlement site.
169. Accessibility of information and participation has been enhanced through establishing information centres in the three Project districts. Consultations were free of intimidation or coercion, with PAPs openly addressing concerns and requesting adaptations by the Project. Using focus group discussions, interviews, written and verbal and translations throughout the project cycle has helped to integrate men, women and vulnerable people into the consultation process. The resulting assessment of stakeholder needs and wants provides a base from which early decisions can be made.





Figure 10: Consultations among PAPs about project suggestions (July 2013)





Figure 11: PAPs' remarks and suggestions during joint consultation meeting of representatives from 5 villages on the designated resettlement site of Houaysoup (July 2013)

### 5.1.2 Consultation Methodology

170. During the public consultation and disclosure, it has been important to take into consideration
- i. the local authority structures, ensuring however that participation in consultation was not dominated by local authorities,
  - i. the need to enter into good faith negotiations with affected ethnic group households,
  - ii. the active participation of women and vulnerable groups and the consideration of their needs and wants in planning of mitigation measures; and
  - iii. proper documentation of the process as well as accurate recording of participation and results of the stakeholder information and consultation process...
  - iv. various communication and disclosure formats to suit the needs of village level situation.
171. In all cases the villagers were notified prior to the public consultation team's arrival. Letters were sent by the staff of the district office to inform village authorities of pending visits and to inform residents within the villages themselves. This notification allowed villagers to adjust their daily activities and find time to attend meetings. All surveys and visits included

presentations and interactive discussions, and the display of graphics, including maps. A 3D model of the resettlement site has been used in discussing potential resettlement plans (Figure 12). Most grass roots staff working on public consultation and participation for the project and GoL has been recruited from areas close to PAPs.

172. At regional level, consultations have been recognized as an important component of the overall communications strategy. Consequently, the establishment of an early working relationship between NNPI Project and provincial officials and line agencies has greatly facilitated information sharing at the local and regional levels. Provincial officials and agency representatives have an integral part on all policy planning matters alongside Ministerial representatives. Consultation and participation at the regional level has sought to provide a forum for the exchange of information and idea between project representatives, the GoL and regional stakeholders. In May 2014, the international and national public consultation forums further allowed NN1PC to expand the consultation process to international and national organizations.



Figure 12: Discussion of Resettlement Site Development by PAPs based on 3D model (July 2013).

## 5.2 Consultation and Participation Activities

173. Activities and techniques for public consultation have been designed to suit the needs of each target audience as well as meet the requirements of the diverse and numerous stakeholders involved in this project. The techniques adopted include the following methods:

- Use of *visual presentations* including pictures, diagrams and posters, especially at



the local and regional level; lately, this included a 3D-model of the proposed resettlement area.

- *Face-to-face and practical communication*; intensified in places where levels of literacy are recognized as being low. This includes the use of seminars, workshops, village meetings, semi-structured interviews, small group meetings, models, participatory rural appraisal techniques, and site visits.
- *Translation* into *Lao* language of project documents and summaries; these were used in particular for local leaders, regional officials and national stakeholders. Verbal translation into *Hmong* language during village consultation meetings
- Use of *local project information* centres in Thathom, Bolikhan, and Hom District. These centres enable the distribution of information about the project, collection of feedback from stakeholders, the ability to deal with inquiries and requests for additional information, and to form a place to conduct periodic meetings with village and district representatives. It furthermore supports the information dissemination policy outlined in the CA.
- Direct discussion with the stakeholders through electronic or written media, group and individual briefings, distribution of detailed project information, and field trips to the project area for *national and international stakeholders*.
- Dissemination of the project documents (EIA, REDP and Social obligations of the Company) through the Company and ADB websites
- Translation of Detailed Entitlement Matrices into Hmong language for Zones 2LR and 3
- Site visits for international stakeholders and independent monitoring agencies
- Focus Group Discussions
- Interviews with PAPs
- Workshops with PAPs
- Transect Walks with individuals from the communities
- Mappings with focus groups
- Household level asset registrations

174. Public consultation activities conducted have been recorded and documented with summaries provided in Lao and English, to be found together with participants lists and other documentation in the REDP, Annex A.

### 5.3 Data Collection

#### 5.3.1 Overview on Initial Studies

175. A series of studies and surveys form the base for this report version.

Year	Study	Type of Data used	Scope of Survey
2000	Nippon Koei Co NNP1 Feasibility Study 1	Qualitative	N/A

2002	Nippon Koei Co NNP1 Feasibility Study 2	Qualitative	N/A
2007/2008	EGAT/NCC	Quantitative Household Survey	100% Z2UR, Z2LR, Z3, Z5 10% sample Z1, Z4
2011	ERIC/SSAFE	Quantitative Household Survey	100% Z2UR, Z2LR, Z3, Z5
2010-2012	ERIC NNP1 Social Documents Draft	Qualitative	NA
2012-2013	NNP1	Mainly qualitative	Quantitative data on specific issues, e.g. vulnerability, ethnicity during field visits

Table 19: Initial Social Project Studies

176. Three studies were conducted specifically for the NNP1 Project prior to the studies for the ESIA. Considerable data were derived from these studies and, after verification, used in this analysis. Two were feasibility studies conducted by Nippon Koei Co., Ltd. in 2000 and 2002, providing qualitative data for this report.<sup>14</sup>
177. EGAT commissioned NCC consultants in Lao PDR to carry out a baseline population and community survey in 2007.<sup>15</sup>
178. The Environmental Research Institute of Chulalongkorn University (ERIC) was subsequently engaged to work with the Lao consultants to produce the ESIA from 2010 to 2012. To do this:
- Experts from ERIC cooperated with local experts who had earlier worked with EGAT to form a study team.
  - The related GoL line ministries and provincial, district and local authorities were informed and consulted.
  - Information on the Project was disseminated through public consultation with affected people and others in the study area
  - Various methods were used to collect relevant data, among them: population survey, assets inventory, in depth discussions with local people, local leaders, district and provincial administrators, and others.
179. Additional consultations and surveys were conducted in 2010 by ERIC and 2011 by the Sustainable Society, Agriculture, Forestry and Environment Consult Company (SSAFE). Continuing update of data has been necessary as a combination of natural population increase, compulsory relocation under GoL policies and self-migration contribute to quickly

<sup>14</sup> The first was Nippon Koei Co., Ltd. (2000). Feasibility study on the Nam Ngiep-I hydroelectric power project in the LAO people's democratic republic: Final Report (Vol.1). (n.p). This was followed by Nippon Koei Co., Ltd. (2002). Feasibility study on the Nam Ngiep-1 hydroelectric power project in the LAO People's Democratic Republic: Final Report (Vol.1). (n.p).

<sup>15</sup> Electricity Generation Authority of Thailand, (2007). Nam Ngiep 1 Hydropower Project "Environmental and Social Data Collection and Analysis": Final Report.

changing village sizes, with some communities growing rapidly while others shrink.

180. The main study team for the production of the Draft ESIA from 2010 to 2012 consisted of:
- Experts from ERIC teamed with local experts from NCC and later on with SSAFE. Local and international groups were made up of researchers from renowned universities and institution in Thailand and in Lao PDR.
  - Coordinators who were responsible for working with members of the team, local authorities, central GoL authorities, local people, and others.
181. The team consisted of women as well as men. During fieldwork the women were responsible to help communicate with female PAPs. Some members of the team were Hmong, which allowed easier communication with ethnic Hmong among the PAPs.

## 5.3.2 Quantitative Baseline Surveys

### 5.3.2.1 Size of Surveys 2007/2011

182. 100 per cent of households of the communities where the Project will lead to severe to moderate impacts due to land acquisition and resettlement (Zones 2UR, 2LR, 3, and 5) were surveyed in 2007/08 and 2011. The survey included a household census, asset inventories of loss (IOL), socioeconomic data, and health data. A sample of at least 10% of the households was surveyed on the same topics (except IOLs) in 2007 in all other areas (Zone 1 and 4) where the households are indirectly affected (see below).
183. For the survey of Zone 1, a sample was taken of 80 households out of a total of 719 households living in these 8 communities in February 2008. The sample was distributed evenly among the communities.
184. For the eight communities of Zones 2UR, 2LR, and Z3, full surveys were conducted in 2007/08 and repeated in 2011, i.e. 328 households in 2UR (July 2011) , 384 households in 2LR (April 2007 + April 2011), and 33 households in Z3 (April 2007 + April 2011); all numbers from the 2011 survey.
185. For Zone 4 incl. Thahuea from Zone 5, a sample of 216 households was taken for the 1,528 households living in the remaining 10 communities from Thahuea<sup>16</sup> to the confluence of the Nam Ngiep with the Mekong in October 2007.
186. For Zone 5, all 68 households in Hat Gniun were surveyed in April 2007 (Thahuea see above). A new, full survey was made in July 2011 of the 67 households then remaining in Hat Gniun and the 50 households of Thahuea of land use and other selected social and economic information.
187. A survey of households and lands along the Access Road was conducted in November 2008 and again in April 2013, after the alignment of the road was determined.

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<sup>16</sup> In the meantime, Thahuea is considered part of Zone 5 and thus has been integrated in the survey 2011, cp. the next paragraph .

### 5.3.2.2 The questionnaires

188. The questionnaires focused on community and household level information. The household surveys provided data on household land uses, livelihoods and occupations, incomes and expenditures, education, health, as well as population characteristics, gender, ethnicity, and attitudes of the people toward the Project. Sample questionnaires of the 2011 survey can be found in Annex H. For PAPs losing land, the questionnaire was further used to develop an inventory of lost assets, which forms the basis for the plans in the Resettlement and Ethnic Development Plan. Further details can be found in the respective Report.

### 5.3.2.3 Special Measures taken to Engage with Vulnerable Groups

189. The study teams took special care while undertaking the survey to obtain accurate information from women, ethnic minorities, and other potentially vulnerable groups in relation to consultations. Separate sessions for women, elderly, and youth were held in each community, to discuss the Project and gain their opinions. Several ethnic Hmong were engaged as part of the study teams for the interviews, other fieldwork, and consultations, to facilitate communication with the Hmong communities in the study area.

### 5.3.2.4 Baseline Survey during Project Implementation

190. An updated baseline survey and asset registration for lost assets will be conducted throughout 2014 in compliance with the Concession Agreement which demands baseline surveys close to its Effective Date. For monitoring purposes, regular updates of the baseline data will be collected.

## 5.3.3 Initial Qualitative Data Collection

### 5.3.3.1 Field Studies

191. Aside from the quantitative socio-economic studies, many of the components covered by the ESIA required supplementary fieldwork in the study area. Generally, the fieldwork was conducted by cooperative teams of the experts from ERIC, NCC and GoL authorities from provincial, district and/or village levels (whichever was considered appropriate for the type of work). The approaches varied according to the disciplines. The main topics covered through field study were:

- Social and economic conditions
- Water quality and water supply
- Forestry
- Wildlife
- Fisheries
- Mapping and surveys of infrastructure and services of the villages
- Land use
- Archaeology
- Potential resettlement sites
- Initial examination of transmission lines

- Initial examination of access roads

### 5.3.3.2 Literature review and secondary data

192. Literature review and collection of secondary data were carried out for several aspects of the study. This information has been used for comparing social information and indicators in the PIZ with national indicators and trends, for example the Millenium Development Goals Progress Report. Such sources are referenced in footnotes whenever used. Furthermore, the Project received provincial level information from GoL, including maps, national and provincial plans and policies, and various statistical records. As with literature, reference to this information is clearly marked within the text.

### 5.3.3.3 Public Consultation

193. Public consultation is among one of the most essential instruments of the study. It was used to disseminate information to affected persons, others in the area, and other stakeholders; to gather the opinions and concerns of affected persons and other stakeholders; and to present, discuss and seek solutions to key concerns.
194. Public consultations were held at a range of levels, from household to village, and also district and provincial levels from 2007 onwards. At the end of the formal process of approval of the environmental and social impact assessments, a public consultation has been announced by the government to be held at the provincial level with local, national, and international stakeholders participating, including villagers, conducted in April 2014.
195. Consultations will continue throughout the implementation of resettlement and of the social development programs.
196. The key priorities for the design of consultation methodologies included:
- Ensuring local knowledge forms a strong base for the resettlement and livelihood plans to enable ownership of development in the communities
  - Ensuring stakeholders were able to fully understand the project information, the potential project impacts, and cooperatively developed mitigation plans
  - Ensuring affected people understand their entitlements, timing and schedule of project activities
  - Ensuring affected people understand the Grievance Mechanism and how to access this in case of grievances
  - Ensuring the Project understands the perspectives of affected people, and adjusts project design and on-going inputs accordingly
197. Information Collection and Dissemination: This initial phase of consultation was aimed at collecting and disseminating information. Data were collected on the human and physical characteristics of the current environment in order to predict project impacts. This information is important to adequately evaluate and plan for project implementation. As part of this phase, stakeholders, in particular the villagers and GoL officials in the Project Impact Zone, were provided detailed information on the project features and the implications in terms of potential changes to the social and physical environment. This was

done to gain their views of the Project and the possible changes required.

198. Active Involvement in Project Design and Implementation: Based on the discussion and subsequent commitments to the community, a set of mitigation measures have been developed that addresses direct project impacts and respond to PAP concerns. In addition, there are broader development measures provided in terms of education, training, financial and institutional strengthening to communities both directly and indirectly affected by project activities.

### **5.3.4 Extended qualitative data collection and analysis**

199. After an internal and external evaluation of the outcome of the 2011/12 SIA, REDP and SDP drafts it became clear that the conducted work had not yet reached ADB standards. Accordingly, a revision of the current documents was undertaken by the project, including additional consultations, to meet international standards.
200. The Company expanded its Environmental and Social Division and hired a series of national and international experts to find and fill identified gaps in the earlier drafts. Based on the information present, they conducted a series of village consultation meetings, starting from late 2012 to date. Requests from ADB were incorporated in these consultation meetings, amongst others the constant use of Hmong language during village consultation meetings with consecutive translation and a focus on meaningful consultation processes by noting and integrating villagers' ideas and requests into the project planning and programming. Furthermore, plans were elaborated in more details to enhance their ability to guide implementation. It is the explicit aim of the Project to present plans which can be implemented as well as monitored. Close cooperation with the stakeholders is thereby essential and thus the Project's methodologies have been expanded to incorporate international lessons-learned.

#### **5.3.4.1 Focus Group Discussions**

201. Focus group discussions are an essential tool to allow people to express their ideas, which might be silent during village consultation meetings, i.e. above all women and youth. This is of specific importance in patriarchal community structures with a strong, customary hierarchy based on male and age seniority. In just few instances, this hierarchy has been broken during Village Consultation meetings with high stress for the people involved (for example a young woman from a poorer household in Namyouak, who expressed early on the wish to resettle to the proposed resettlement site against the sceptical attitude of the village elders at that time). Thus, the Project conducted and documented semi-structured consultations with small groups (generally 5–10 participants plus 1–2 facilitators) to explore people's attitudes, concerns, and preferences regarding diverse topics such as resettlement sites, future community development, plans for their children, and dreams of young people.

#### **5.3.4.2 Direct Observation**

202. Furthermore, by increasing the number of field visits of senior ESD experts, direct observations could be used to gather further information to integrate into the development

of the social documents. This included above all topics regarding local culture and traditions, having a strong influence on people's understandings and aims, but little accessible via standard quantitative surveys. Direct observation has normally been carried over periods of a few days in regular intervals. Examples of direct observations up until now have been participations in Hmong New Year of the communities in 2LR, several Elders meetings in 2LR and Z3, including discussions between the elders and explanations on the resettlement site by elders from Z3, and field trips with regular walks through the villages during different day times. Furthermore, the team could participate in traditional ceremonies, conducted to assess if moving to the resettlement site has the spiritual blessing. This included a joint ceremony with all Hmong communities, and a ceremony by the Lao Loum minority in these communities. The questions analysed by the community elders were twofold: first, is resettling away from the current location is acceptable and, secondly, is moving to the specific Houaysoup resettlement site acceptable. The results of both ceremonies have been positive.

### 5.3.4.3 Interviews

203. Next to village consultation meetings, focus group meetings, structured household interviews, and observations, non- or semi-structured interviews have been conducted with key informants in the villages. Regular meetings with the village chiefs during the field visits allowed inquiring about the specific needs, wishes and concerns of the villagers in an open exchange of opinions. It was also useful to discuss certain ideas on Project sites regarding their feasibility. Including discussions with people at some distance from the affected village, information could be gathered on methods of agricultural activity, changes of activity patterns, new socioeconomic agents in the area, etc.
204. Informal discussions with young people complemented more structured focus group discussions, adding further details to knowledge on the wishes and aspiration of the young generation in the Project Impact Zone. This included different priorities of different generations and possibilities and risks of resettling closer to urban areas. It furthermore allowed acquiring a more detailed picture about the existing skills of the young generation amongst the resettlers, including information about high school and university students. These young people will be cornerstones of the future development of the resettlement site and essential to link the older generation to the new life in the resettlement site.
205. Interviews with key informants of the older generation allowed assessing the history of the communities over the last decades, being essential for the support of local traditions and customs. Of particular importance have been interviews with one key informant, Mr. Thongphet, a recognized hero from the revolutionary war. He offered in interviews a detailed oral history of the communities and these stories have been recorded and will be the base for the development of a museum at the resettlement site.
206. Last but not least it was important that female Hmong Project staff could talk to women of different ages to inquire about the concerns and priorities of women among the resettlers, of which many do not speak Lao. During the interviews they highlighted that their core priority is the future for their children and accordingly their long-term view will be an

essential resource for the development of the community as a whole.

#### **5.3.4.4 Workshops**

207. During consultations with the villagers, formal and informal workshops were initiated by the Project. Workshops bring together a wide range of stakeholders to analyse a particular problem, identify alternative ways to address the problem, and endorse a particular solution or set of actions to be taken. The Project's workshops included the development and analysis of seasonal calendars and the joint development and analysis of a timeline for resettlement. The latter helped to highlight the logistical complexity of resettlement for all involved parties and necessary steps accompanying resettlement, from land development, to transport of facilities, to cultural ceremonies for moving graves. Furthermore, with the aid of a 3D model of the resettlement area, the PAPs chose their preferred residential area in the proposed resettlement site, after which the Project adapted its plans accordingly. Many more workshops will be conducted until resettlement, such as on land use planning as an essential part of Participatory Land Use Planning and development of viable livelihood plans.

#### **5.3.4.5 Transect Walks**

208. As the ADB Social Analysis Handbook describes, walks along a designated path through a local area may be taken by a researcher together with one or more male and female key informants to provide an important orientation to project designers on the local environment, the location of settlements and economic activities, social interactions, and other factors. Information and impressions are gathered through direct observation, questioning of informants, and interviews with people encountered along the way. Senior social Project staff facilitated such walks in and around every village of 2UR, 2LR, Z3, Z5, and the resettlement site. Thereby, important information could be gathered, so for example about types of fencing, methods of cattle raising, compound structures of the residential areas, housing structures, religious activities, bridges, vegetable garden development, logging activities, vulnerable households, independent electricity generation by pico-hydropower installations, and water supply systems. Furthermore, during these walks topics like agricultural development, off-farm activities, and education could be discussed with villagers. The walks included investigation of (potential) agricultural land in the resettlement site and on the right river bank opposite Hatsamkhone and Pou Village in 2UR as well as land throughout the hills behind Ban Piengta.

#### **5.3.4.6 Mapping**

209. This information complemented mapping activities with the PAPs. This exercise involved the creation of a pictorial description of a local area by the local inhabitants in focus groups or village consultation meetings. Common types of maps created through this participatory process include resource maps, health maps, and institutional maps. Maps included village mapping of the severely impacted villages, current land use in Houaysoup resettlement site, and land use in 2UR, including the location of relevant paddy fields, different crop garden land, grazing areas, and plantation areas. The maps provided baseline data for further



participatory analysis and planning.

## 5.4 *The PCD process from initial studies to now*<sup>17</sup>

### 5.4.1 Access Roads

210. Disclosure of information and consultations has taken place during preparation and implementation of the Access Road to ensure that PAPs and other stakeholders have timely information about land acquisition, compensation, and resettlement, as well as opportunities to participate in and express their preferences and concerns regarding the resettlement program starting in early 2013 with an intensive phase of consultations before the start of the compensation process from November 2013 to January 2014. NNP1PC and DCC with assistance from the village authorities has organized meetings and consultations and distributed information to keep PAPs informed about the impacts of the Access Road.
211. Discussions covered land loss due to road construction. First, it was emphasised that maximum effort would be made by the project not to acquire more land for roads than was needed at this stage. However, discussions also overlapped to a certain extent with entitlements for relocation of the whole village of Hatsaykham to Houay Sop. A distinction was made to PAPs as to compensation for roads impacts, as opposed to compensation related to physical relocation to Houay Sop.
212. The rights and entitlements of households affected by land acquisition were clearly explained in Hmong and Lao languages, to both men and women, and in a manner and form accessible to participants. Visual aids were used for those with limited literacy abilities. Important tools of accountability for the construction of the Access Road and in the LAR process are the land use survey, IOL calculations, Declaration Forms, Compensation Receipt Forms and No Longer PAP Forms. Declaration Forms should use the calculated figures from the IOL forms. The numbers of PAPs and amounts in the Declaration Forms are accounted for by Compensation Receipt Forms, "No Longer PAP" Forms, so that it is clear if the compensation procedures are followed properly and if the PAPs are both correctly informed of their rights before compensation and satisfied with the process, methodology of assessing values and receipt of compensation. These forms were given and explained to ESD staff and DCC during the training and workshops.
213. More details on the PCD Process for the Access Road can be found in the LACP-AR.

### 5.4.2 Zone 2UR

214. From the beginning of the project planning phase in 2007/2008, the communities of 2UR

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<sup>17</sup> For a list of all written documents related to these consultations please refer to Annex A, Appendix 2: Index of PAP Consultation Documentation; Annex A furthermore contains detailed information and documentation on these meetings in form of a summary of BCS agreements on village level, pre-CA consultations content, Minutes of Meeting, Lists of Participants, and Pictures.

have been continuously involved on the development of the Project’s social documents and in the manner and style of compensation and mitigation measures due to Project impacts. During the early discussions, these consultations initially assessed the support of the project with limited information, as the Concession Agreement was not yet in place. Accordingly, communication relied on broader policy terms and ideas rather than on concrete plans. This was considered by communities as vague and unclear communication while the finalization process for the CA continued.

215. The project entered a learning-phase regarding community engagement in project planning and decision making. This has been difficult, as livelihood options could not be discussed until technical circumstances of the project were finalized. On the legal side, this encompassed details of entitlements, which were also not yet finalized and therefore could not be disclosed. This created a confused situation as some local officials were already informing PAPs of what they could and could not expect from the Project, without direct knowledge of actual agreements.
216. As soon as the CA was finalized and approved by GOL and the NNP1PC (24 April 2013), the social team was more confident to explain the project methodology, scope and entitlements in detail and in concrete terms. With the subsequent consultations, the project became clearer to the communities and enabling PAPs to decide how to interact with the project. According to initial plans, PAPs in Zone 2UR were supposed to be relocated outside of their respective villages. However, following the development of a risk analysis and extensive consultations after the signing of the CA, PAPs in 2UR decided in September 2014 to relocate affected households within the village boundaries. Village authorities agreed to identify available replacement land for those people significantly impacted. Impacts on agricultural land will be countered by a combination of land development and alternative livelihood activity options. The decision by PAPs and the consequent entitlements as discussed during the meetings have been endorsed by district authorities and the PRLRC, and integrated into the Detailed Entitlement Matrices, which were then discussed again during village consultations in March/April 2014.
217. PAPs are satisfied with the decision to stay, even if this means the necessity for many to adjust their livelihood activities. During meetings with the Project as well as with monitoring missions from ADB and IAP, several suggestions were made by PAPs regarding different on- and off-farm possibilities (land development, small-scale irrigation, weaving, cash crops, fisheries, livestock raising, etc.), and the Project will work together with the PAPs to implement feasible options starting in the second half of 2014 after Financial Closure. New information over the project period will be integrated into updated versions of the REDP.

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Zone 2UR villages:	2007	Household and village survey at	All households	Data collection for ESIA Draft	1	Preliminary Asset

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Villagers, Village Authorities		3 villages				registration and Socio-economic survey
	July 2011	Household and village survey at 3 villages	All households	Data collection for ESIA Draft	1	Initial Asset registration and Socio-economic survey; 2012 SIA/ REDP/ SDP
	October 2, 2011	Consultation Meeting at Ban Pou	PAPs: 181; GoL: 5; NNP1: 7; Consultants: 8	Information on updated ESIA reports and PAP's suggestions; focus-group-discussions have been conducted, too	2	2012 SIA/ REDP/ SDP
	October 3, 2011	Consultation Meeting at Hatsamkhone	PAPs: 100; GoL: 5; NNP1: 7; Consultants: 8			
	October 3, 2011	Consultation Meeting at Ban Piengta	PAPs: 72; GoL: 5; NNP1: 7; Consultants: 8			
	December 08, 2012	Focus Group Discussions at Ban Pou	Groups of 5-10 people	Ideas of development of women, youth, and elders and input and requests towards the projects	2	2014 SIA/ REDP/ SDP
	December 09, 2012	Focus Group Discussions at Ban Hatsamkhone				
	December 11, 2012	Focus Group Discussions at Ban Piengta				
	August 13, 2013	Village Consultation Meeting at Ban Pou	PAPs:109 ; GoL: 2; NNP1: 6	Presentation of project structure; entitlements; GRM; discussions on entitlements; decision to relocate within village boundaries and support project; BCS Agreements and request to the project;	2/3	2014 SIA/ REDP/ SDP
	August 14, 2013	Village Consultation Meeting at Ban Hatsamkhone	PAPs:70 ; GoL: 2; NNP1: 6			
	August 15, 2013	Village Consultation Meeting at Ban Piengta	PAPs: 89; GoL: 2; NNP1: 6			
	March/ April 2014:	Start of continuing work	NNP1PC,	Disclosure and discussions of	2/3	2014 SIA/ REDP/ SDP;

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
	Several meetings including focus group discussions	of the Community Consultations Team in Pou, Hatsamkhone, and Piengta	Villagers	DEM 2UR, options of livelihood planning		Updated RAP, LIRP; DEM 2UR

Table 20: PCD Process with PAPs from 2UR

### 5.4.3 Zone 2LR

218. Communication with communities of 2LR started early, and the Project has spent more resources for the PCD process with 2LR than any other project zone, and in involving them in the planning of the Project's programs. The Project developed Detailed Entitlement Matrices and discussed them with the PAPs during village consultations, the main concern being soil quality of the resettlement site and whether the Project will honour agreed entitlements in practice. PAPs have relatives adversely affected by another Hydropower Project in the area, and their experience has made 2LR PAPs very sceptical of promises from developers. The Project recognises this, and has worked hard to establish relationships of trust and to ensure that PAPs can have confidence that promises made will be promises kept.
219. During focus group discussions, more concrete requests were advanced, for example opportunities for young people, provisional livelihood support in the current villages, housing issues, and discussion of gender-sensitive provisions. More details can be found in the discussion of Broad Community Support for Zone 2LR in Section **Error! Reference source not found.** and new information over the project period will be integrated into updated versions of the REDP.

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Joint Inter-Zone Village Meetings with Representatives of Zone 3 and Zone 5	July 2013	Consultations and resettlement site visit with elders from 2LR and Z3	2 x RMU representatives of every Province, Project staff, 6-10 male and female PAP representatives from each village from 2LR and Z3	Information on project status; presentation of a 3D model of Houaysoup; decision of villagers on where to plan residential area; villagers comments and requests; site visit; traditional ceremonies	2/3	2014 SIA/ REDP/ SDP; Draft Resettlement Site Plans

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Zone 2LR villages: Villagers, Village Authorities	October 31, 2007	Consultation Meeting at Sopyouak	PAPs: 62; GoL: 9; NNP1: 5; Consultants: 5	Data collection for ESIA Draft	1	ESIA Drafts
	September 16, 2011	Consultation Meeting at Namyouak	PAPs: 124; GoL: ; NNP1: 7; Consultants: 9	Information on updated ESIA reports and PAP's suggestions; focus-group-discussions have been conducted, too	1/2	2012 SIA/ REDP/ SDP
	September 17, 2011	Consultation Meeting at Sopyouak	PAPs: 92; GoL: 2; NNP1: 7; Consultants: 9			
	September 18, 2011	Consultation Meeting at Sopphuane	PAPs: 34; GoL: 1; NNP1: 7; Consultants: 9			
	September 19, 2011	Consultation Meeting at Houaypamom	PAPs: 130; GoL: 3; NNP1: 7; Consultants: 8			
	March 4 to 7, 2012	Consultation Meetings at 4 villages	Total participants: 171			
	May 2012	Informal Meetings, with lenders at 4 villages			/	/
	August 31, 2013	Consultation Meeting at Namyouak	118 Participants	Presentation of project structure; entitlements; GRM; discussions on entitlements and RAP; BCS Agreements and request to the project;	2	2014 SIA/ REDP/ SDP; BCS Assessment
	September 1, 2013	Consultation Meeting at Sopphuane	79 Participants			
	September 2, 2013	Consultation Meeting at Houaypamom	51 Participants			
	September 3, 2013	Consultation Meeting at Sopyouak	100 Participants			
	September 3, 2013	Consultation with elders of all 4 villages	Around 40 incl. NNP1, elders plus additional villagers	Discussion of project timeline and next steps	2/3	2014 SIA/ REDP/ SDP
	4-5 December 2013	Participation at Hmong New Year	NNP1PC, Villagers and representatives	Informal discussions on project development	2	2014 SIA/ REDP/ SDP
	March/ April 2014: Several	Start of continuing work of the	NNP1PC, Villagers	Disclosure and discussions of DEM 2LR,	2/3	2014 SIA/ REDP/ SDP;

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
	meetings including focus group discussions	Community Consultations Team in the villages		options of resettlement, resettlement and livelihood planning		Updated RAP, LIRP; DEM 2LR

Table 21: PCD Process with PAPs from 2LR

#### 5.4.4 Zone 3

220. Communication with communities of Zone 3 started early on, involving PAPs in the development of the Project's social documents. In addition to land compensation and resettlement, culture, and livelihood development, the proximity to the dam construction site as well as the building of the Access Road have been topics of consultations. The Project developed Detailed Entitlement Matrices and discussed them with the PAPs during village consultation meetings. The main concern raised is the impact of the construction site and the timing for joining the villages of 2LR in the Houaysoup resettlement site. Broad agreement on the overall plan and entitlements was reached and new information over the project period will be integrated into updated versions of the REDP Agreements on entitlements for land acquisition over the Access Road are included in the LACP-AR and covered in the Social Compliance Audit Report.

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Joint Inter-Zone Village Meetings with Representatives of Zone 3 and Zone 5	July 2013	Consultations and resettlement site visit with elders from 2LR and Z3	2 x RMU representatives of every Province, Project staff, 6-10 male and female PAP representatives from each village from 2LR and Z3	Information on project status; presentation of a 3D model of Houaysoup; decision of villagers on where to plan residential area; villagers comments and requests; site visit; traditional ceremonies	2/3	2014 SIA/ REDP/ SDP; Draft Resettlement Site Plans
Zone 3: Villagers, Village Authorities	2007	Household and village survey	All households	Data collection for ESIA Draft	1	Preliminary Asset registration and Socio-economic survey
	July 2011	Household	All households	Data collection	1	2012 SIA/

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
		and village survey at Hatsaykham	included	for ESIA Draft		REDP/ SDP
	September 25, 2011	Consultation Meeting at Hatsaykham	PAPs: 77; GoL: 1; NNP1: 6; Consultants:	Information on updated ESIA reports and PAP's suggestions; focus-group-discussions have been conducted, too; PAPs of Z3 requested to resettle to Houaysoup	1/2	2012 SIA/ REDP/ SDP
	May 2012	Informal Meetings, with lenders at Hatsaykham			/	/
	November 13-14, 2012	Focus Group Discussions at Hatsaykham	Groups of 5-10 people	Ideas of development of women and elders and input and requests towards the projects	1/2	2014 SIA/ REDP/ SDP
	December 18, 2013	Village Consultation Meeting	NNP1PC, RMU, villagers of Hatsaykham and Hat Gniun	Entitlements, Grievance Redress Mechanism, Access Road Development	2	2014 SIA/ REDP/ SDP; BCS Assessment
	March /April 2014: Several meetings including focus group discussions	Start of continuing work of the Community Consultations Team in the villages	NNP1PC, Villagers	Disclosure and discussions of DEM Z3, options of resettlement, resettlement and livelihood planning, early resettlement, house designs	2/3	2014 SIA/ REDP/ SDP, DEM Z3

Table 22: PCD Process with PAPs from Zone 3

### 5.4.5 Zone 5

221. As host communities, the villages of Zone 5 have been involved in the development of social documents, including resettlement planning. Early on, the Project has been regarded by the host communities as a good development opportunity. The Project discussed its plans for the Houaysoup resettlement site and the necessity to address the usage of natural resources on the right bank site and of the river. Likewise, the possibility to make use of the new

facilities at the resettlement site as school and health centres was discussed. As with Hatsaykham, their proximity to the dam construction site as well as to the Access Road has been a key topic of consultations. The Project developed Detailed Entitlement Matrices and discussed them with the PAPs during village consultation meetings. The main concern raised by host villages during public consultation meetings is the impact of the construction. More details can be found in the discussion of Broad Community Support.

Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Zone 4 and 5: Villagers, Village Authorities	October 29, 2007	Consultation Meeting at Ban Hat Gniun	PAPs: 30; GoL: 11; NNP1: 3; Consultants:	Broad consultation on env. and social mitigation measures	1	ESIA Drafts
	September 26, 2011	Consultation Meeting at Hat Gniun	PAPs: 54; GoL: 3; NNP1: 6; Consultants:8	Information on updated ESIA reports and PAP's suggestions; focus-group-discussions have been conducted, too;	1/2	2012 SIA/ REDP/ SDP
	September 26, 2011	Consultation Meeting at Thahuea	PAPs: 51; GoL: 3; NNP1: 6; Consultants:8		1/2	2012 SIA/ REDP/ SDP
	May 2012	Informal Meetings, with lenders at and Hat Gniun			/	/
	November, 14-15, 2012	Focus Group Discussions at Hat Gniun	Groups of 5-10 people	Ideas of development of women and elders and input and requests towards the projects	1/2	2014 SIA/ REDP/ SDP
	November, 15, 2012	Focus Group Discussions at Thahuea	Groups of 5-10 people	Ideas of development of women and input and requests towards the projects	1/2	2014 SIA/ REDP/ SDP
	December 17, 2013	Village Consultation Meeting	NNP1PC, RMU, villagers of Nonsomboun and Sisavath	Entitlements, Grievance Redress Mechanism, Access Road Development	1/2	2014 SIA/ REDP/ SDP; BCS Assessment



Stakeholder Group	Date	PCD, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
	March/ April 2014: Several meetings including focus group discussions	Start of continuing work of the Community Consultations Team in Pou, Hatsamkhone, and Piengta	NNP1PC, Villagers	Disclosure and discussions of DEM 2UR, options of livelihood planning	2/3	2014 SIA/ REDP/ SDP; Updated RAP, LIRP. DEM Z5

Table 23: PCD Process with PAPs from Zone 5

### 5.4.6 Transmission Line

222. Villagers along the transmission line have been consulted during preparation of an initial draft of the transmission line alignment by social and environmental experts of the Project. Once the final transmission line design is available, an updated assessment of the social impacts of the transmission line will be prepared together with the PAPs and integrated in a separate Land Acquisition and Compensation Plan – Transmission Line (LACP-TL). This document will provide further details on the consultation process over the coming months.

### 5.4.7 Zone 1 and 4

223. All communities with expected land acquisition and resettlement impacts have been described above. It is not anticipated that households from the wider project impact zone will be affected by land acquisition nor required to relocate, and consultations with villages in Zones 1 and 4 have been integrated via provincial and national meetings to address Project development as well as the preparation of planning documents. In case of unforeseen LAR impacts, additional consultations will be facilitated, including appropriate measures of communication for ethnic groups as conducted for the other consultations described in this SIA.

### 5.4.8 Districts and Provinces

224. Of key importance for REDP preparation and implementation is communication with stakeholders at district and provincial level, principally with the different agencies of public authorities who will be responsible for representing GoL with Project activities. This includes discussion on more strategic development of districts and provinces and the integration of the Project as part of these overall developments. The Project has presented and discussed its resettlement plans with these stakeholders, while regular district and provincial meetings are essential for:
- coordinating cooperation between RMU, Districts, and Projects
  - agreeing Detailed Entitlement Matrices

- agreeing Compensation Unit Rates
- agreeing Cut-off-dates

225. During the implementation phase, further emphasis will be put on the integration of knowledge exchange between provincial and district agencies and the Project, for example on agricultural extension work, forest usage and management, health and education activities, and social mitigation measures in the construction site.

Stakeholder Group	Date	Public Consultations and Disclosure, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Provincial and District Level: Bolikhamxay, Vientiane, and Xieng Khouang Provinces (not included is day-to-day cooperation with the RMU and DCC and related meetings) / now Xaysomboun Province with the districts of Pakxan, Bolikhan, Hom, and Thathom District	January 16, 2008	Public Consultation at Bolikhan District	PAPs: 18; GoL: 32; NNP1: 9; Consultants: 10	Presentation and consultation on the development of ESIA documents	1/2	Draft ESIA Reports
	January 18, 2008	Consultation and discussion at Hom District	PAPs: 16; GoL: 28; NNP1: 9; Consultants: 12	Presentation of first concepts of mitigation measures		
	February 21, 2008	Consultation and discussion at Thathom District	PAPs: 13; GoL: 56; NNP1: 8; Consultants: 5	Collection of comments from the stakeholders participating in the meeting		
	April 22, 2008	Consultation and discussion at Bolikhamxay Provinces	PAPs: 23; GoL: 31; NNP1: 9; Consultants: 30	Understanding of the proposed ESIA reports presented by the Consultancy Company hired by the project	1	Draft ESIA Reports
	April 24, 2008	Consultation and discussion at Xieng Khouang Provinces	PAPs: 43; GoL: 79; NNP1: 18; Consultants: 21	Collection of comments and proposals from the related agencies on the ESIA draft as well as suggested mitigation measures	1	Draft ESIA Reports
	April 28, 2008	Consultation and discussion at Vientiane Provinces	PAPs: 22; GoL: 42; NNP1: 17; Consultants: 12	Discussion of Project and GoL answers of 12 questions raised by 2LR villagers	1	Draft ESIA Reports
	April 04, 2012	Consultation and discussion by Vientiane and Bolikhamxay Provinces	PAPs: 44; GoL: 38; NNP1: 29; Consultants: 3	Presentation and consultation on the development	2	2012 SIA/ REDP/ SDP
	June 09, 2008	Consultation and discussion	PAPs: 10; GoL: 9; NNP1: 1;		1/2	Draft ESIA Reports

Stakeholder Group	Date	Public Consultations and Disclosure, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
		at Hom District	Consultants: 8	of ESIA documents		
	June 12, 2008	Consultation and discussion at Pakxan District	PAPs: 14; GoL: 8; NNP1: 1; Consultants: 6	Presentation of first concepts of mitigation measures Collection of comments from the stakeholders participating in the meeting		
	July 2, 2008	Consultation and discussion at Thathom District	PAPs: 18; GoL: 4; NNP1: 1; Consultants: 4			
	November 5, 2008	Consultation and discussion at Hom District	PAPs: 8; GoL: 16; NNP1: 1; Consultants: 7			
	January 10, 2014	PRLRC Meeting	PRLRC, NNP1PC	Discussion of Access Road Entitlements, Cut-off-date, Compensation Rates	2	LACP Access Road
	February 26, 2014	Consultation with the newly established Province of Xaysomboun	GoL incl. Provincial Governor, NNP1PC	Discussion of Project, Entitlements, Standards, and Procedures	2	2014 SIA/ REDP/ SDP
	April 7, 2014	Consultation with the newly established PRLRC	PRLRC, NNP1PC	Resolution on Entitlements, Standards, Procedures, and Cut-Off-Date	2	2014 SIA/ REDP/ SDP; Detailed Entitlement Matrices
District Level: Bolikhan, Pakxan, Hom, and Thathom Districts (not included is day-to-day cooperation with the DCCs and related meetings) and meetings with districts above	January 16, 2008	Public Consultation at Bolikhan District	PAPs: 18; GoL: 32; NNP1: 9; Consultants: 10	Presentation and consultation on the development of ESIA documents	1/2	Draft ESIA Reports
	January 18, 2008	Consultation and discussion at Hom District	PAPs: 16; GoL: 28; NNP1: 9; Consultants: 12	Presentation of first concepts of mitigation measures Collection of comments from the stakeholders participating in the meeting		
	February 21, 2008	Consultation and discussion at Thathom District	PAPs: 13; GoL: 56; NNP1: 8; Consultants:			

Stakeholder Group	Date	Public Consultations and Disclosure, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
			5			
	June 09, 2008	Consultation and discussion at Hom District	PAPs: 10; GoL: 9; NNP1: 1; Consultants: 8			
	June 12, 2008	Consultation and discussion at Pakxan District	PAPs: 14; GoL: 8; NNP1: 1; Consultants: 6			
	July 2, 2008	Consultation and discussion at Thathom District	PAPs: 18; GoL: 4; NNP1: 1; Consultants: 4			
	November 5, 2008	Consultation and discussion at Hom District	PAPs: 8; GoL: 16; NNP1: 1; Consultants: 7			

Table 24: PCD Process on District and Provincial Level

### 5.4.9 National Consultations

226. Discussions at national level have preceded actual establishment of the NNP1 project. This included discussions during the JICA feasibility studies and the decision to lower the dam to avoid impoundment of larger areas in Zone 1. Subsequently, preparation of the Project's safeguards documents and the related plans were disclosed and discussed during meetings since 2011. This included also international stakeholders as NGOs and IOs during a consultation meeting in May 2014. Results and suggestions have been integrated into the social documents.

Stakeholder Group	Date	Public Consultations and Disclosure, key information, timing and approaches taken	Participants	Content	Consultation Phase	Resulting Output
Central Level: Stakeholders including international Finance Institutes, MONRE, other GoL Organizations and Agencies, General Public, and NGOs.	May 2011	Consultation and discussion at Hom District	GoL, NNP1, ADB, IOs, Media	Presentation of the Project and initial results of the social document preparation	1	2012 SIA/ REDP/ SDP
	July 2011	Technical Workshop and site visit to proposed resettlement site by MoNRE			2	2012 SIA/ REDP/ SDP
	April 2012	National Consultation Meeting	GoL, PAPs, NNP1, Media		2	2012 SIA/ REDP/ SDP
	March 2014	ADB Audit Mission Access Road	ADB, PAPs along Access Road including Zones 3 and 5, GoL, NNP1	Discussion of implementation of LACP-AR, BCS	2	Final 2014 LACP-AR
	April 2014	Site visit of the National Assembly	PAPs from Zones 2LR, 3, and 5, GoL, NNP1	Discussion of resettlement plans	2	Final 2014 SIA/ REDP/ SDP
	May 2014	ADB Due Diligence Mission	ADB, PAPs from Zones 2,3, and 5, GoL, NNP1	Discussion of BCS and Social Documents	2	Final 2014 SIA/ REDP/ SDP
	May 7 2014 in Vientiane, May 9 2014 in Pakxan	2 Broad Stakeholder Forums incl. GoL, IOs, iNGOs, NPAs, Press, etc.	GoL, NNP1, ADB, IOs, iNGOs, NPAs, Media	Disclosure of Draft Social Documents and discussion of project, impacts, and social and environmental mitigation measures	2	Final 2014 SIA/ REDP/ SDP

Table 25: PCD Process on the National and International Level

## 5.5 Consultations with Ethnic Groups

227. Consultations with ethnic groups in the PIZ have been taking place since the first feasibility studies in early 2000, with increasing information collection and dissemination since 2007. More active involvement with affected Hmong communities has happened since signing of Concession Agreement and preparation of social planning documents.
228. During public consultations from 2013 onwards, care has been taken by the Project to ensure that (i) all community discussions with Hmong are conducted in the Hmong language (ii) separate women and men's discussions have been organised (iii) environmental information and Zone-specific Detailed Entitlement Matrices have been translated into Hmong language for easier reference to village elders (iv) 3D models of the resettlement site development have been prepared and used in good faith negotiations for PAPs in 2LR and 3 (v) visits have been facilitated by the Project for PAPs from these two impact zones (both men and women) to Houaysoup (vi) Hmong staff have been recruited to work full time on Project activities. Meaningful consultations with Hmong communities have thus been undertaken over several years to solicit their participation in designing, implementing and monitoring measures to compensate and mitigate Project impacts.
229. Hmong communities affected by the Project have provided their endorsement of project activities, and have confirmed they are ready to physically relocate and that the natural resources on which they currently rely will either be lost or have restricted access in future.
230. At the same time, communities in Zone 2LR and 2UR have freely expressed their concerns. The Project has responded to these concerns positively, as reflected in the adjustments made to compensation entitlements, livelihoods development programs, and mitigation measures; including the option of self-relocation with cash compensation for those who do not wish to move to Houaysoup.
231. Consultations with villagers and key informants have also been facilitated to assess potential impacts on ethnic groups outside the impact zones described in this SIA. The assessment on the risk of impacts outside the villages included in Zones 1 to 5 also includes information and assessments of specialists, amongst others the Project's Independent Advisory Panel as well as safeguards consultants with many years of experience in the area. The resulting risk analysis assesses that there is no expected impact on ethnic groups outside the core villages described in the SIA. A detailed description of this analysis can be found in Chapter 16.

### 5.5.1 Resettlement Site Selection

232. One of the most important concerns raised by PAPs in Zone 2UR and 2LR has been selection of the Resettlement site.
233. The main consideration for the Project in the selection of a resettlement site is to have an area able to support all affected households requiring resettlement, and which is acceptable to both affected communities – whether relocating or host – as well as to district authorities and the PRLRC. The Project has encountered difficulties in identifying a site fully acceptable to both GoL as well as to all PAPs.

234. In Zone 2UR, the original intention of GoL was to relocate all affected people to the Nam Pha site to create a new village of mixed ethnicity. This was not well received by PAPs, many of whom were reluctant to leave remaining lands and houses that would be unaffected by the reservoir, and with Lao-Thai ethnic households reluctant to co-reside in the same village with Hmong households.
235. Based on consultations with PAPs, the decision was reached not to relocate to Nam Pha but to relocate within existing villages, enabling PAPs to continue either living in their unaffected houses or cultivate unaffected land. Although moving within existing villages will be more cost effective for the Project as well as preferable to PAPs themselves, it will present livelihood restoration challenges to find suitable replacement land or develop replacement land of the same productive quality. Project staffing structure and strategies therefore will be different in this impact Zone than in others.
236. The following resettlement sites have been considered for 2LR and Z3:
- Samtoey area, Vientiane Province (for 2LR)
  - Phalavaek area, Vientiane Province (for 2LR)
  - Phukatha area, Vientiane Province (for 2LR)
  - Pha-Aen area, Vientiane Province (for 2LR)
  - Nam Choi, Bolikhamxay Province (for 2LR)
  - Hat Gniun, Bolikhamxay Province (for Z3)
  - Houaysoup, Bolikhamxay Province (for Z3 and 2LR together)
237. Originally the 4 communities from 2LR were to be resettled separately from those in Hatsaykham as well as from each other. However, the inhabitants of all 4 villages expressed the preference to stay nearby. This option was not possible in the immediate vicinity of their existing villages of 2LR as land was not available. After inundation, only land above 320MSL would be available which is high upland. These were not considered suitable for resettlement nor for future ability to sustain and improve livelihoods. .
238. Because resettlement of whole communities across provinces is no longer recommended nor supported by the policies of Vientiane Province and Bolikhamxay Provinces, only areas within the same province as the villages to be resettled were initially considered. The list of recommended sites with the potential to hold a large community was established in consultation with affected communities and GoL. Those presenting the greatest potential were the Samtoey area, the Phalavaek area, the Phukatha area, and the Pha-Aen area.
239. Samtoey area at first appeared promising since it was an old settlement of some of the people now in Zone 2UR. However, there were several drawbacks for this choice:
- The area is located in the mountainous region with high altitude and in a deep forest. Because it is remote, it is difficult to reach. Building a long access road to the area and development of a resettlement site there would be difficult.
  - The area is rich in biodiversity and with dense forests. Clearing land for agriculture and for a new village or villages would lead to very high environmental impacts, with destruction of considerable forest area and reduction in biodiversity.

- Relatively suitable flat area is insufficient as productive land is limited.
  - There would be high risk of pioneering slash and burn being re-introduced.
240. The Phalavaek area was promptly discarded after an initial site visit with representatives of the affected communities and GoL. Phalavaek is an area that already has a high population density and there would be little extra productive land available for distribution to the newcomers.
241. The remaining potential promising areas were in the valley of Pha-Aen and Phukatha. These areas are located in the same valley and connected with each other. The relatively flat land appropriate for agriculture stretches for about 30 kilometres, giving potential to expand the resettlement area along the access road between each of the existing communities. The creek, Nam Pung, that runs parallel to the access road, has potential to supply enough water for the new community. However, these areas are being occupied by uncontrolled immigrants, and a part of land is in the National Biodiversity Conservation Area (NBCA) zone. As a result, representatives of the affected communities decided that another area would be needed.
242. Some of the sites the affected 2LR communities had in mind were located in Bolikhamxay Province. After discussion between Vientiane Province and Bolikhamxay Province governments and the developer, it was finally agreed that the 4 communities could be resettled across provinces. One site suggested by PAP representatives was rejected by Bolikhamxay Province as being allocated to another project. After further consultation, the Houay Soup area, located on the opposite bank of Ban Hat Gniun in Bolikhan district, Bolikhamxay Province, was selected as the most appropriate resettlement area. This area was extensively studied and enlarged in size to 6000ha from allocation of 2000ha, to have sufficient land available for livelihood activities.
243. The sub-village of Hatsaykham (administratively a part of Hat Gniun), which will be inundated by the re-regulating reservoir, was originally planned to be resettled near the main village of Hat Gniun. However, after the Houay Soup area was selected as the resettlement site for the 4 communities of 2LR, the people of Hatsaykham requested to join the main resettlement area as well, as they prefer to join their fellow ethnic Hmong from 2LR, some of whom are also relatives.
244. Despite this long history of site selection lasting over several years, some PAPs are still not fully satisfied with the current site. While there is agreement on a number of positive characteristics, including size, access to forest resources, access to markets, and infrastructure which will be provided, diverging opinions exist on the suitability of the soil in the Houaysoup area. While research at the demonstration farm outlines that with limited, non-chemical inputs soil improvements can be reached with the same or better results as currently in 2LR, where people improved their rice fields over several decades and with an additional irrigation system, rice production can perform on a stronger level than in 2LR, some PAPs are not yet convinced by the plan of soil improvement.



245. The Project has responded in three ways:
- i. resettlement of Hatsaykham will become a pilot program and good performance of soil improvement and productivity can enhance the trust of people in the feasibility of the resettlement site. People of Hatsaykham have no objection to the resettlement site, as they are already currently cultivating in the Houaysoup area.
  - ii. Secondly, an early start of livelihood activities programs in 2LR including trials in the area will prepare the PAPs for the resettlement, while simultaneously improving the livelihoods skills of those who may not opt to move to Houaysoup.
  - iii. Thirdly, people demanded the option of self-relocation with cash compensation in lieu of replacement land. Although not acceptable to provincial GoL initially, this option does satisfy criteria in the Concession Agreement, and has now been agreed to by both the Project and the PRLRC. Detailed Entitlement Matrices have therefore been prepared for each impact Zone, taking into account the specifics of each Zone's situation. Self-relocation will not be confined to cash compensation for lost assets, but will include livelihood restoration activities and livelihood planning before physical relocation, transitional allowance as a lump-sum, and livelihood activities after physical relocation, and inclusion in the monitoring program, provided PAPs self-resettle within the project area of influence in Hom, Thathom, and Bolikhan districts.

### **5.5.2 Consultation and Disclosure Process**

246. Communication with Hmong PAPs started early on in the process. First consultations were held during JICA's development of feasibility studies in 2000 and consequently information has been collected from PAPs for the development of the draft social documents. However, communication was not always clear, as short-term consultants were providing opinions and differing ideas, and at the same time the Concession Agreement was not signed yet, thus the strategic framework not yet in place. With the elaboration of the Concession Agreement, Annex C and its final signing in April 2013, project information became clearer. At the same time the Project started hiring long-term consultants and staff, allowing the development of a consistent consultation process. Over the last year, many rounds of consultations and negotiations took place with improved methods, including the constant usage of Hmong language and female Hmong facilitators. A safeguards-trained community consultation and development team consisting of Hmong speaking staff furthermore enhanced the Project's capabilities to consult with the ethnic communities. The Project strengthened its capacity to engage in meaningful consultations, not aiming for fast and official consent, but to establish a consultation process acceptable to both Hmong PAPs as well as to the Project, which will extend over the whole implementation period. During this process, agreements were reached and at the same time diverging opinions revealed, allowing a joint approach to improve the Project's resettlement and ethnic development plan and to start its implementation in a cooperative manner. More details, including a list of consultations conducted can be found in Chapter 5.

## 5.6 Stakeholder Inputs into Project Design

247. The consultation process over the project design period resulted in several design adaptations to comply with the requests and concerns of PAPs. The following table complements the list from Chapter 2 on Project adaptations to minimize impacts.

Project Zones	Hmong Villagers Concern	Project Response	Timeframe of consultations
Z1/2UR	Inundation of most villages in 2UR and some villages of Zone 1	Reduction of the dam height and resulting full supply level to 320MSL	2000-2007
2UR	Villagers of 2UR do not want to lose access to the new main road D1	Resettlement to a new site has been given up in favour of relocation within village boundaries and increased livelihood activities	2013
2UR	Usage of the Drawdown Zone	The Project will support villagers regarding the usage of the drawdown zone, after having clarified legal issues with GoL and technical issues with agricultural engineers	2014
2LR	The reservoir clearance and cutting of economic wood must not exceed the water level (flood level)	The requested issue is clearly stated in the contract between the developer and GoL and biomass clearance is just allowed for inundated areas.	2011-2012
2LR	Propose project developer to extend rice supplement program from five to six years	The Project agreed to a rice supplement program of 5 years; worried about potential dependences created by such programs if lasting too long. At the same time the Project agreed that if an additional year is needed, GoL will address the Project for support. The rice supplement program should be seen as one aspect of the overall livelihood restoration support with a focus on enhancing ownership and independent livelihoods.	2011-2012
2LR	Propose to expand the agriculture land to Houay Khee Guak area, also help and facilitate Mr. Thongphet to meet national committee to explain on villagers concerns.	Land allocation for the Houaysoup resettlement site has been increased trifold to 6000ha. Mr. Thongphet was able to meet with national authorities several times and additional the villagers were able to deliver letters to the National Assembly, containing their requests ; The Project is acquiring the necessary allocation certificates for the resettlement site for the people	2011-2014

		of 2LR and Zone 3	
2LR	Propose Government to reserve the protection rights, the rights for land use and villagers' assets which will remain above full supply level (Livestock raising land, gardening land and others land)	PAPs are allowed to continuingly use these areas in a sustainable way if not creating negative impacts on soil, water, forest, and environment in correspondence with national legislation and the corresponding watershed management plan.	2011-2014
2LR	Soil Conditions in Houaysoup	Soil tests; Demonstration Farm and several site visits by PAPs; soil improvement starting in 2014; Trails starting from 2014	2011-2014
2LR	Propose Government to allow villagers for fishery priority (fishing, selling- and buying fish) in the reservoir of NNP1 and giving rights for management of forest in the area of existing village.	The usage of the reservoir is regulated by public authorities, which did not provide a definitive answer on the request. The Project supports the rights of PAPs on the reservoir, amongst others with a fisheries-co-management program.	2011-2014
2LR	The project developer should compensate paddy land by cash to each individual land owner before the resettlement, when they arrive to the new resettlement village they can also have land provided by the project developer.	GoL requests compensation in line with Decree 192/PM. Following this instruction, the Project suggests a formula which guarantees all PAPs replacement paddy fields equivalent to what they legally own and in the case of lands under customary use, what is allowed to be legalized under law, and for landless PAPs a minimum number of paddy fields in the resettlement site. This can be increased Final numbers will be dependend depending on the number of people opting for resettlement to Houaysoup and those opting for self-relocation to places of their choice. This entitlement is outlined in the Draft Detailed Entitlement Matrix and can be adapted according to the negotiations between Project, GoL, and PAPs.	2011-2014
2LR	Propose project developer to compensate all affected assets before the resettlement as well as supports on transportation of all moveable assets of villagers to the new resettlement village.	The Project will compensate all affected assets as outlined in the Entitlement Matrix either in kind or in cash.  Support for transportation has been integrated into the Detailed Entitlement Matrices	2011-2014

2LR	Propose for agriculture land allocation to villagers at the same time as project construction period in order to allow villagers to clear the land and start planting other cash crops before the resettlement or resettlement earlier than planned.	The Project suggests improving soil before allocation of land in the resettlement site. PAPs will be included in the soil improvement program and a regulated and fair land allocation should take place afterwards. The Project targets resettlement for 2017, one year before impoundment, allowing for a smooth transition.	2011-2014
2LR	Propose for job opportunities for 4 affected villages (especially the job which can be done by villagers) this will allow villager for better income.	The livelihood activities program includes a component for off-farm activities. Furthermore, the Labour Management Plan outlines measures to facilitate hiring local workers.	2011-2014
2LR	The village head man of Ban Nong/Sopyouak also proposed: The project developer and government must take back the rights of land use of Hat Gniun villagers and other villagers who stay in the new resettlement area and leave this land available for the newcomer (who will move to new resettlement site), this is to prevent other villagers living mixed with the new project resettlers.	After initial discussions with different ideas if existing land use should be continually tolerated or compensated and re-allocated, it has been decided that the Project will compensate all existing land users in the resettlement site, so that the full 6000ha can be handed over to the PAPs from Zones 2LR and 3.	2011-2014
2LR	Request for investigating land in Khammouan Province as potential resettlement site	GoL rejected resettlement to an area several hundred kilometres away	2014
2LR	Request for re-investigating land close to Phalavaek, amongst others supported by district officials in Phalavaek	The Project investigated together with GoL the area, and while there is residential land available close to Phalavaek town, there is little agricultural land available; definitively not for all four villages of 2LR. The Project will support further investigations to analyse potentials of the area for self-resettling households.	2014
2LR	Request for several community support activities in the existing villages	Provision of solar power panels to Houaypamom; provision of school equipment for Namyouak and Sopyouak; improvement of water supply system in Sopphuane; livelihood activities program will start mid of 2014	2014
2LR/Z3	Selection of appropriate resettlement sites	Several sites have been assessed together with the PAPs from 2LR and Zone 3	2007-2012
2LR/Z3	Self-resettlement and cash compensation	The Project agreed to three options for resettlers with PAPs and GoL: resettlement to Houaysoup, self-	2014

		resettlement within the Project area of influence with follow-up activities by the project, and self-resettlement outside the Project area of influence with no follow-up by the Project; agreed criteria apply to each option to ensure economic viability of resettlement	
2LR/Z3	Younger people would like to split from their relatives and move to the resettlement site	The Project agrees to household splits as long as this does not cause the establishment of vulnerable households; several options are possible: <ul style="list-style-type: none"> <li>i. both new households move to the resettlement site,</li> <li>ii. both new households self-resettle,</li> <li>iii. one new household resettles to the resettlement site, the other household self-resettles</li> </ul>	2013-2014
2LR/Z3	Beside the other village facilities which the project developer will construct, we also propose the project developer to construct village hall, this can be used as meeting hall, social activities shows (dancing show), culture and for other cultural events.	The Project agreed to this request and will construct a village hall in the resettlement site.	2011-2012
2LR/Z3	Residential Area in the resettlement site	Change of resettlement layout to comply with villagers' choice of area	2013
2LR/Z3	Illiterate Hmong women fear not to understand the processes in the new resettlement site closer to urban areas	Resettlement preparation activities including trainings and literacy classes. Adoption of visual communication methods suitable for non-literate and appointment of female Hmong facilitators	2013-2014
2LR/Z3	Sustainability of Resettlement	Land development prior to resettlement; trials and pre-resettlement trainings; provision of a wide range of livelihood activity options in the resettlement site	2013/2014
2LR/Z3	Opportunities at the Resettlement Site especially for children and young adults	Establishment of school facilities up to high school; vocational training programs; scholarship program; on- and off-farm livelihood programs access to urban areas access to information technology and infrastructure	2013/2014

Z3	Influx of workers and impacts on communities	Implementation of mitigation measures outlined in the SDP including social management and mitigation program	2010-2013
Z3	Hatsaykham would like to join the Hmong communities from 2LR	Original plan of relocating villagers from Hatsaykham closer to the main village Hat Gniun has been revised to allow Hatsaykham PAPs to resettle to Houaysoup	2011-2012
2LR/Z3	The new resettlement area should be (a) an independent village, (b) the Government of Lao should transfer the new village land to belong to Hom District and (c) keep the title of a “Competition Combatant Village”	Ad (a), the Project will support the necessary administrative steps; Ad (b) a change of provincial boundaries (now with Xaysomboun) can be requested with support by the Project, but it is ultimately a GoL decision and unlikely Ad (c) the Project will support this and there is a general agreement among the RMU to also support this request	2011-2012
Z3	Concerns on Water Supply	Investigations on additional water sources in the area together with PAPs; constant monitoring of water quality in the area as outlined in the EIA	2014
Access Road	Compensation Rates not high enough and request of field visit to other hydropower project	Visit to other large hydropower project facilitated. Compensation rates above local market rates	2014
Access Road	Dust in villages along the Access Road	Regular watering of the road Construction of tarmac-sealed road within villages	2013-2014
Project-wide	Inclusion of PAPs into monitoring processes	For the fish-catch-monitoring process, this has been planned already; for other monitoring processes, the newly hired deputy manager for social monitoring will integrate the idea during the implementation of Project monitoring	2014
Project-wide	Access to fisheries in impacted areas	A fisheries-co-management program will be implemented	2014

Table 26: Consultations, PAPs’ Concerns, and Project Responses

248. Further details on measures to mitigate and address concerns by Project stakeholders, an assessment of Broad Community Support by ethnic groups adversely impacted by the Project, and a plan for the future PCD process can be found in the REDP, Chapters 7 (Ethnic Development Plan) and Chapter 8 (PCD).
249. The consultation process over the project design period resulted in several design adaptations to comply with the requests and concerns of PAPs. The following table complements the list from Chapter 2 on Project adaptations and overlaps with the analysis

in the previous section.

250. The resulting Detailed Entitlement Matrices, output of Project standards, best practices, and recommendations based on stakeholder consultations, were endorsed on 7 April 2014 by the PRLRC and subsequently discussed with PAPs. These DEMs form the base for current activities and common planning between the Project and PAPs of the implementation of the entitlements. This also is a key element of obtaining and maintaining Broad Community Support to the Project. Details on the entitlements outlined in the DEMs can be found in the REDP.

## 5.7 *Grievance Redress Mechanism*

251. Most complaints and grievances in resettlement arise mainly due to (i) a lack of transparency, (ii) weak information dissemination, and (iii) implementation procedures without adequate consultations, disclosures, and participation of the affected persons. But, irrespective of how well conceived, planned and executed the resettlement and livelihood restoration program may be, individual, household, or village complaints are likely to be encountered.
252. Due to different perceptions, values, objectives and responsibilities among different stakeholders, a range of conflicts may occur among and between affected people, government authorities and NNP1. This is even more the case where different development projects have adverse environmental and social impacts at the same locations on the same people. In addition, when impacts are felt as a consequence of illegal and/or unsustainable land and water uses in the area of the Project, the situation is even more complex as it is then difficult either to assign one responsible party, or to compensate at full replacement cost to the satisfaction of the land and water users.
253. Moreover, conflicts can arise from differences in official and market rates for all types of affected assets, especially in cases where barely any market rates do exist, or where market rates rapidly change resulting from increase of access to natural resources and/or increased access to markets. In addition, to avoid forced resettlement, mechanisms and procedures have to be established to deal with the opportunistic households.
254. An important step in conflict resolution is conflict avoidance. The consultative and participatory nature of decision making by the various stakeholders is aimed at minimizing the occurrence of disagreements and conflicting positions. In instances where disagreements do occur, it is important that they are resolved quickly and properly before positions harden and the conflict escalates. The earlier a discord is recognized and dealt with, the higher the chances are of a successful outcome.
255. GoL's Technical Guidelines on Compensation and Resettlement of People Affected by Development Projects of March 2010 require the following procedures and mechanism to redress grievances.
256. The phases of conflict development and appropriate interventions can be summarized as follows and are outlined in the flow chart in Figure 13:

- Conflict avoidance - Consultations, disclosures, participation in planning and decision making;
  - Simple disagreements - Informal negotiation, discussion and mediation;
  - Early conflict development - Reference to Village Grievance Committee;
  - Conflicting positions taken - Reference to Grievance Committee at District level; and
  - Conflicting positions hardened - Reference to Provincial Authorities; and
  - Intractable conflict - Refer conflict to Court of Law.
257. To ensure that the basic rights and interests of project affected people are protected, that their concerns are adequately addressed and that entitlements are delivered, a grievance procedure is outlined below. If an affected person or group is not satisfied with the resettlement or compensation package, or if, for any reason, the compensation does not materialize according to the Detailed Entitlement Matrix, he or she has the right to make a claim.
258. The Environmental and Social Division of NNP1, through its Community Consultation and Development Unit should make every effort to find an amicable settlement to complaints or grievances brought by Project Affected Persons. To pre-empt disagreements being referred to the Grievances Redress Committees at Village, District, and Provincial Levels, and ultimately to the Court of Law, the Project shall address complaints by Project Affected Persons through consultations conducted in a transparent manner to reach consensus at the project level.
259. The PRLRC in consultation with appropriate authorities will establish the Grievance Redress Committees (GRC) at the village, district and provincial levels, to address any complaints and grievances pertaining to land acquisition, compensation and resettlement that are brought forward by PAPs. The GRC on village level guarantees that access to the grievance redress mechanism is easy and transparent for PAPs.
260. The GRC will comprise<sup>18</sup> the following members, among others:
- Representatives of Provincial authorities and agencies (only for the Provincial Grievance Redress Committees);
  - Representatives of District authorities and agencies (only for the District Grievance Redress Committees and Provincial Grievance Redress Committees);
  - Village headmen;
  - Representative of PAPs;
  - Representatives from mass organizations, such as the Lao Women Union, and elder councils;
  - Local non-profit organizations and
  - Representative from the Project.
261. The CA adds time frames for decisions on every committee level. The meeting of the Village Grievance Committee will be held in a public place, no more than 15 days from the date of formal receipt of the grievance. The meeting of the District Grievance Committee will be held in a public place, no more than 20 days from the date of formal receipt of the grievance

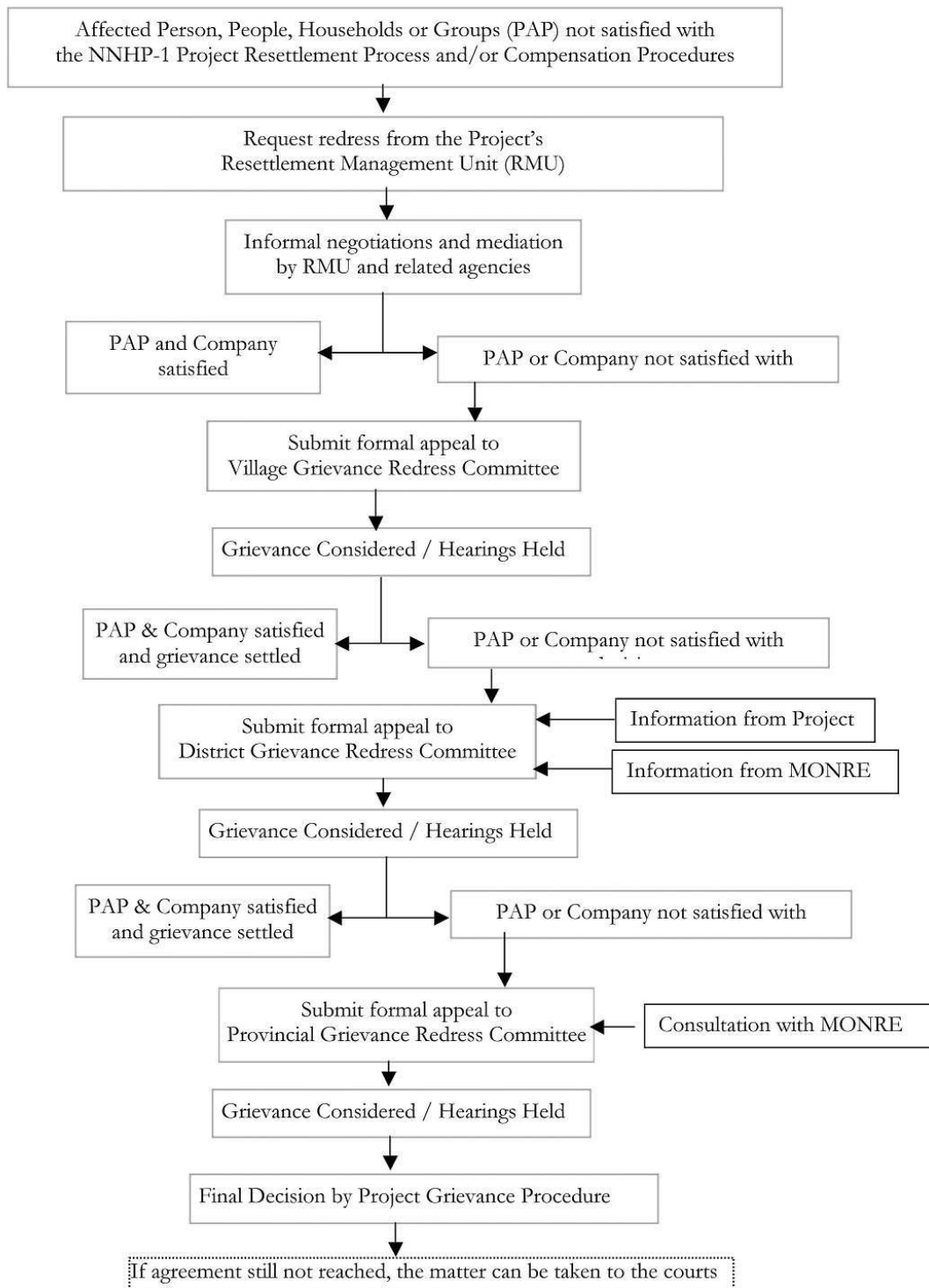
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<sup>18</sup> CA, Annex C, Appendix 8



(following the meeting of the VGC). The last step on provincial level within the GRM can last another 20 days after formal receipt of the grievance.

262. The purpose of the grievance procedure is to ensure that PAPs have the means to assure that they have been adequately and satisfyingly protected from adverse impacts of the project, or if impacts cannot be avoided that they are satisfied they have obtained adequate compensation and that their entitlements are delivered sufficiently and on schedule. If an affected person or group or community feels they have not been adequately protected or compensated, have not received the entitlements due to them, or otherwise believe they have been unfairly affected by the project, that person or group or community has the right to make a claim. The Grievance Procedure will cover both social and environmental issues.



Schematic of the Grievance Procedure for the NNHP 1 Project

Figure 13: Schematic of the Grievance Procedure for the NNP1 Project (Source: CA, Annex C, Appendix 8)

## Part III – Description of Project Impact Zones and Types of Impact per Zone

## CHAPTER 6 - Social Analysis Upstream Area

263. This chapter is the first of eight zone-specific social analyses. It describes the particular socio-cultural and socio-economic conditions in the project area and expected social impacts. Zone 1 – Upstream Area encompasses communities along or near the Nam Ngiep River upstream from the reservoir, where impacts are expected to be indirect and mainly related to efforts to maintain conditions in the watershed.

### 6.1 Overview

264. Zone 1, covers upstream of the Nam Ngiep River above the 320m MSL reservoir (Figure 14). All 8 villages in this zone are under governance of Thavieng Sub-district, Thathom District of Xaysomboune Province. They are:

- 1) Ban Thaviengxay
- 2) Ban Nahong
- 3) Ban Phonhom
- 4) Ban Phonngeng
- 5) Ban Nasong
- 6) Ban Nasay
- 7) Ban Viengthong
- 8) Ban Xiengkhone



Figure 14: Map of villages of Zone 1 – Upstream Area

265. Nearly all the villages in this zone are located along national road 1D, which flanks the Nam

Ngiep. The one exception is Ban Phonhom, which is located along a tributary of the Nam Ngiep River, in a valley about 6 kilometres from the right bank of Nam Ngiep.

## 6.2 Socioeconomic Profile

### 6.2.1 Demography and Population Changes

266. 6,274 people in 1,005 households were reported for these 8 communities in 2011; ranging from 270 people in 51 households in Nasay to 1,646 people in 267 households in Thaviengxay. The male: female ratio for these communities is 1.017:1, with a slightly greater number of males typical for a population with a high birth-rate and a large number of young people.

Village Name	Households	Population		Directly Affected Households	Ethnicity
		Total	Female		
1. Thaviengxay	267	1,646	981	-	Lao Loum, Hmong
2. Phonngeng	95	771	371	-	Lao Loum, Hmong, Khmu
3. Nasong	111	681	240	-	Lao Loum, Khmu
4. Viengthong	107	617	252	-	Lao Loum
5. Nasay	51	270	170	-	Lao Loum, Khmu
6. Xiengkhong	102	546	266	-	Lao Loum, Khmu
7. Nahong	92	543	273	-	Lao Loum, Khmu
8. Phonhom	180	1,200	557	-	Lao Loum, Khmu
<b>Total</b>	<b>1,005</b>	<b>6,274</b>	<b>3,110</b>	<b>-</b>	

Table 27: Population Profile of Communities in Zone 1 (Source: Field Survey 2011)

267. Local residents explained that the village of Thavieng was settled more than a hundred years ago. Over time, the community became larger and broke up into 3 separate communities. These are Ban Dong, Ban Phonngeng and Ban Nahong. The name of the original community, Ban Thavieng, was at first kept only as the sub-district name. Ban Dong has recently been renamed Ban Thaviengxay.
268. Three of the other communities – Ban Viengthong, Ban Xiengkhong and Ban Phonhom – were established about 50 years ago. The remaining two communities – Ban Nasong and Ban Nasay – were settled about 30 years ago.

### 6.2.2 Ethnicity

269. Most of the population in this zone is ethnic Lao Loum or Khmu. There are some Hmong living in Ban Phonngeng and Ban Dong. The Thavieng Sub-district offices of the GoL are located at Ban Phonngeng.

### 6.2.3 Infrastructure Facilities and Services

270. All of the upstream communities have relatively good infrastructure including electricity, drinking water supply, easy access to sufficient quantity of good quality water from rivers

and streams for other domestic use, as well as good transport and communication facilities.

271. All of the villages have basic social infrastructure including small groceries, rice mills, primary schools, and cemeteries. Two of the communities, Ban Phonngeng and Ban Thaviengxay, also have markets, pre-school facilities (nursery and kindergarten), restaurants, guesthouses and petrol stations. Table 28 presents a summary of the infrastructure in the communities in this zone.

Item	Villages							
	<i>Thaviengxay</i>	<i>Phonngeng</i>	<i>Nasong</i>	<i>Viengthong</i>	<i>Nasay</i>	<i>Xiengkhang</i>	<i>Nahong</i>	<i>Phonhom</i>
<i>1. Infrastructure service</i>								
Electricity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Drinking water source	Natural gravitational piped water and ground water							
Sources for other water use	Nam Ngiep River						Small rivers	
Transport/Communication	Good/ by road							
-type of road	Paved road D1							
<i>2. Social Welfare</i>								
· Market	Yes	Yes	No	No	No	No	No	No
· Rice Mill	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
· Pre-school/Nursery	Yes	Yes	No	No	No	No	No	No
· Primary School	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
· Restaurant	Yes	Yes	No	No	No	No	No	No
· Cemetery	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
· Grocery	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
· Petrol station	Yes	Yes	No	No	No	No	No	No
· Water supply	No	No	No	No	No	No	No	No
· Ground water	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>3. Private and Public Organization</i>	No	No	No	No	No	No	No	No

Table 28: Infrastructure of Village in Upstream Area (Source: Field Survey 2008)

## 6.2.4 Education

272. As already noted, primary schools are available in all the communities. The area also has lower secondary and upper secondary facilities in Phonngeng. The schools are relatively well attended, especially by the ethnic Lao residents. While there are still a large proportion of illiterate residents in the area, most of these are older villagers who did not have the opportunity to attend school.
273. With only minimal impact from the Project expected on communities in this zone, no

adverse impact is expected on the educational infrastructure of this area.

### 6.2.5 Health

274. Health care facilities in these communities are also relatively good. There is a health centre in Phonngeng, which serves most of the nearby communities. Given the minimal impact of the Project on this zone, no adverse impact is expected on the provision of health services.

### 6.2.6 Agriculture and Land Use

275. The land use pattern reflects the geography of the area: mostly high terrain covered with forests. Table 29 presents the land uses reported in the 8 villages of Zone 1. About 2 per cent of the total area is devoted to paddy fields. Another 5.5 per cent is used for other types of agriculture. Only 0.2 per cent of the area is used for residential land. Slightly less than 2 per cent of the total area is devoted to various public uses, such as school or temple lands, village offices, and cemeteries. About 60 per cent of this public land is village grassland or grazing lands.
276. The vast majority of land is classified as forest (nearly 90 per cent of the total), but this belies a considerable range in distribution among villages. One village, Phonhom, the community located several kilometres from the Nam Ngiep River, accounts for about 30 per cent of the total forest land, compared to Nahong village which has only 5 per cent of the total forest land in Zone 1.
277. The forest classification also indicates considerable variation in uses and in forest cover. Only about 20 per cent of the total area (a bit less than a quarter of the forest land) is protection forest. More than a third of this protection forest is in Phonhom. Another 20 per cent is in Dong village. In contrast, two of the villages, Nasay and Nahong, account for only 3 per cent of the protection forest each.
278. A significant portion of the official forest land is nearly barren of large trees: about 28 per cent of the total area (or about 30 per cent of the forest land) is classified as unstocked forest. Again, a large portion (nearly 30 per cent) of this category of forest land is in Phonhom village. Viengthong and Nasong account for 17 per cent and 13 per cent respectively of the unstocked forest. Unstocked forest is often officially designated forest land that has been cleared for agriculture, whether shifting cultivation or, as is generally the case more recently, permanent upland fields.
279. Nearly 40 per cent of the total area (or 45 per cent of forest land) is classified as under community management. About 23 per cent of the total land area (or over a quarter of the forest land) is classified as community managed production forest. The remaining 17 per cent of total land (or 19 per cent of forest land) is classified as community managed reserve forest. It should be noted that the vast majority of the community managed production forest is in two villages: about a third of the total is again in Phonhom village, and another 30 per cent in Xiengkong village. The community managed reserved forest is more evenly distributed, with 20 per cent of the total in Phonhom and the rest distributed among the

other 7 villages.

Land Use Classification	Land Use and Forest Area (ha)								Total
	Thaviengxay	Phomngeng	Nasong	Viengthong	Nasay	Xiengkhong	Nahong	Phonhom	
<b>1 Private Land</b>									
1.1 Resident area	4.0	3.5	3.6	4.0	5.0	4.0	6.3	4.5	34.9
1.2 Paddy field	26.2	17.9	45.8	27.8	34.3	71.2	74.9	54.9	353.0
1.3 Upland rice field	27.4	23.9	63.7	31.6	54.9	85.7	94.3	59.2	440.7
1.4 Other cultivated land	41.43	59.1	102.57	47.1	50.1	63.0	77.81	54.0	495.1
1.5 Fish Pond	5.3	7.2	4.7	3.8	3.12	2.1	2.1	5.9	34.2
1.6 Other land use	7.34	5.43	6.25	5.98	4.23	8.26	4.92	12.91	55.3
<b>Total</b>	<b>111.7</b>	<b>117.0</b>	<b>226.6</b>	<b>120.3</b>	<b>151.7</b>	<b>234.3</b>	<b>260.3</b>	<b>191.4</b>	<b>1,413.3</b>
<b>2. Public Land</b>									
2.1 School land	1.0	0.5	0.25	2	0	0.5	1.5	1.0	6.8
2.2 Temple land	0	0.13	0	0	0	0	0.05	0	0.2
2.3 Village Office Land	0.2	0	0	0	0	0.32	0	0	0.5
2.4 Village health centre	0.3	0.06	0	0.5	0	0	0	0	0.9
2.5 Cemetery land	2.0	3.6	1	2	1.5	2.5	2.0	2.0	16.6
2.6 Grass Land	13.20	51.7	24.9	9.2	18.0	12.45	21.93	38.45	189.8
2.7 Pond/water body	0	0	0	0	0	0	0	0	0
2.8 Other land use	13.97	17.54	9.54	5.52	9.76	8.65	13.4	21.76	100.1
<b>Total</b>	<b>30.67</b>	<b>73.53</b>	<b>35.69</b>	<b>19.22</b>	<b>29.26</b>	<b>24.42</b>	<b>38.88</b>	<b>63.21</b>	<b>314.9</b>
<b>3. Forest Land</b>									
3.1 Community-managed production forest	157	93	388	452	275	1,150		1,282	3,797.0
3.2 Community-managed reserved forest	370	323	219	380	412	306	225	560	2,795.0
<b>3.3 Other forest</b>									
Protection forest	720	315	427	262	90	225	102	1,187	3,328.0
Un-stock forest	413	110	630	803	420	510	311	1,402	4,599.0
- Buffer zone	14.74	57.54	31.82	12.9	23.34	19.2	37.65	51.05	248.2
<b>Total</b>	<b>1,674.74</b>	<b>898.54</b>	<b>1,695.82</b>	<b>1,909.9</b>	<b>1,220.34</b>	<b>2,210.2</b>	<b>675.65</b>	<b>4,482.05</b>	<b>14,767.2</b>
<b>Total land</b>									<b>16,495.4</b>

Table 29: Land use pattern of the 8 villages in the Upstream Area (Source: Field Survey 2008)



## 6.2.7 Further Sources of Income and Household Expenditure

280. Table 30 presents the reported average annual cash incomes of the villagers in Zone 1 from the 2008 survey. With many households still practicing near-subsistence agriculture, the bulk of agricultural production, livestock rearing, and fishing is for household consumption. Some surplus of these is sold for cash, to help meet household expenditures.
281. The annual household cash incomes in the villages of Zone 1 are derived mainly from the sale of crops and livestock. Fisheries and off farm work are only minor sources of income. The household incomes of this zone are higher than any other part of the project area, even more than the downstream communities, in part because they have better roads and so better access to markets than most of the villages in the other zones.

Village	Items								
	On Farm average household income						Off Farm		Total
	Crop		Livestock		Fishery		Income	%	
Income	%	Income	%	Income	%	Income	%	Income	
Dong	8,230,000	65	3,900,000	31	300,000	2	160,000	1	12,590,000
Phonngeng	7,023,000	57	5,000,000	41	110,000	1	160,000	1	12,293,000
Nasong	5,700,000	62	3,000,000	33	321,000	3	160,000	2	9,181,000
Viengthong	3,789,000	58	1,800,000	28	743,000	11	160,000	2	6,492,000
Nasay	988,000	42	1,020,000	43	210,000	9	160,000	7	2,378,000
Xiengkong	4,980,600	74	980,000	15	620,500	9	160,000	2	6,741,100
Nahong	4,900,000	56	3,450,000	39	278,000	3	160,000	2	8,788,000
Phonhom	2,900,000	45	3,400,000	53	-	0	160,000	2	6,460,000

Table 30: Yearly Household Cash Income in Zone1 - Upstream Area (Source: Field Survey 2008)

282. Villagers said that their expenses are mostly on inputs for their agricultural production, food, clothes, transportation, electricity, cigarettes and tobacco, education and educational supplies, and healthcare and medicines.

## 6.3 Land Acquisition Impacts

283. Because this area lies rather far, about 10-16 km upstream, from the reservoir, there will be no inundation impact at 320 m on these communities. No lands will be lost and no resources will be directly affected. No compensation is required. The environmental impact assessment found there should be no direct environmental impact on the communities.

## 6.4 Impacts on Livelihood Activities

284. Because the communities share the Nam Ngiep watershed, lying just upstream from the reservoir, they will be expected to assist in, and benefit from, the protection of the watershed and related resources as part of a watershed management program (WMP), implemented via the EMO in cooperation with GoL. This should lead to greater protection of the forest resources and to sustained management and use of NTFPs. If the watershed management program does turn out to have an adverse impact on the livelihoods of the people in these communities, the Project will need to work with the affected people to find sufficient

alternatives and compensation.

285. The communities of Zone 1, especially those further upstream, are likely to be more affected by the Nam Ngiep 2 Hydropower Project, since they are downstream from that dam. Any social development activities and watershed management programs should be coordinated with the Nam Ngiep 2 project. Impacts will be clearly monitored, if possible jointly by the two projects. Any adverse impacts would need to be ascribed to the appropriate project, so that for example changes in water quality during the first years of water release from the reservoir of the Nam Ngiep 2 project are not attributed to the Nam Ngiep 1 project.

#### **6.4.1 Crop Cultivation and Livestock raising**

286. There will be no major change in crop cultivation or livestock raising in Zone 1 due to NNP1; however, the WMP will work together with PAPs in improving livelihood activities, reducing potentially damaging impacts of crop cultivation on the environment in the Watershed, including the river itself; for example by replacing chemical by organic inputs.
287. The livelihood program in 2UR can thereby develop a role model function (see below).

#### **6.4.2 Forest Utilization**

288. Similarly, the WMP will support a sustainable use of forests in the Watershed. This will have a positive impact on long-term use of NTFPs. Meanwhile, the enforcement of logging-regulations will be improved, reducing the possibility of (illegal) income from logging. More details can be found in the WMP.

#### **6.4.3 Fisheries**

289. Fisheries are a sensitive issue for hydropower projects. The Project, however, does not foresee any immediate impact on fisheries upstream of the reservoir. In the unlikely case of impacts by NNP1, safeguards measures will be prepared to address such impacts as outlined in the REDP. These developments are difficult to forecast and the Project will hire a fisheries expert to design and implement a Fish Catch Monitoring Program. This program will also determine the impact of NNP2 as baseline and monitor changes after the closure of the NNP1 dam to assess and differentiate eventual impacts; the villages from Zone 1 lie downstream of NNP2 and water quality might be impacted from its water discharge.

#### **6.4.4 Other Livelihood Activities including Business and Employment**

290. The Project will have no major impact on other livelihood activities. The implementation of the WMP might lead to small-scale opportunities for villagers, for example patrolling the watershed. Indirectly, an expected improvement of the socioeconomic situation in 2UR would have positive impacts on the whole district and provide business opportunities for villages of Zone 1 as well.

### **6.4.5 Tenure Security**

291. No impact on tenure security is expected.

### **6.4.6 Expenditure patterns**

292. No immediate impact is expected, due to just limited impact on the income side outlined above.

## **6.5 Impact on Social Structures**

### **6.5.1 Population profile**

293. No impact on the population profile in Zone 1 is expected.

### **6.5.2 Social Relations**

294. No impact on social relations in Zone 1 is expected.

### **6.5.3 Social Disturbances**

295. No impact on social disturbances in Zone 1 due to Project activities is expected. Cultural awareness programs will have a small part in mitigating social disturbances from other sources than project activities.

### **6.5.4 Local Authorities**

296. No major impact on local authorities in Zone 1 is expected. Skill improvements for district staff along programs implemented in 2UR will benefit Zone 1 also, as both zones are located in Thathom district. This includes training of district health staff.

### **6.5.5 Health including Nutrition**

297. The Project will increase the health situation in the area via its Public Health Action Plan outlined in the SDP, consisting of health awareness programs and support of immunization campaigns. Unexpected changes of fisheries would have an impact on nutrition patterns.

### **6.5.6 Education**

298. The Project will implement a skill development and cultural awareness program which will enhance expertise in the villages of Zone 1. Furthermore, individual studying of the implementation and outcome of livelihood programs implemented in 2UR will result in learning processes in Zone 1.

### **6.5.7 Safety**

299. No impact on safety in Zone 1 is expected.

### **6.5.8 Youth**

300. The health program focuses specifically on children, increasing their health status, while the cultural awareness program benefits young people.

## **6.6 *Impact on Access***

### **6.6.1 Access to Public Infrastructure**

301. There will be no impact on public infrastructure in Zone 1.

### **6.6.2 Access to Information and Services**

302. Indirect positive results of an improved socioeconomic situation of the district due to livelihood programs in 2UR might increase access to services.

### **6.6.3 Access to Urban Areas**

303. There will be no impact on access to urban areas in Zone 1.

## **6.7 *Impact on Ethnicity, Gender, and Vulnerability***

304. No adverse impacts on ethnicity, gender, or vulnerability are expected. Related groups will be, however, the main beneficiaries of the Health and Cultural Awareness programs described in the SDP.

## CHAPTER 7 - Social Analysis Upper Reservoir Area

305. Zone 2UR encompasses all affected communities and their assets at the upper end of the reservoir. As outlined above, these communities are Ban Piengta, Ban Hatsamkhone, and Ban Pou; all three villages lie on the left bank of the Nam Ngiep River, along the National Road 1D in Thathom District, Xaysomboune Province. Arriving to Ban Pou on Road 1D, one passes Ban Long several kilometres before, while continuing on the road after Ban Piengta towards the capital of Xieng Khouang Province, one reaches the bigger town of Ban Thaviengxay after little more than a kilometre. The communities will be affected by the inundation of the reservoir, which will flood land up to 320MSL. The reservoir reaches its upper limit shortly after Ban Piengta and before Ban Thaviengxay. The impact differentiates from village to village as well as within each village. According to the Survey 2011, a total of 15 families will lose their houses (10 in Ban Pou, 5 in Ban Hatsamkhone), and they will have to relocate, but they will do so within the same village. A total of 176 households in all three villages will lose productive lands lying below 320 MSL (including the 15 households losing houses). These are mostly paddy fields and riverside garden plots. Additionally, land of two households in Ban Phou Hom/Nakhang, opposite the river of Ban Piengta will be impacted. They have been included into the consultation process with Ban Piengta. Details can be found on the following pages.

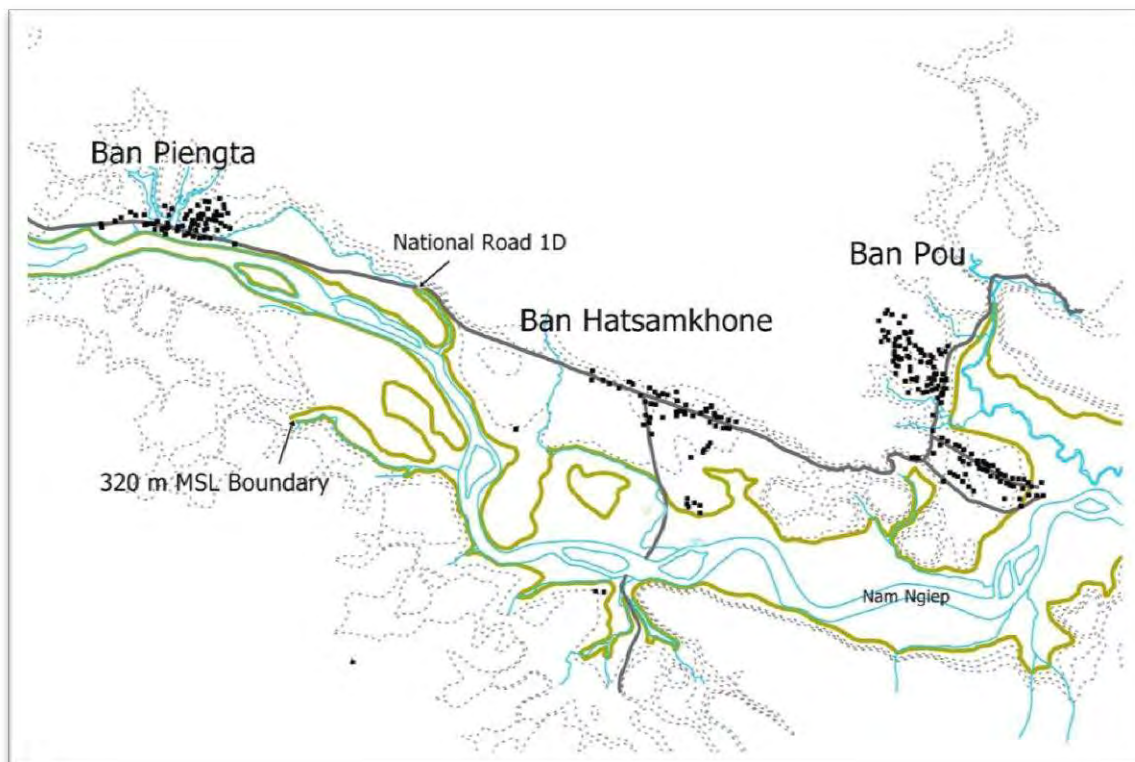


Figure 15: Map of villages of Zone 2UR

## 7.1 Socioeconomic Profile

### 7.1.1 Demography and Population Changes

306. A comprehensive household survey in all three villages of this sub-zone was conducted in July, 2011. According to this survey, 2,036 people live in 328 households, an average of 6.2 persons per household, slightly above the national average. Of the 328 households, about half will be directly affected by loss of productive lands due to inundation of the NNP1 reservoir at 320m MSL. In Ban Hatsamkhone most of the residents will be directly affected. In Ban Pou and Ban Piengta less than half of the residents will be directly affected, with further indirect impacts. Lao Loum is the dominant ethnic group in this sub-zone; however, there are also significant populations of Khmu and Hmong, particularly in Ban Pou, where the majority of residents are Hmong. The cut-off date for eligibility to claim entitlements has been set by the PRLRC on April 11 2014 which will be communicated to all affected villages before mid of June 2014. An updated asset registration survey will be done for impacted assets after the cut-off-date and the numbers and budget allocation revised accordingly.

Village	Total		Directly Affected		Ethnicity
	HHs	Population	HHs	Population	
<i>Ban Pou</i>	172	1,129	82	520	Hmong, Lao Loum, Khmu
<i>Ban Hatsamkhone</i>	74	453	60	376	Lao Loum
<i>Ban Piengta</i>	82	454	34+2*	182+7	Lao Loum, Hmong, Khmu
<b>Total</b>	<b>328</b>	<b>2,036</b>	<b>176+2</b>	<b>1,085</b>	

Table 31: Total Population and Household Number in Zone 2UR (Source: Field survey 2011)

\* Lands of 2 households from Ban Phou Hom are impacted in the Reservoir area, joining Ban Piengta for project activities

307. Data from the field survey of 2011 shows a local demography similar to national data as well as to broader data of developing countries. This means a large young generation, with over 50% in the age group “20 years or younger”. Considering the time frame of the project, these young people will experience considerable positive and negative changes during their time of learning and growing up parallel to the proceeding of the NNP1 project. Thus, special attention will be given to them regarding education and training possibilities.

Age Cohort	Village						Total	
	<i>Pou</i>		<i>Piengta</i>		<i>Hatsamkhone</i>			
	No.	%	No.	%	No.	%	No.	%
<b>&lt;= 10</b>	282	30.65	83	19.67	90	19.7	455	25.29
<b>11-20</b>	252	27.39	126	29.86	146	31.95	524	29.13
<b>21- 30</b>	139	15.11	78	18.48	76	16.63	293	16.29
<b>31-40</b>	104	11.30	50	11.85	53	11.60	207	11.51
<b>41-50</b>	72	7.83	29	6.87	41	8.97	142	7.89
<b>51-60</b>	45	4.89	23	5.45	28	6.13	96	5.34
<b>61-70</b>	12	1.30	22	5.21	13	2.84	47	2.61
<b>71-80</b>	3	0.33	8	1.90	4	0.88	15	0.83
<b>81-90</b>	10	1.09	2	0.47	6	1.31	18	1.00
<b>91-100</b>	1	0.11	1	0.24		0.00	2	0.11
<b>Total</b>	920	100	422	100	457	100	1799	100

Table 32: Age Distribution in the 3 villages of Zone 2UR (Source: Field Survey 2011. Note: This information is based on HH interview and thus some people are missing)

308. Further data regarding differentiation between male and female distributions from this survey show variation throughout the different age cohorts, however, due to the small amount of numbers, no statistically relevant conclusion can be drawn. Matched with the information acquired during village consultations, no specific male/female demographic development takes place in these villages, different from closer Lao border towns, where labour migration can be gender-specific depending on the industry sectors offering jobs.
309. Population in the upper reservoir area is closely connected to the history of the three villages in 2UR. Ban Pou and Ban Piengta have been established after the revolutionary war in 1975. Meanwhile, Ban Hatsamkhone was founded in 1994 by people resettled under government supervision from Huaphan province in between the other two communities. Similar movements of communities can be traced in the surrounding villages as well. Thus, for example, Ban Nakhang has been moved from its remote location close to 2LR to Ban Phoun Hom opposite of Ban Thaviengxay and Ban Piengta. These relocations are part of GoL's policy to consolidate smaller communities into bigger clusters in order to provide better social and physical infrastructure. Two villagers from Ban Phoun Hom still have land in their former village, which will be impacted by the inundation, thus they have been included in consultations with Ban Piengta. Comparing recent data from the 2007/8 and 2011 surveys show, that population numbers are stable in Piengta and slightly increasing in Hatsamkhone. Meanwhile, Ban Pou is expanding; consultations with the PAPs indicate that over the last decade, the village experienced a population influx of relatives of village members; a factor to be taken into account by the livelihood programs of the Project.

### 7.1.2 Ethnicity

310. The ethnic profile of the 3 villages in Zone 2UR is presented in Table 33. People from three

ethnic groups live in 2UR. Only one community, Ban Hatsamkhone, is exclusively populated by one ethnic group, Lao Loum; while Ban Piengta, even though the majority is Lao Loum, has a minority of Hmong and Khmu residents. Ban Pou is predominantly Hmong, with about a third Lao Loum residents and a few Khmu. Impacts, however, differ in Ban Pou: as Lao Loum are located at the lower areas of the village, they are much stronger impacted than the Hmong, living higher up in the hills of the village. There are no open conflicts between the different ethnic groups within these communities. The uniformity of Ban Hatsamkhone is related to its special history, being a government induced resettlement from Huaphan Province.

Village	No. of Households	Population	Ethnic	Population	%
<i>Ban Pou</i>	172	1,129	Hmong	774	68.6
			Lao	329	29.1
			Khmu	26	2.3
<i>Ban Piengta</i>	82	454	Lao	436	96.0
			Hmong	8	1.8
			Khmu	10	2.2
<i>Ban Hatsamkhone</i>	74	453	Lao		100

Table 33: Ethnicities of the Affected People of Zone 2UR (Source: Field Survey 2011)

### 7.1.3 Social Organization and Cultural Relations

311. The analysis of 4.4 on social organisation and cultural relations applies also in 2UR: administrative organization, mass organizations, and a strong focus on families. Two additional components are influential in the area: the Hmong households in Ban Pou are related via the clan system to PAPs from 2LR and Zone 3; they are furthermore related to people outside the Project Impact Zone, from where the influx of relatives, mentioned above, results. Ban Hatsamkhone, having resettled to the area amongst others due to political reasons, has a strong internal cohesion and is currently less inclined to cooperation with the Hmong people of Ban Pou.

### 7.1.4 Infrastructure

312. All the villages in Zone 2UR share conditions that are typical for remote rural areas of Lao PDR. Infrastructure and public services are limited, but being improved over the last years.
313. **Water supply:** Ban Pou has a water system which has been facilitated by Action Contre La Faim (ACF) in 2007. Two water streams from springs, one 200m, one 1.8km away, lead to two water tanks a 21.6km<sup>3</sup> each. One tank dispenses water to six water tab stands in the upper, Hmong, community; the other tank to six water tab stands in the lower, Lao Loum, community; plus to one water tab stand at the school area. This is on average one tab stand for 13 households and thus far below the UNICEF standard of 1:6, as outlined in the CA,



Annex C. From April to June water arrives strongly reduced from the springs. In Ban Hatsamkhone, a pipe system provides water from a nearby stream, which leads in rainy season to dirty water, even though there is always enough quantity. Furthermore, this water is not drinkable without purification measures, i.e. cooking. Ban Piengta uses the same system as Ban Hatsamkhone with the same advantages and disadvantages.

314. **Transportation:** The main transportation access is the asphalt paved, all-weather National Road 1D which links the villages with Phonesavanh, the provincial capital of Xieng Khouang, in the northwest and the district capital Thathom in the southeast, from where roads continue to Bolikhamxay Province and Khammouan Province respectively. From Thaviengxay a paved road leads to Xaysomboun district. Lanes within the villages are earth surface, just partly flattened, and become muddy during rains. Currently, people use boats to cross the Nam Ngiep during rainy season while it is possible to cross by foot or Tek-Tek through the water in dry season.
315. **Electricity:** Grids have been installed and connect most houses in all three villages. Electricity is generally available for 24 hours a day, even though blackouts occur sometimes.
316. **Privately owned basic services:** Small grocery shops, rice mills, and petrol shops are available inside the three villages. Further services can be found in the close-by Thaviengxay village and along D1 road.
317. **Public infrastructure:** Primary schools are available in all three villages, while in Ban Pou additionally a secondary school has opened in September 2013. There is only one temple in this zone, in Ban Pou, while each village has its cemetery. Each village furthermore has a village office and Ban Piengta has a Health Centre. Further details can be found below.

Infrastructure	Ban Pou	Ban Hatsamkhone	Ban Piengta
<i>Electricity</i>	Available in most households		
<i>Drinking water source</i>	Piped water from springs	Piped water from open streams	Piped water from open streams
<i>Transportation and type of road / Problem</i>	Asphalt-paved D1 road; earth paths inside the villages / difficult to use in wet season		
<i>Navigation waterway</i>	Nam Ngiep		
<i>Small grocery shops</i>	6 shops	5 shops	2 shops
<i>Rice Mill</i>	Y	Y	Y
<i>Nursery School</i>	N/A	N/A	N/A
<i>Primary School</i>	1	1	1
<i>Secondary School</i>	1	N/A	N/A
<i>Temple</i>	1	N/A	N/A
<i>Health Centre</i>	N/A	N/A	1

Infrastructure	Ban Pou	Ban Hatsamkhone	Ban Piengta
<i>Pharmacy</i>	N/A	N/A	N/A
<i>Cemetery</i>	1	1	1
<i>Petrol</i>	Several villagers sell gasoline in bottles; several petrol stations in the area are located along D1 road		

Table 34: Infrastructure of Villages in Zone 2UR (Source: Field Survey 2011; update 2013)

### 7.1.5 School attendance

318. As described above, there are primary schools in every village and a secondary school opened recently in Ban Pou. This school will integrate students from Ban Long, the next village on the road to Thathom town. Before, children had to travel to Ban Thaviengxay for continuing their formal education in secondary school. More details on the success of this secondary school onto school attendance rates will be investigated via the legal Baseline Survey 2014. In general, during consultations villagers from all three villages report education as one of their main concerns and good schooling possibilities for the younger generation as a major aspiration. There is a lack of teachers and teaching materials to provide adequate educational services, as well as household income to send children to school. Furthermore, some people have expressed concern that even the public school system needs private financial input to pay for extra tutoring. The Project will link to this motivation and the issues raised in its education program outlined in the SDP.

### 7.1.6 Literacy rates

319. There exists a gap on formal education, the literacy proxy of the 2011 survey, between different generations, particularly at secondary school and higher. Older generations have little formal education due to remoteness and war. Most young children attend primary school, even though there is dropout before concluding secondary education.
320. Table 35 presents the number of residents of the three villages who have completed the various education levels. Most of the women and many men in the project area are not fully literate, since partial completion or even completion of primary school does not imply full literacy.

-Village Name	Total Population in interviewed HH	# of interviewed HH (297 HH)	Formal education Level (number of persons)									
			<i>Not concluded formal education</i>		<i>Primary School</i>		<i>Lower Secondary School</i>		<i>Upper Secondary School</i>		<i>College or University</i>	
			PP	%	PP	%	PP	%	PP	%	PP	%
<i>Ban Pou</i>	905	145	342	37.8	376	41.5	129	14.3	55	6.1	3	0.3
<i>Ban Piengta</i>	412	79	87	21.1	199	48.3	91	22.1	33	8.0	2	0.5

<i>Ban Hatsam khone</i>	446	73	56	12.6	230	51.6	116	26.0	43	9.6	1	0.2
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Table 35: Levels of Formal Education in Zone 2UR (Source: Field Survey 2011)

### 7.1.7 Health

321. Health care in the villages relies on two bases: on the one hand villagers consult traditional healers and use local knowledge on treatment and medicine; this extends to spiritual analysis and procedures. On the other hand they are integrated into the formal health care system, which, however, is still weakly established. There is a health centre in Ban Piengta and dispensaries provide services in Ban Thaviengxay and the district capital Thathom. The nearest hospital is located in Phonesavanh, the capital of Xieng Khouang Province; a distance of 77km. All places are accessible all-year round by an all-weather-road (Road D1).
322. Access to water, as seen above, varies between the villages. While Ban Pou can make use of two springs with good quality and struggles with limited quantity in dry season, Ban Hatsamkhone and Ban Piengta use open-stream-water, which is available all-year-round, but has to be boiled before usage and above all in rainy season is dirty. Poor water quality has given rise to typically water-related diseases such as stomach and parasitic infections.
323. Immunization against infectious childhood diseases has not yet been carried out in a large scale. Not all of the households have a regular latrine. However, the villagers do use mosquito nets during sleeping. Even so, malaria and dengue remain one of the major health problems in the area, as are fevers, enteric infections, and diseases such as diarrhoea and dysentery. Acute respiratory infections are also a serious problem in these communities.
324. Table 36 presents the extent of infectious diseases common to Lao PDR in the three villages in 2UR as reported at the time of the 2011 field research.

Village Name	Number of people									
	<i>Malaria</i>	<i>ARI</i>	<i>Diarrhoea</i>	<i>Fever</i>	<i>Stomach ache</i>	<i>Lung</i>	<i>Skin disease</i>	<i>Eyes disease</i>	<i>Dengue fever</i>	<i>Parasites</i>
Ban Pou	1	0	7	4	-	3	-	-	1	-
Ban Piengta	-	7	-	0	3	1	-	-	-	-
Ban Hatsamkhone	1	5	-	5	3	-	-	-	1	-

Table 36: Infectious diseases in 2UR (Source: Field Survey 2011)

325. Furthermore, some diseases like Polio are also endemic, resulting in some disabilities among several households, for whom the project will give special attention under the principle of mitigation of vulnerability.
326. Additionally, social custom among some ethnic groups regarding types of food consumption for pregnant women and following childbirth, may contribute to poor maternal health and higher levels of anaemia.

### 7.1.8 Gender Issues and Status of Women

327. Gender issues and status of women follow general patterns of rural communities in Laos. Specifically, as a result of the survey in 2011, the following gender issues are relevant in the zone 2UR:

- Premature births
- High demand of physical labour including seasonal farming

### 7.1.9 Information and Services

328. While at the early stage of the Project, the villages in 2UR were still remote and access to more urban areas and its services was difficult, this has changed strongly over the last years. With inter-provincial tarmac sealed road access, electricity, and communication networks available in all three villages, the three villages are, more than any other village described in the REDP, integrated into the national socioeconomic structures. Television connection is available and modern communication technology, including smart phones, is an essential factor in the provision of information and services in 2UR. Health facilities are present in Piengta, but also in nearby Ban Thaviengxay. Inter-provincial bus connections are available and school buses bring students to the bigger villages. This strong increase in access to facilities and services has been a key factor in the PAPs' decision to invest in livelihood change rather than into resettlement to a little populated, i.e. more remote, area.

### 7.1.10 Agriculture and Horticulture Land Use

329. Land use in 2UR is classified into three main categories: privately held land, community land, and state land. Privately held land is mostly composed of housing plots and permanent agricultural holdings: paddy lands, upland rice fields, and garden or tree plots. A first household survey in 2011 counted 890.79 ha of agricultural land in the three communities by asking each household about their land use. According to this survey, just a fraction of privately held land is in use for residential plots (34 ha) and fishponds and other miscellaneous use (10ha). Thus, current private holdings account for only slightly more than 6 % of the total land use area in these villages. After the cut-off-date, as in the other project areas, a detailed participatory land use mapping will be undertaken and logged via a Geographic Information System, which allows for a more precise information base which will serve as the basis for compensation and implementation of the livelihood restoration plans. Care will need to be taken to ensure that all cultivated and land use areas are accounted for, even if not declared by the land user for taxation purposes, and that affected people understand that land not declared may not be subsequently eligible for compensation.

330. In Ban Pou, rice production accounts for a big portion of agricultural land on the left hand side of Nam Ngiep along the tributary Nam Pou, divided between paddy fields and upland rice fields. Further agricultural land is situated along the road to Thathom as well as in the valley starting from the northern tip of the village. While Lao Loum have more paddy fields and the Hmong community more upland rice fields, there is no clear-cut differentiation to

be made based on ethnicity, as some Hmong own paddy fields, and vice versa Lao Loum upland rice fields. On the remaining agricultural land, villagers plant corn, pineapple, bananas, and cassava as cash crops as well as garden vegetables for private consumption. Cassava is mainly contract farmed on behalf of outside traders. Higher up, villagers of Ban Pou have planted rubber. Total agricultural land encompasses according to the 2011 survey around 400ha.

331. Ban Hatsamkhone follows a similar agricultural pattern. Productive land extends on both sides of the Nam Ngiep, with extensive land holdings on the right hand side of the river. There, several streams from the surrounding mountains allow broad agricultural activities. Villagers grow and harvest paddy field rice and upland rice on half of their land, with the latter percentagewise slightly less than Ban Pou according to the 2011 survey in this Lao Loum community. On the second half of agricultural land in Ban Hatsamkhone cash crops and garden land can be observed, including corn, pineapple, bananas, cassava, and privately consumed vegetables.
332. In Piengta, paddy fields make up around a third of agricultural land which extends on both sides of the Nam Ngiep all the way to the village boundaries of Ban Hatsamkhone in the west and Ban Thaviengxay in the east, and account together with upland rice for nearly half of agricultural land. Consequently, the bigger areas of land are used for cash crops like corn, pineapple, and banana as well as garden land. In 2013 no cassava contract farming took place in Ban Piengta, as the traders stopped in Ban Hatsamkhone. However, if results are positive in the other two villages, villagers in Ban Piengta intend to try to facilitate cassava contract farming as well.
333. Large livestock raising, i.e. cattle, takes place on community lands. Each household owns on average 4-5 cows. 5-10 households form a livestock group, which manages a plot of fenced (barbed wire) community grazing land. The rest of community land is mainly used for public infrastructure: schools, cemeteries, and in Ban Pou the temple.
334. Forest land accounts for the remaining, main part of total land in these three villages by far. There is a considerable amount of state owned protected forest, covering half of the forest land, with the other half divided between community managed production forests and community managed reserved forest. Unstocked forest, quite prevalent in many other parts of the project area, accounts for only a small portion of the total land area. Forests do not just provide timber and fire wood, but as well NTFPs for the communities as an important part of their household income.

Type of land use (ha)	Piengta	Hatsamkhone	Pou	Total
<b>1. Private Land</b>				
1.1 Residential area	5.51	9.88	18.94	34.33
1.2 Paddy field	68.19	78.44	130.1	276.73
1.3 Upland rice field	24.074	37.29	93.78	155.14
1.4 Other cultivated land	125.95	126.05	172.58	424.58
1.5 Other private land use	4	3	7	14
Total	227.73	254.66	422.4	904.78
1.6 Fish Ponds (unit)	0	3	7	10
<b>2. Public Land</b>				
2.1 School Land	1	1.5	1.5	4
2.2 Temple Land	0	0	0.5	0.5
2.3 Village Office Land	0	0	0	0
2.4 Health Centre Land	0.5	0.42	0.71	1.63
2.5 Cemetery land	2	3	2	7
2.6 Grazing area	41.9	2.5	6.15	50.55
2.7 Pond/water body	0	0	0	0
2.8 Other public land use	23.7	26.3	35.4	85.4
Total	69.1	33.72	46.26	149.08
<b>3 Forest and others</b>				
3.1 Community-managed production forest	245	857	2,050	3,152.00
3.2 Community-managed reserved forest	253	637	694	1,584
3.3 Other Forest				
Protection forest	5423	540	657.5	6,620.50
Unstocked forest	363	365	882	1610
Buffer zone	41.9	2.5	6.15	50.55
Total	6,325.90	2,401.50	4,289.65	13,017.10
<b>Total Land Use</b>				<b>14,070.91</b>

Table 37: Land Use Pattern of Zone 2UR (Source Agricultural Land: Field Survey 2011; Source Public and Forest Land: Draft RAP 2008)

### 7.1.11 Rice Sufficiency

Villages	No. of HHs interviewed	Full sufficiency	Insufficient for 2 to 4 months	Insufficient for 5 to 6 months	Insufficient for 7 to 8 months
<i>Piengta</i>	79	84.8%	3.8%	2.5%	2.5%
<i>Hatsamkhone</i>	73	90.4%	6.8%	1.4%	1.4%
<i>Pou</i>	145	71.7%	13.8%	6.2%	4.14%

Table 38: Rice Sufficiency Production Rates of HHs on a Yearly Basis (Source: Field Survey 2011)

335. Most of the villages harvest enough rice for year-round consumption (see Table 38). There are several coping strategies applied by villagers to overcome shortages, if occurring: one is to mix rice with corn as filler; a second is to sell livestock (in Ban Pou they indicated during consultations in 2013 that one sold cow equals to 3 tonnes of rice); and a third are local rice banks, as presented by villagers in Ban Hatsamkhone. The community-organized rice bank provides rice in June-July and requests repayment the following January with 30% interests. This is still cheaper for the borrower than to pay 50% interest to commercial rice traders.
336. Rice yields in the upper section of the reservoir area range from 2.7 to 2.9 tons per hectare per year for lowland rice fields and 0.99-1.4 ton per hectare per year as shown in the following.

Village Name	Paddy Rice	Upland Rice
<i>Ban Piengta</i>	2.90 ton/ha/year	1.20 ton/ha/year
<i>Ban Hatsamkhone</i>	2.86 ton/ha/year	0.99 ton/ha/year
<i>Ban Pou</i>	2.70 ton/ha/year	1.40 ton/ha/year
<i>Average</i>	<i>2.82 ton/ha/year</i>	<i>1.2 ton/ha/year</i>

Table 39: Comparison Yield of Rice Production in 2UR (Source: Field Survey 2011)

### 7.1.12 Livestock

337. As like in all other zones, livestock is an important income and savings source. All households raise a variety of animals, including large and small livestock. For large livestock with fenced grazing areas farther away, villagers have formed livestock groups, organizing the supervision of livestock in these remote grazing areas. As this livelihood activity is reported from PAPs as a favoured livelihood activity, the Project will assess further details in the 2014 Baseline survey and link its livelihood program, including the evaluation of expansion of pasture possibilities in the area.

### 7.1.13 Forest Utilization

338. While Non-Timber Forest Products have been an important livelihood activity in 2UR, PAPs report that in recent years NTFP collection became more and more difficult as due to overconsumption in the nearby forests. Thus, for NTFP collection, PAPs have to enter farther and farther into the forests, decreasing the profit and importance of this livelihood activity.

### **7.1.14 Hunting**

339. Villagers are hunting in the forests around the villages, partly for own consumption, partly for sale in the local markets. With increased traffic along the D1 road, it is expected that more hunting products will be offered for sale along the road. The NNP1 EMO together with public authorities will enhance control measures in the Watershed Management Area.

### **7.1.15 Fisheries**

340. Local, small-scale fishing as in all other Lao villages close to streams takes place on a regular basis, adding valuable nutrition components to daily food consumption. Furthermore, fishermen from 2UR travel the Nam Ngiep all the way downstream close to 2LR to catch big river fish, which in 2013 could be sold for 60,000 LAK per kg in Ban Thaviengxay. Given the size of some fish, this can accumulate to a considerable amount of money for one fishing excursion. Accordingly it is possible for fishermen to do some kind of contract fishing by getting a cash advance from the buyer to pay for fuel to go for a 2-3 days-fishing-trip.

### **7.1.16 Other Sources of Cash Income**

341. Next to agriculture, forests, and fisheries, two other important income sources can be found in 2UR: fisheries, services, and manufacturing and wage labour.
342. With increased cash income, for example due to the mentioned contract farming, service shops allow some families in the three villages to open small grocery shops, motorbike repair shops, etc. While they still just account for a small proportion of overall household income according to the 2011 survey, this number is likely to increase over the next years, especially given the proximity of the villages to the main national road.
343. Secondly, small-scale manufacturing and wage labour play an increasing role in household incomes. Silk weaving production takes place in the area, and there is support from the district government to increase the revenue from the related value chain by establishing mulberry farms. Furthermore, carpenters produce furniture on a small-scale base. Wage-labour results on the one hand from positions in the public service sector, i.e. teachers, nurses, government officials, but as well from private businesses as in saw mills. Furthermore, younger people send remittances from working in factories in Phonesavanh and Vientiane to their families at 2UR.

### **7.1.17 Imputed Income**

344. Data on cash income and livelihood activities show, that imputed incomes in 2UR are of importance, however, less than in other villages of the Project area. A detailed assessment of imputed income will be conducted by the legal baseline study 2014 and presented in the updated REDP.

### **7.1.18 Cash Income**

345. The socioeconomic activities outlined above lead to the forms of cash income outlined



below. Already in 2011, income from wages was the most important single source of cash income. This is expected to have further increased over the last years, with details to be assessed by the 2014 survey. Interestingly, cash income from livestock and vegetable production is at least as important as rice production. Here, livelihood programs can link to.

Activities	Ban Piengta		Ban Hatsamkhone		Ban Pou	
	Amount (kip/year)	%	Amount (kip/year)	%	Amount (kip/year)	%
<i>Rice production</i>	1,251,364	4.5	2,553,698	12.21	1,322,497	10.8
<i>Livestock</i>	2,344,557	8.42	3,259,315	15.58	1,008,876	8.24
<i>Plantation Trees</i>	56,557	0.2	153,164	1.1	98,076	0.3
<i>Vegetable</i>	5,086,076	18.27	2,289,639	10.95	638,820	5.21
<i>Fishery</i>	689,873	2.48	762,000	3.64	67,938	0.55
<i>Hunting</i>	32000	0.11	1220000	5.83	5500	0.04
<i>NTFP</i>	383544	1.38	113562	0.54	73917	0.6
<i>Wages</i>	17,455,000	62.72	9,933,000	47.49	8,200,000	66.94
<i>Small Business</i>	532,000	1.91	632,000	3.02	835,000	6.82
<b>Total</b>	<b>27,830,971</b>	<b>100</b>	<b>20,916,378</b>	<b>100</b>	<b>12,250,624</b>	<b>100</b>

Table 40: Yearly Average Household Cash Income in 2UR (Source: Source: Field Survey 2011)

346. Electricity is changing the pattern of energy use and life style. People use electric lighting instead of kerosene lamps. Some people use electric rice cookers and other electric kitchen or cooking appliances. Refrigerators are used instead of traditional forms of food preservation, such as smoking foods above the kitchen hearth. TVs and karaoke machines make people stay up longer; electric lights allow children to study longer and people to be more productive by working on household industries or other tasks into the night. People will need to spend less time on gathering firewood, as electricity or natural gas is more available for cooking. Properly constructed water pumps and water supply systems reduce the time and effort needed to carry water and provide more hygienic and potable domestic water supply, resulting in reduced labour to carry water as well as reduced incidence of water-related diseases.
347. The introduction of the all-weather road and electricity provides easier access to markets, allowing market-oriented agriculture. Crop production is slowly becoming more intensive, as people begin to use more fertilizer, insecticide, and pesticide. Livestock husbandry is becoming confined in more restricted areas, particularly in villages experiencing rapid population growth with a corresponding decline of grazing areas. Better roads and better transportation encourage people to travel more, which again lead to more exchanges of products, and interaction between people of different communities.
348. All these developments offer opportunities for new service and small business occupations: restaurant businesses (food stall, noodle shop), hairdressers, weavers, transportation business (bus/truck operation), trading (NTFPs, agricultural products, handicraft), grocery

stores, tour guide and other tourism-related activities, motorbike repairs, electrical appliance repairs, and further services.

### 7.1.19 Total Income

349. An assessment of livelihood activities (including employment and cash crop farming) and cash income information suggests that the total income will be substantially higher due to rice production for own consumption, but not as essential as in other Project zones. A total figure will be presented in the updated REDP after conducting the 2014 Baseline Survey.

### 7.1.20 Household Expenditure

350. Household expenditures in the communities of Zone 2UR can be divided into 2 broad categories: on-farm expenses, needed to produce crops and other agricultural goods, and off-farm expenses. On-farm expenses for crops are the purchase of inputs, in particular seeds, fertilizer, and equipment, including gasoline. For livestock, it encompasses purchase of new animals and care of existing livestock; and for fisheries it mostly entails purchase or repair of boat equipment as well as gasoline.

KIP/YEAR	Ban Piengta	Ban Hatsamkhone	Ban Pou
Crop	445,500	459,000	371,000
Livestock	153,000	109,900	150,500
Fishery	88,000	90,000	52,000
Off-farm	178,200	190,850	216,450
<b>Total</b>	<b>864,700</b>	<b>849,750</b>	<b>789,950</b>

Table 41: Yearly Household Expenditures in 2UR (Source: 2nd Study on Social Impact Assessment (SIA) of the NNP1: A Census Survey and Asset Assessment of Upper Reservoir Area, 2008)

351. With influx of consumer goods like televisions, mobile phones and motorcycles, off-farm expenses will increase as much as with investments in health and education.

### 7.1.21 Poverty

352. The Project used in 2UR rice insufficiency as a proxy for poverty. Considering the numbers above, around 15% of people in 2UR are potentially vulnerable regarding food insecurity. The Project will make a qualitative analysis of all of these households to understand, how rice insecurity is linked to food insecurity; this should reduce the numbers, as some people have alternatives to rice consumption via purchases. Furthermore, the 2014 baseline survey will include more differentiated indicators, including imputed income data, to assess poverty in the three villages.

### 7.1.22 Vulnerable Households

353. In each village there are vulnerable households as outlined in Table 42. While they overlap with poor households, special attention has to be paid to the specific kinds of vulnerability,

either regarding food assistance, alternative livelihood options, and/or health support. As in the other villages, the Project will focus on livelihood enhancement rather than alimentation. This, however, depends on the possibility of livelihood developments of the respective households, including the availability of labour. A detailed assessment of every potential vulnerable household and possibilities of reducing vulnerability will be implemented by the Project's vulnerability officer.

<i>Categories/Villages</i>	<i>Pou</i>	<i>Hatsamkhone</i>	<i>Piengta</i>	<i>Total</i>
1. Head of household is woman	6	0	4	10
2. Head of household is over 60	0	4	5	9
3. Head of household is under 16	0	0	0	0
4. Head of household is disabled	6	2	0	8
5. Household with disabled person		2	3	5
6. Head of house hold is mentally disabled	0	0	0	0
7. Household with mentally disabled person	0	2	1	3
8. Household with only one member	0	0	1	1
9. Household with ethnic different from main group in the community	54	0	3	57
10. Households living below the poverty line <sup>19</sup>	38	17	19	74
11. Landless households with no alternative sustainable income	0	0	0	0

Table 42: Vulnerable person profile of each village in 2UR (Source: Field Visit 2013)

## **7.2 Land Acquisition and Resettlement Impacts**

354. Following the demarcation of the 320 MSL, potentially affected assets were surveyed along with the preliminary census survey and socio-economic study of the affected people in 2011. A description of each affected property was recorded with the acknowledgement of the owner as well as the chief or representative of the village. As outlined above, a detailed impact asset registration survey with a GIS system in place will be carried out after cut-off-date is declared, allowing verifying and updating of data. Details on LAR impacts can be found in the REDP.

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<sup>19</sup> Remark: poor households calculated based on rice insufficiency assessed in 2011 plus a 50% margin of households with rice sufficiency; legal baseline will result from the 2014 socioeconomic survey, reflecting the current numbers.

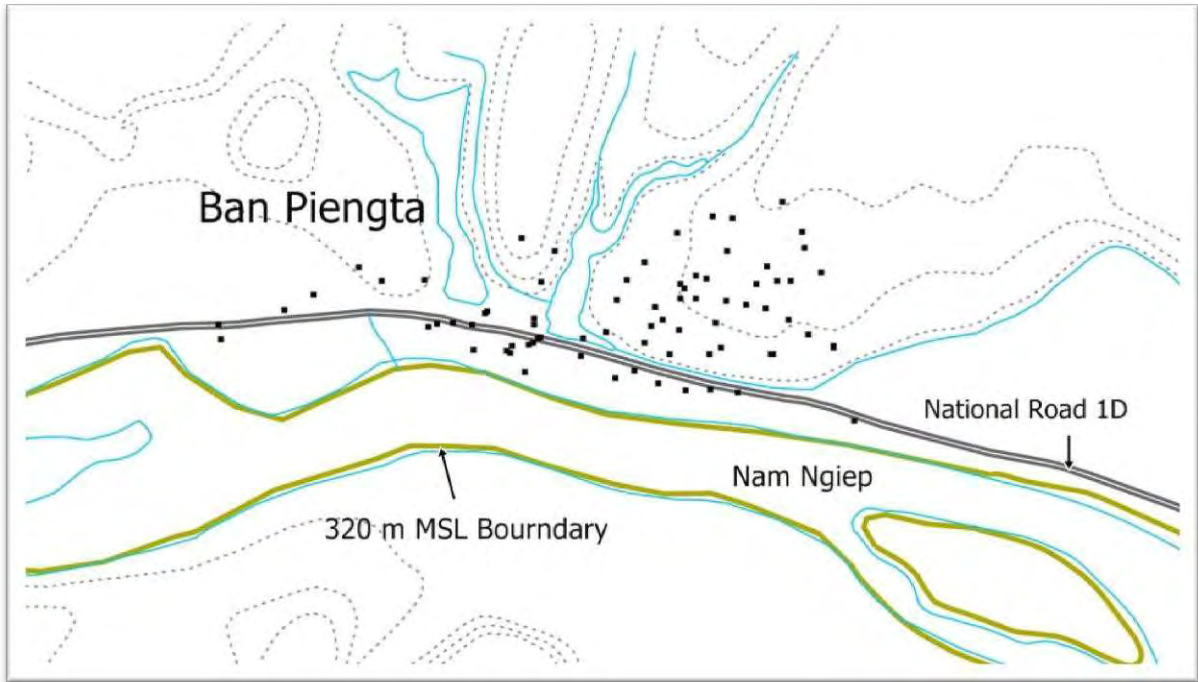


Figure 16: Map of Affected Area of Ban Piengta

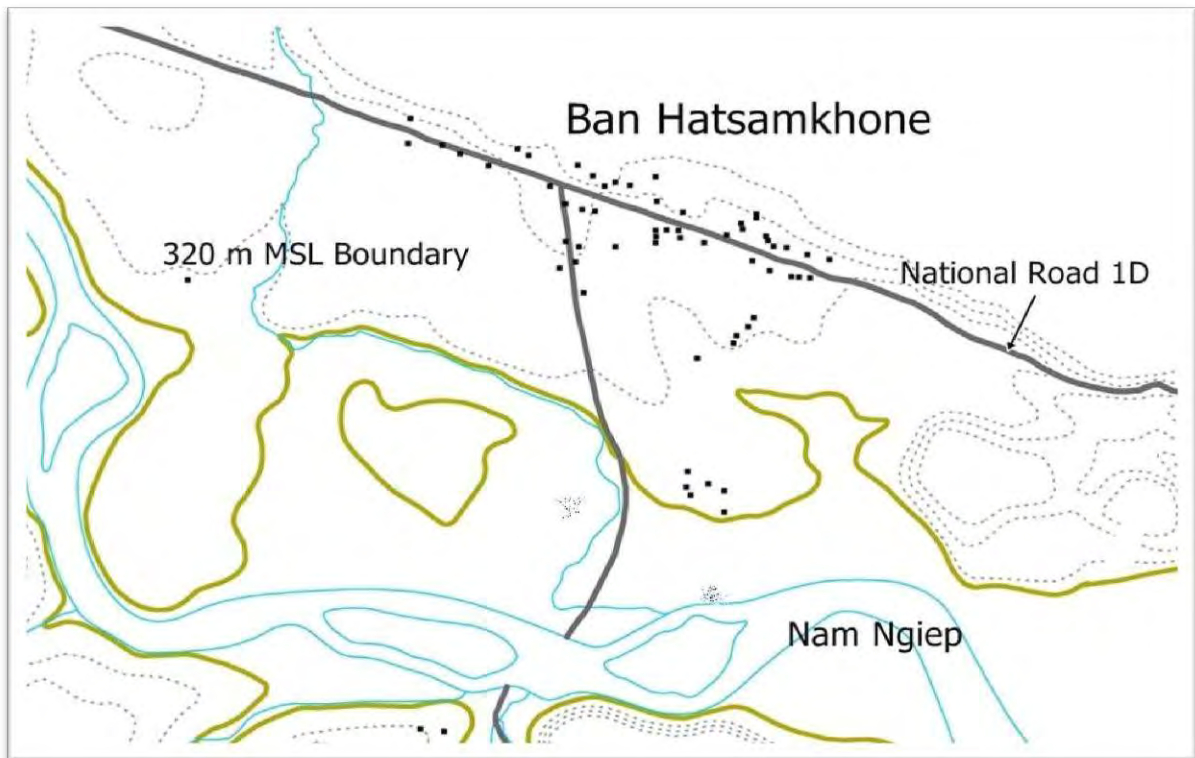


Figure 17: Map of Affected Area of Ban Hatsamkhone

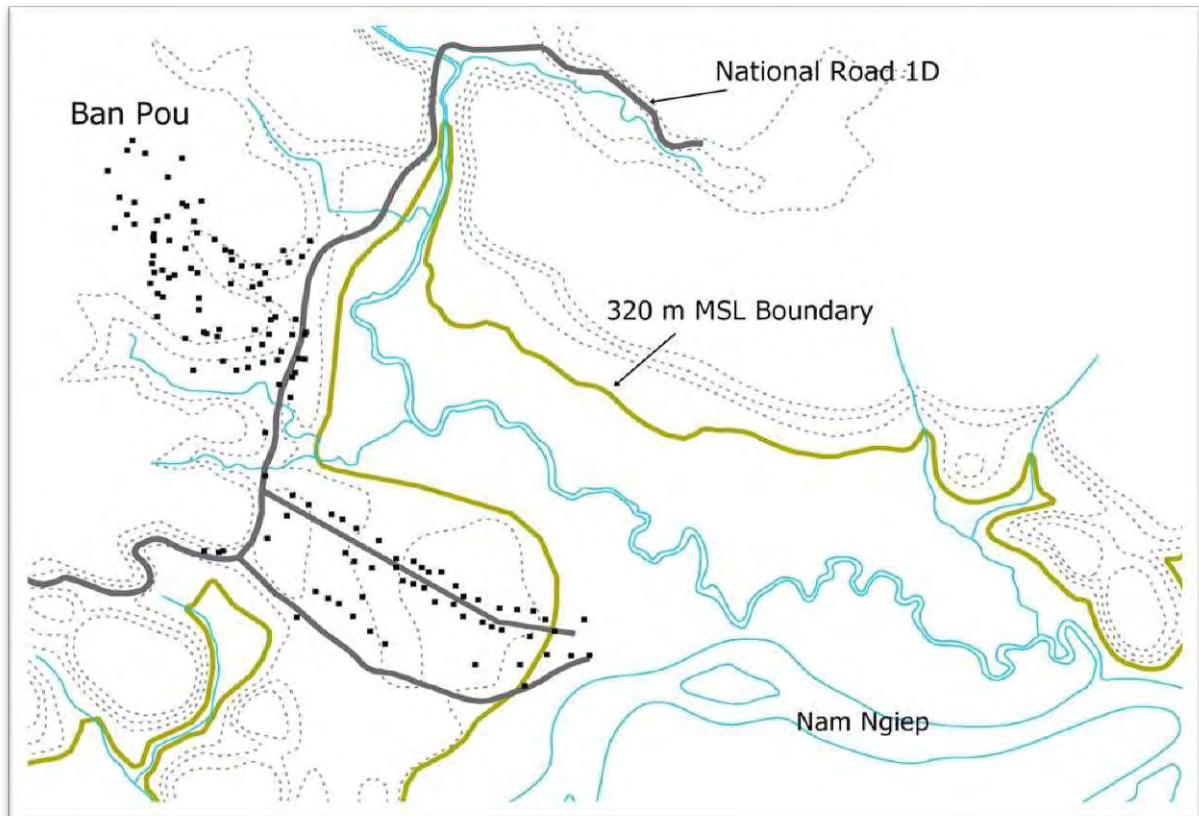


Figure 18: Map of Affected Area of Ban Pou

355. The inundation of the NNP1 reservoir at 320m MSL will affect housing and various auxiliary structures located in 10 household plots in Ban Pou and 5 household plots in Ban Hatsamkhone. Fences and farm shacks belong to these and several other households of the 178 households losing agricultural land. Water will reach about 30 – 40 cm above the ground over all or a substantial portion of these residences when the reservoir is at full capacity. Even though this will not occur throughout the year, the continuous flooding of those lands for even a few months will require that these houses and related structures be relocated elsewhere in the same communities. All other households in the three communities will not resettle.
356. In 2UR the Project will have to compensate all affected structures as fully impacted. This is in regard to the specific kind of impact: even if the edge of the reservoir impacts just part of the structure, with the rest slightly located above full supply level, for safety reasons a partial use of structures cannot be allowed.
357. Approximately 350 ha of agricultural land will be inundated in Ban Pou, Ban Piengta, and Ban Hatsamkhone, affecting 82 households in Ban Pou, 60 households in Ban Hatsamkhone, and 34 households in Ban Piengta, approximately half of the households; all impacts are significant. Although most of the lands will not be flooded year round, they are likely to be inundated during rainy season, which is also the main rice growing season.
358. The most critical losses in 2UR will be of paddy fields; of the people who lose land, more than three quarters lose paddy fields. Further losses are land for cash crops, vegetable

garden plots, and some minor upland rice fields along the Nam Ngiep as well as around the Nam Pou, a tributary to Nam Ngiep which gets impacted by the flooding from the reservoir as well, and the streams opposite Ban Hatsamkhone over the Nam Ngiep. Due to the specifics of impact (inundation), once a flat plot of land (paddy fields and residential land, most of cash crop land) is impacted, it is fully impacted. Thus, similar to the non-existence of partial impact on structure, there exists no partial impact on these flat land plots. Most upland rice and plantation land remains unaffected, as do paddy fields above the inundation level, including elevated side valleys, sometimes additionally protected by natural barriers.

359. In addition to any compensation for the loss of these lands and other resources (including fruit and production trees) in cash and/or in kind, the Project will initiate changes to resource utilization patterns that can provide people with stable and sustainable livelihoods described in the REDP.
360. In 2UR the Project will have no impact on public infrastructure, as all schools, village halls, and the health centre are above Full Supply Level. Neither is there expected to be any impact on cultural assets, as the temple in Ban Pou and cemeteries in the villages are all also located above 320MSL. At one point, the reservoir will be close to Road 1D, but no impact is expected, as the road is elevated several meters above Full Supply Level.
361. It shall be explicitly noted that PAPs in 2UR decided that although significant impact on agricultural land, they prefer to remain in their current villages; with the necessary adaptations of livelihoods rather than resettle to a new resettlement site. Details are described in the REDP.

### ***7.3 Impacts on Livelihood Activities***

362. Land loss in the upper reservoir area and the decision of PAPs to stay in the villages, relocate 15 households within village boundaries, and engage in land development and alternative livelihood options will have an essential impact on livelihood activities in the area.

#### **7.3.1 Crop Cultivation**

363. While cash crop cultivation already has started replacing rice cultivation in the area, this might increase with the possibility to engage in other crop cultivations and trainings provided by the Project. Meanwhile, improved cultivation techniques for rice and other crops, instigated by the Project's livelihood program, will improve the productivity of crop cultivation. The Project's focus on joint trials in the villages (complementing training sessions) will reduce the risk of lack of ownership and increase the sustainability of the program.
364. Secondly, given that the plain in 2UR in the last section of the reservoir will just be flooded during a limited time over the year, villagers requested to make use of the drawdown zone during dry season. While legal issues have to be agreed on with GoL regarding use rights of

reservoir soil, the Project will support this request and together Project and PAPs have to elaborate plans on crop cultivation suitable to the specific characteristics of the drawdown zone (soil development, erosion, etc.)

365. A third aspect is the potential development of small-scale irrigation schemes via the Project's livelihood program and land re-allocation of not impacted agricultural land on a willing-buyer-willing-seller basis, suggested by the villagers.

### **7.3.2 Livestock**

366. Livestock raising is a preferential livelihood option expressed by the PAPs. Similar than crop cultivation, livestock development will be supported by the Project's livelihood programs with trials on type of livestock and techniques of raising and breeding of livestock. PAPs and Project have to take into account the needs and risks of intensified livestock raising. With an increase of livestock numbers, the availability of fodder and pasture will have to be assessed, land development activities planned, and value chains starting from fodder cultivation considered. Also, monitoring of livestock health and the availability of veterinary services is essential to reduce the risk of an outbreak of animal diseases affecting large numbers of livestock population.

### **7.3.3 Forest Utilization**

367. Impact on forest utilization in 2UR will be minor. Minor loss of forest land due to impoundment of the reservoir would reduce the availability of forests for NTFP collection and hunting, but given the degraded status of forestry in the area regarding wildlife and NTFPs reported by villagers, this impact will be less substantial than in the lower reservoir area.

### **7.3.4 Fisheries**

368. Fishing in the reservoir will be different from fishing in the river, with different kind of gears and techniques necessary, including the necessity to use boats. Livelihood activities will take this into account.
369. This applies mainly to the area several kilometres downstream of Ban Pou towards 2LR. Meanwhile, the former paddy fields in the plain at the edge of the reservoir close to the villages of 2LR have potential for increased fish populations in the wet season. After an expected early increase in windfall fishing on the reservoir, reservoir management will allow subsequent sustainable fisheries.

### **7.3.5 Other Livelihood Activities including Business and Employment**

370. PAPs expressed the wish to engage in off-farm activities to make use of the improved access to markets via the road, electricity, and telecommunication. This will be an important aspect of livelihood adaptations, given the reduced availability of agricultural land after impoundment.

371. Livelihood programs will train people not just in skills for new or enhanced professional activities, but also in the necessary additional qualifications and pre-requisites for successful and sustainable employment and business development, such as marketing support and microfinance options for business ideas.
372. In 2UR, the Project will offer employment opportunities, even though limited. Long-term employment with the Project in 2UR is not to be expected due to the limited lifespan of several years of specific project activities. Nonetheless, it can increase livelihood incomes for a period of time and the skills deriving from this experience can be used for alternative livelihood opportunities later on.

### **7.3.6 Tenure Security**

373. The Project will provide land titles for all replacement land in 2UR and thereby increase tenure security for the impacted PAPs. Furthermore, this process will have an indirect impact on other owners by strengthening the titling process in the area, including increased experience of district staff. Land will be progressively used as a market commodity, visible already now during site visits; with prices increasing given decreasing supply opportunities due to loss of land and increasing demand due to potential influx of people seeking opportunities from the Project. The Project's PRLRC has set a cut-off-date for April 11, 2014, which should reduce the risk of opportunistic population influx. The cut-off date will be communicated to all affected villages before mid of June 2014.

### **7.3.7 Expenditure patterns**

374. The above outlined changes in livelihood activities will all lead to stronger market economy integration, including the availability of cash. While the improved income levels will lead to a quantitative increase of expenditures, this will likewise lead to a qualitative change of expenditure patterns. Expenditure decisions become essential for the sustainability of household livelihoods. Family financial training offered by the Project will enable households to understand these changes and will highlight the necessity that long-term investments and savings balance short term consumption. Livelihood trainings will furthermore integrate potential risks into their curricula.

## **7.4 Impact on Social Structures**

### **7.4.1 Population profile**

375. Villagers in Ban Pou already report from an increase of squatters in the area, independently from the Project. The opportunities of the Project might further increase the influx of people seeking opportunities with the Project. This again would increase the pressure not just on the Project's compensation resources, but also on the socioeconomic situation in general (land, forests, water, etc.). The established cut-off-date should stop or at least limit this potential impact.



376. A second factor are increasing opportunities for the younger generation due to the Project's livelihood programs and infrastructure development, preventing the need to migrate to urban areas for livelihood development. While this might initially also lead to increased pressure on the socioeconomic resources, it will lead to a stronger and innovative development of the local economy and reduce the risk of vulnerable households encompassing only elderly people staying behind, when young people migrate to urban areas.

#### **7.4.2 Influx of Outsiders, including tourism**

377. The impact of the Project on the influx of outsiders, other than the mentioned squatters above, is limited. Different from the construction site, only around 15 staff will be based long-term in 2UR, with a short-term increase during asset registration. These employees with higher salaries will provide business opportunities for locals, but their small number makes them not attractive for camp followers, therefore not expected in this zone. The construction of public infrastructure and 15 houses is also of a scale not relevant for influx of camp followers.
378. Tourism will be an increasing business opportunity for people in the area due to the beautiful landscape and improved access via the Road 1D. The Project has no direct impact on this development; however, via its livelihood programs it can support villagers to gain from tourism and the cultural and health awareness programs will reduce vulnerability to influx of outsiders.

#### **7.4.3 Social Relations**

379. Due to the mutual agreement between PAPs and Project to avoid resettlement, the impact on social relations could be limited. The original plan would have foreseen that significantly impacted households from all three villages would join together in the new resettlement site, while not-significantly impacted people would have stayed in the current villages. This would have significantly altered social relations.
380. Otherwise, the Project has limited impact on social relations. Livelihood development in the area will allow more young people to stay in the villages, reducing the risk of breaking social relations by out-migration to urban areas. Other developments, like road and electricity access, have a much stronger impact, independent from the Project.

#### **7.4.4 Social Disturbances**

381. As with social relations, the risk of increasing social disturbances due to the Project is limited. Active livelihood planning, trials, and cultural awareness trainings will mitigate the risk that livelihood adaptations fail and cash compensation would get extensively used for gambling, alcohol, tobacco or leisure activities

### **7.4.5 Local authorities**

382. Cooperation with local authorities along the livelihood programs and infrastructure development will indirectly increase the capacities of the local authorities, for example in the department of agriculture and forestry. There will be furthermore direct impact via training of health staff. Project-supported students will work afterwards for local public authorities in the area, for example as teachers.

### **7.4.6 Health including Nutrition**

383. The Project will increase the health situation in the area via its Public Health Action Plan outlined in the SDP, consisting of health awareness programs and support of immunization campaigns, training of public health officers, and the repair of the health centre in Ban Piengta. Water supply will furthermore be ensured.
384. An increase in fisheries will support nutrition; as well as a variety of crops, vegetable and livestock activities will do. Impact on rice sufficiency due to loss of paddy fields will be mitigated by a broad livelihood program starting four years before impoundment.

### **7.4.7 Education**

385. Education is a core component of the Project's community as well as livelihood development program, including scholarships and vocational training. Education is the key to successful livelihood adaptation and support requested by the PAPs. The program will strengthen the level of education in the area with positive consequences for social and economic structures. Repaired and upgraded school facilities will furthermore allow an enhanced learning environment.

### **7.4.8 Safety**

386. The increasing availability of cash as well as the consequent increase of non-land based assets would increase the potential risk for theft in the area. However, awareness trainings, investment in education, explanations on safety through bank deposits, and other community development activities will mitigate this risk.

### **7.4.9 Youth**

387. Impact on youth has already been mentioned at several points above. The project will provide livelihood opportunities via its livelihood program as well and above all via its education program. Furthermore, cultural and health awareness programs will prepare the young generation for the changes not just due the project but also due to general developments of the area.

## **7.5 Impact on Access**

### **7.5.1 Access to Public Infrastructure**

388. Existing public infrastructure in 2UR will not be impacted by the Project. However, the Project will support the repair and upgrade of public infrastructure to national standards. This includes school buildings, village halls, and the health centre in Ban Piengta.
389. Additionally the Project will restore access to the right bank side of the river by constructing two suspension bridges allowing people and hand-tractors to pass to the agricultural lands on the opposite side of the villages. Furthermore, an agricultural access road will link the suspension bridge close to Ban Hatsamkhone with agricultural lands of PAPs from Ban Pou. More details can be found in the REDP.

### **7.5.2 Access to Information and Services**

390. There will be no impact on access to information; telecommunication infrastructure is already widely available in the area. The livelihood programs will meanwhile increase access to services, as new shops will open, handicraft skills will be enhanced, and services in the health centre improved.

### **7.5.3 Access to Urban Areas**

391. The major improvement of access to urban areas is the development of the Road D1, constructed independently from the Project. The Project will link to this development and establish bus stops and market booths along the road. The bus stops can be used by villagers to reach buses to urban area. Bus stops and market booths can also reach passengers travelling from one urban area to another; in Laos favourite buyers of small-scale agricultural products in rural areas.

## **7.6 Impact on Gender Issues**

392. As a result of the consultation meetings in 2011, the following gender issues are currently relevant in the zone 2UR:
- Premature births
  - High demand of physical labour including seasonal farming
393. The Project is expected to have few adverse gender-specific impacts, with the exception of the possibility of inadequate nutrition due to unexpected impacts on fisheries and the necessity to adapt to new livelihood activities. This would be of particular concern for pregnant women, women with infants and children, and those infants and children. The Project will make sure that any pregnant or nursing women have adequate health care and are able to receive adequate nutrition, since these are critical to the health of the children. Mitigation measures are integrated into the Gender Action Plan (GAP), outlined in the SDP. Measures to empower women and ensure they benefit from the Project are also

incorporated in the GAP.

### ***7.7 Impact on Ethnic Issues***

394. Just one out of three villages in 2UR has a significant population of an ethnic group, the Hmong community in Ban Pou. They still continue their typical ethnic life style, including swidden or shifting agriculture and hunting, even though they have largely adapted to life in the lowlands including adoption of paddy field cultivation. Also, they value Hmong traditions such as a house style with one storey on the ground and observe Hmong festivals according to their own calendar. In proportion, they are impacted less from land acquisition, as they reside closer to the hills than their Lao Loum neighbours. No cultural resources will be impacted in 2UR. By avoiding resettlement, the Project prevented potential cultural conflicts with people from other villages in 2UR, which are not used to live together with ethnic group people. Livelihood programs developed to mitigate adverse impacts on paddy fields in 2UR will change livelihood activities as outlined above. A cultural-sensitive, community-driven approach will be implemented to avoid lack of ownership and adverse impacts on cultural identities; at the same time supporting sustainability of the Project's livelihood restoration programs.

### ***7.8 Impact on Vulnerability***

395. The Project will have positive and potentially adverse impacts on vulnerable households in 2UR. The development of public infrastructure, including improvement of internal village roads, the construction of bus stops, and repair of health centre and schools will all lead to better access of vulnerable households and thereby improve their integration into local development; as do specific livelihood development programs for PAPs. Land Acquisition and Relocation might put pressure on vulnerable PAPs' livelihood; however, special assistance and vulnerability-sensitive relocation and livelihood programs will mitigate these impacts. Continuing monitoring of vulnerability will be necessary.

## CHAPTER 8 - Social Analysis Lower Reservoir Area

396. There are four affected villages in Zone 2LR: from north to southwest Ban Houaypamom, Ban Sopphuane, Ban, Sopyouak and Ban Namyouak. They are all located in Hom District of Xaysomboune Province about 12 to 25 km upstream from the dam site, which is located in Bolikhan District of Bolikhamxay Province.
397. Through the inundation of the reservoir, all four (4) villages will require resettlement and lose productive land and will require relocation to the selected resettlement sites. To assess the potential impact, a first survey has been conducted in 2011: assessing residential properties and assets; productive lands of the households; as well as common and public properties of the communities were identified. After the cut-off-date, the Confirmation Survey will assess all these assets in detail, and be approved by PAPs and local authorities.

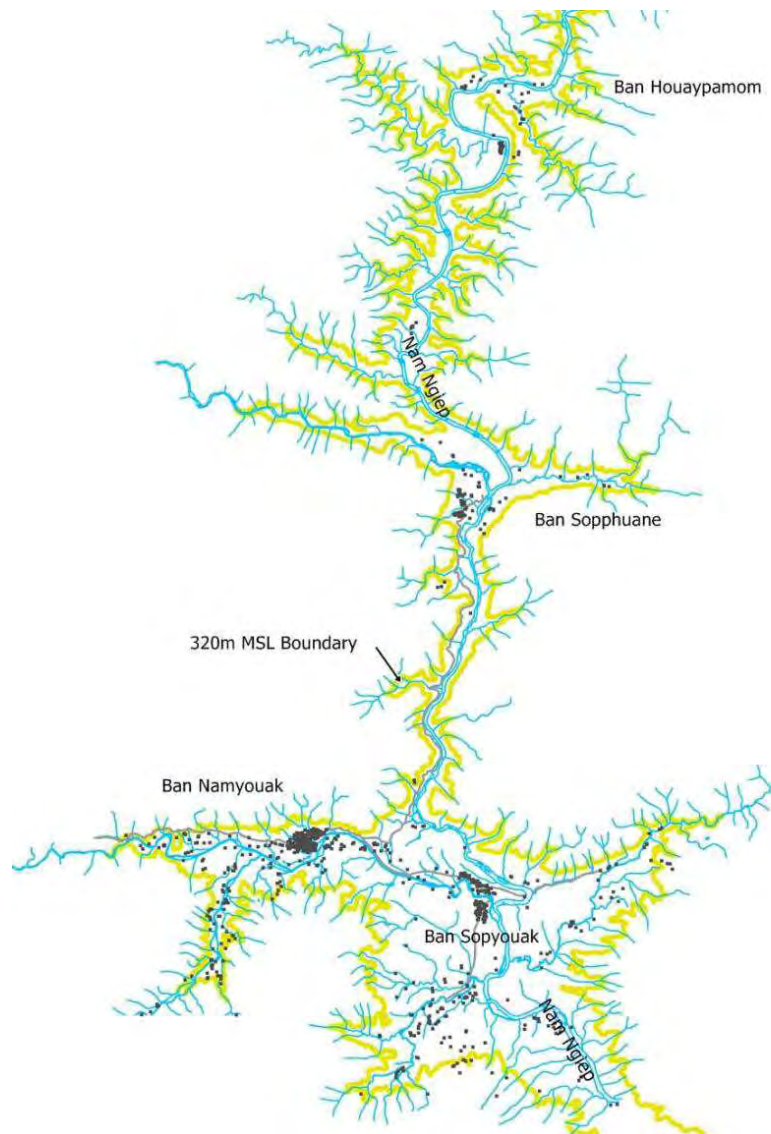


Figure 19: Map of Affected Villages of Zone 2LR

398. With the exception of Houaypamom, located directly in the steep river valley further upstream, the villages of 2LR are located in a plain, surrounded by mountains. Access is difficult: to the north, a half a day long boat ride connects 2LR with Ban Pou in 2UR. Hatsaykham, downstream to the southeast, would be closer, but rapids pose a significant risk to local boats. This leaves as the only access not completely blocked by high mountains the road west towards Phalavaek. Passing several hills, the next small settlement is 10km away and the district town Phalavaek is close to 40km away. Given the existing road conditions, this means around half an hour to the first settlement and 1.5 hours to Phalavaek by car. This makes it difficult for these external villages to access resources in Zone 2LR. Accordingly, no reasonably related impact can be foreseen for these villages outside the plain of 2LR. More details are presented in section 16.1.10.
399. Ban Houaypamom is the most recently settled of the communities in this zone, having been founded in 1996 on the right bank of the Nam Ngiep River. There is no road access to this village. It can only be reached by boat from Ban Sopphuane, a trip that usually takes about an hour. The community migrated to this village from many places, among them Phalavaek, Phou Hua Seua of Xaysomboune Province and a few households from Nong Haet District in Xieng Khouang province.



Figure 20: View of Ban Houaypamom

400. Ban Sopphuane is the oldest of the communities in the lower part of the proposed reservoir. It was established in 1981 on the right bank of Nam Ngiep just below the confluence of the Nam Phuane River. They moved from Ban Nong Tao, also in Xaysomboune Province.
401. Access is by dirt road, which is not passable during the rainy season.
402. Though it was only recently settled, this area played an important role during the Indochina war, particularly from 1960-68. As the Pathet Lao Movement implemented operations of strategic importance, they used this region as a natural land link between the Plateau of Xieng Khouang and the Mekong valley stretching from Vientiane to Bolikhamxay.





Figure 21: View of Ban Sopphuane

403. Officially named Ban Nong, the village is commonly called Ban Sopyouak because of its new location “at the mouth of the Nam Youak” when it was established in the mid-1980s. In 1987, the government built a dirt road into the area, to link Ban Nong to the nearest administrative offices and public services at Phalavaek Sub-district. Villagers who had lived in scattered hamlets were encouraged to consolidate their houses along this track, to give them easier access to basic services such as schooling, health care, and markets.
404. During the dry season, when the Nam Ngiep is low, trucks can cross the river at Ban Sopyouak. From there, they can reach Bolikhamxay province on an old track.



Figure 22: View of Ban Sopyouak

405. Ban Namyouak was established in 1984. It is named after the Nam Youak River, and lies on a terrace along the right bank about 3 km from the confluence with the Nam Ngiep. The people of Ban Namyouak moved from high mountainous area of Phu Samsao, Phu Ngou and Phu Samliem.



Figure 23: View of Ban Namyouak

## 8.1 Socioeconomic Profile

### 8.1.1 Demography and Population Changes

406. From the survey concluded in 2011, the population of Zone 2LR was identified to be 2,735 people in 384 households.

Village Name	HH	Population		Directly Affected		Ethnicity
		People (Total)	People (Fem.)	HH	Population	
<i>Ban Houaypamom</i>	37	254	122	37	254	Hmong
<i>Ban Sopphuane</i>	58	416	206	58	416	Hmong
<i>Ban Sopyouak</i>	126	916	439	126	916	Hmong, Lao
<i>Ban Namyouak</i>	163	1,149	564	163	1,149	Hmong
<b>Total</b>	<b>384</b>	<b>2,735</b>	<b>1,331</b>	<b>384</b>	<b>2,735</b>	

Table 43 Projected Affected People of Zone 2LR (Source; Census in 2011)

Age	Male	%	Female	%	Total	%	M:FRatio
<5	31	24.22	31	25.83	62	25.00	1.0
5-10	23	17.97	19	15.83	42	16.94	1.2
10-15	14	10.94	15	12.50	29	11.69	0.9
16-20	20	15.63	8	6.67	28	11.29	2.5
21-25	6	4.69	14	11.67	20	8.06	0.4
26-30	11	8.59	6	5.00	17	6.85	1.8
31-40	7	5.47	10	8.33	17	6.85	0.7
41-50	7	5.47	11	9.17	18	7.26	0.6
51-60	6	4.69	2	1.67	8	3.23	3.0
>61	3	2.34	4	3.33	7	2.82	0.8
<b>Total</b>	<b>128</b>	<b>100</b>	<b>120</b>	<b>100</b>	<b>248</b>	<b>100.00</b>	

Table 44: Age and Sex Structure of Ban Houaypamom (Source: field survey, 2011)



Age	Male	%	Female	%	Total	%	M:F Ratio
<5	37	18.5	46	20.54	83	19.58	0.8
5-9	29	14.5	47	20.98	76	17.92	0.62
10-15	32	16	27	12.05	59	13.92	1.19
16-20	30	15	23	10.27	53	12.5	1.3
21-25	19	9.5	22	9.82	41	9.67	0.86
26-30	10	5	12	5.36	22	5.19	0.83
31-40	14	7	15	6.7	29	6.84	0.93
41-50	16	8	18	8.04	34	8.02	0.89
51-60	7	3.5	6	2.68	13	3.07	1.17
>61	6	3	8	3.57	14	3.3	0.75
<b>Total</b>	<b>200</b>	<b>100</b>	<b>224</b>	<b>100</b>	<b>424</b>	<b>100</b>	

Table 45: Age and Sex Structure of Ban Sopphuane (Source: Field Survey 2011)

Age	Male	%	Female	%	Total	%	M:F Ratio
<5	81	17.49	72	16.82	153	17.17	1.13
5-10	74	15.98	83	19.39	157	17.62	0.89
10-15	75	16.2	54	12.62	129	14.48	1.39
16-20	60	12.96	54	12.62	114	12.79	1.11
21-25	43	9.29	43	10.05	86	9.65	1
26-30	26	5.62	23	5.37	49	5.5	1.13
31-40	46	9.94	36	8.41	82	9.2	1.28
41-50	32	6.91	31	7.24	63	7.07	1.03
51-60	17	3.67	16	3.74	33	3.7	1.06
>61	9	1.94	16	3.74	25	2.81	0.56
<b>Total</b>	<b>463</b>	<b>100</b>	<b>428</b>	<b>100</b>	<b>891</b>	<b>100</b>	

Table 46: Age and Sex Structure of Ban Sopyouak (Source: Field Survey 2011)

Age	Male	%	Female	%	Total	%	M:F Ratio
<5	103	19.07	100	18.52	203	18.8	1
5-10	109	20.19	105	19.44	214	19.81	1
10-15	70	12.96	68	12.59	138	12.78	1
16-20	50	9.26	60	11.11	110	10.19	0.8
21-25	40	7.41	46	8.52	86	7.96	0.9
26-30	45	8.33	37	6.85	82	7.59	1.2
31-40	45	8.33	45	8.33	90	8.33	1
41-50	41	7.59	32	5.93	73	6.76	1.3
51-60	13	2.41	19	3.52	32	2.96	0.7
>61	24	4.44	28	5.19	52	4.81	0.9
<b>Total</b>	<b>540</b>	<b>100</b>	<b>540</b>	<b>100</b>	<b>1080</b>	<b>100</b>	

Table 47: Age and Sex Structure of Ban Namyouak (Source: Field Survey 2011)

407. Noticed points for the resettlement action plan are considered as follows:

- All households in 2LR zone consist of Hmong with a few Lao Loum in Ban

Sopyouak.

- Over half the population is under age 15; with a balanced ratio of male and female persons
- Among older children, males are slightly more than females.
- Among adults, males and females are almost same number except the age of 21 to 30 and more than 60

408. Villages in 2LR show a population growth in all four villages from the 2007/8 to the 2011 survey, with growth rates between 12.9% in the most remote village of Houaypamom and 36.8% in Sopphuane; the two bigger villages show an even growth of slightly more than 20%; taken together, the average growth rate in 2LR is 21.9% in 4 years. This number will be taken into account to assess the need for infrastructure in the resettlement site.

### 8.1.2 Ethnicity

409. Of all the communities within the project area, those in Zone 2LR are unique in that they are entirely Hmong, with no other ethnic groups represented except Ban Sopyouak.
410. Because all the households in all 4 villages need to be resettled, discussions on ethnic matters and related special considerations are required; they are presented in the Ethnic Development Plan, REDP Chapter 7.

Affected Area	Major Social Group			
	Household	Population	Ethnic Group	Proportion (%)
<i>Ban Houaypamom</i>	37	254	Hmong	100
<i>Ban Sopphuane</i>	58	416	Hmong	100
<i>Ban Sopyouak</i>	126	916	Hmong Lao Loum	97.9 2.1
<i>Ban Namyouak</i>	163	1,149	Hmong	100

Table 48: Ethnicity of Affected People of Zone 2LR (Source: Field Survey 2011)

### 8.1.3 Social Organization and Cultural Relations

411. The analysis of 4.4 on social organisation and cultural relations applies also in 2LR: administrative organization, mass organizations, and a strong focus on families. As discussed there, Hmong households are related via the clan system to PAPs from Z3 and Ban Pou, but also to Hmong representatives on the national level and relatives abroad. Each village has the officially-recognized civil organizations: the Lao Women's Union, Lao Worker's Union, and Lao Youth Union.
412. Participation on mass organizations is outlined in the following table:

Private and Public Organization	Number of members per village			
	<i>Houaypamom</i>	<i>Sopphuane</i>	<i>Sopyouak</i>	<i>Namyouak</i>
Lao Women's Union	45	42	14	33
Lao Youth Union	68	55	30	38
Lao Workers' Union	66	20	8	23

Table 49: Membership in Mass Organizations in Zone 2LR (Source: Field Survey 2008)

### 8.1.4 Infrastructure

Items	Village			
	<i>Houaypamom</i>	<i>Sopphuane</i>	<i>Sopyouak</i>	<i>Namyouak</i>
<b>1. Infrastructure service</b>				
Electricity	Pico-hydro and Solar Power			
Drinking water source Quantity/Quality	Nam Ngiep Nam Noi	Water Pipe Nam Ngiep Houay Phuane	Water Pipes Nam Ngiep Nam Youak	Water Pipe Nam Ngiep Nam Youak
Water use source Quantity/Quality	Water Pipes Nam Ngiep Nam Noi	Water Pipe Nam Ngiep Houay Phuane	Underground water Water Pipe Nam Ngiep / Nam Youak	Water Pipe Nam Ngiep Nam Youak
Transportation	Road access via a laterite road from Hom District via Phalavaek. Troublesome during wet season Waterway is limited within the vicinity because of islets and rapids			
<b>2. Social Welfare</b>				
Pre Primary	NA			
Primary School	-	1	1	1
Secondary School	-	-	-	1
Temple	NA			
Health Centre	-	-	1	-
Hospital	NA			
Pharmacy	NA			
Cemetery	1	1	1	1
Grocery	2	2	Available - not specified number	Available - not specified number

Table 50: Infrastructure Facilities and Services in Zone 2LR (Source: Field Survey 2008)

413. As in most of rural Lao PDR, the infrastructure of the villages of Zone 2LR is limited.
414. Drinking water comes from simple gravity flow water systems from mountain streams or from wells. Water for other domestic uses is from the Nam Ngiep or its tributaries with associated water quality issues, or from wells. Sufficient water is not available throughout the year.
415. The main road access is a laterite road from Hom District via Ban Phalavaek. It is covered with gravel but is not passable during most of the rainy season. The lanes and paths within the villages are dirt, and these become quite muddy in wet season. Their main waterway for transportation is the Nam Ngiep River, though parts of the river are difficult to travel because of rapids and rock outcrops in the rivers.
416. 3 of the villages have primary schools - only Ban Houaypamom does not have a school building. Ban Namyouak also has a lower secondary school. Ban Sopyouak has a health centre which is fairly easily accessed by the people Ban Namyouak as well. None of the communities have temples or pharmacies. None are served by the national electricity grid,

but individual electricity production via pico-hydro or solar power is present; the latter supported by the Project.

417. All have small groceries, like elsewhere in rural Lao PDR, small rooms or add-ons at people's houses where they sell soaps, shampoos and detergents, toothpaste, and a variety of packaged and canned goods. Each community has more than one of these.

### 8.1.5 School Attendance

418. The primary schools at both Ban Sopyouak and Ban Namyouak are well established and relatively well supplied. Though there is also a lower secondary school at Ban Namyouak, teaching supplies and materials are insufficient.
419. Ban Houaypamom does not have a school building. Children from there have to go to the school at Ban Sopphuane some 6 km away by boat. The school at Ban Sopphuane is not adequate, with relatively poor construction and insufficient materials and supplies. Accordingly, school attendance rates are low.

### 8.1.6 Literacy

420. About 30 % of the villagers in the two smaller communities, Houaypamom and Sopphuane, have not completed primary education. In the later communities, a high number of people in these 2 villages have been able to complete their primary education and many people in these communities have continued to secondary education and some even to tertiary education.
421. These communities still have high levels of illiteracy and of functional illiteracy (those who attended school but who can barely read or write). This is an important aspect of social development, since education is often linked to improved health and better opportunities for livelihood development. There is considerable potential for adult education among these villagers, and this will be given priority for the social programs in the resettlement sites, since literacy is often a foundation for further development.

Items	Village							
	<i>Houaypamom</i>		<i>Sopphuane</i>		<i>Sopyouak</i>		<i>Namyouak</i>	
Population (people)	254		416		916		1,149	
Female	122		206		439		564	
Male	132		210		477		585	
<b>Education</b>		%		%		%		%
No Formal Education	39	26.17	102	35.05	48	9.06	245	28.46
Primary School	86	57.72	120	41.24	257	48.49	388	45.06
Secondary and High School	23	15.44	65	22.34	207	39.05	199	23.11
University	1	0.67	4	1.37	18	3.40	29	3.37

Table 51: Formal Education Profile of 2LR (Source: Field Survey 2011)

### 8.1.7 Health

422. Most of the people in these 4 villages practice animism, so whenever anyone gets sick or has other health problems, they first seek treatment by traditional animist practices or medicines. There is only one health centre at Ban Sopyouak. Those with more serious health conditions have to travel to the district centre at Ban Lonxan in Hom district, where there is a district hospital, or to a major hospital at Vientiane. This trip takes several hours by car and during rainy season this road gets impassable.
423. The main health problems reported were malaria, diarrhoea, dysentery, and acute respiratory infections. The primary communicable diseases are seasonal and temperature-dependent with the levels of rainfall and humidity. Residents also experience injuries from accidents associated with traditional slash and burn agriculture method, which typically occur every year since all households rely on this kind of crop cultivation.

Village	Number of people								
	<i>Malaria</i>	<i>ARI</i>	<i>Diarrhoea</i>	<i>Cholera</i>	<i>Dysentery</i>	<i>Skin disease</i>	<i>Eye disease</i>	<i>Dengue fever</i>	<i>Parasites</i>
Houaypamom	7	11	9	0	7	1	0	0	-
Sopphuane	9	15	13	0	11	1	0	0	-
Sopyouak	18	24	17	0	23	3	0	0	-
Namyouak	12	18	21	0	20	2	0	0	-

Table 52: Infectious Diseases Found in the Surveyed Villages in Zone 2LR (Source: Field Survey 2008)

### 8.1.8 Gender Issues and Status of Women

424. As a result of consultation meetings in 2011, the following gender issues are relevant in the zone 2LR:
- Premature births
  - High demand of physical labour including seasonal farming
  - No schooling opportunity due to poor conditions of schooling (building, materials, etc.)
  - No income generating activities
  - Lack in gender-equality regarding tenure rights regarding assets

### 8.1.9 Information and Services

425. Access to Information and Services in 2LR is limited and at the lower end in comparison to the other villages described in the REDP. Phone connection is just possible via long antenna to a single national provider. DVD shops in the villages highlight, that information flow can overcome these barriers. Personal communication and out-migration with the related social relations allow information flow and representatives on the national level are closely involved in information exchange, including information regarding the Project.

426. Other services are limited, even though small grocery shops are available and a trader in Sopyouak provides transport to the other areas as well as gasoline for the villagers of 2LR. Many motorcycles can be observed in the villages, allowing small-scale transport to the town of Phalavaek and further.

### 8.1.10 Agriculture and Horticulture Land Use

427. The land ownership and land use of the four villages in Zone 2LR are presented in Table 53. Privately held lands account for 36.4 % of the total land area of the communities. These privately held lands are almost all agricultural. About 10 % of the privately held lands in all four communities are paddy fields. 11.4 % of the privately held lands are upland rice fields, and 24.8 % of the privately held lands are other cultivated areas.
428. All 4 villages have some common properties. Although Houaypamom does not yet have a school, it does have land set aside for one. All 4 have cemetery lands. All 4 villages also have community grasslands.
429. In all 4 communities, 56 % of the total forest land is community managed production forest, with the largest proportion of such forest in Ban Sopyouak and Namyouak, (nearly 64% in both); community managed reserved forest accounts 20% of the total forest area.

Item	Village				Total
	Sopphuane	Sopyouak	Namyouak	Houaypamom	
<b>1.Private properties</b>					
1.1 Resident area	5.69	14.75	17.83	5.84	44.11
1.2 Paddy fields	38.91	111.59	89.82	24.17	264.49
1.3 Upland rice fields	49.16	89.34	146.17	28.48	313.15
1.4 Other cultivated land	34.63	475.92	137.75	31.41	679.71
1.5 Fish Ponds (ha)	0.09	1.14	1.49	0	2.72
1.6 Other land uses	162.48	492.66	712.88	64.16	1432.18
<b>Total Private Land</b>	<b>290.96</b>	<b>1,185.40</b>	<b>1,105.94</b>	<b>154.06</b>	<b>2736.36</b>

Table 53: Land Use Patterns of Villages in Zone 2LR, in ha. (Source: Field Survey 2011)

Item	Village				Total
	Sopphuane	Sopyouak	Namyouak	Houaypamom	
<b>2.PublicProperties</b>					
2.1 School Land	0.8	1.2	1.6	0.5	4.1
2.2 Temple Land	0.0	0.0	0.0	0.0	0
2.3 Village Office Land	0.0	0.0	0.0	0.0	0
2.4 Cemetery Land	1.9	3.6	3.5	1.5	10.5
2.5 Village Health Centre Land	0	0	0	0	0
2.6 Community Grass Land	24.0	125.0	97.0	17.0	263
Total Public Land	26.7	129.8	102.1	19.0	277.6
<b>3. Forest and others</b>					

Item	Village				Total
	Sopphuane	Sopyouak	Namyouak	Houaypamom	
3.1 Community Managed production forest	483.0	750.0	852.0	425.0	2,510.0
3.2 Community Managed reserved forest	126.0	311.0	336.0	121.0	894.0
3.3 Other forest					
Protection Forest					
Un-stocked forest	104.0	210.0	218.0	81.0	613.0
Buffer zone	39.0	198.0	210.0	30.0	477.0
Total Forest Land	752.0	1,469.0	1,616.0	657.0	4,494.0
<b>Total Land</b>					<b>7,507.96</b>

Table 54: Land Use Patterns of Villages in Zone 2LR, in ha. (Source: Field Survey 2008)

430. Agriculture land use in the proposed project area is currently based primarily upon rain fed rice cultivation, other field crop cultivation, livestock rearing and vegetable gardens. The size of family land holdings varies from about 1 to 3.5 ha, with the majority having less than 0.8 ha except Ban Sopyouak. Holdings in Sopyouak tend to be larger than in the other communities.

Items	Village			
	Houaypamom	Sopphuane	Sopyouak	Namyouak
1. < 0.8ha.	18	21	30	82
2. 0.8–1.6ha.	11	2	35	25
3. 1.7–2.4ha.	5	7	21	9
4. Morethan2.4ha.	2	5	25	2

Table 55: Size of Land Holding of Households in Zone 2LR (Source: Field Survey 2008)

431. Table 56 presents the area of rice cultivation in each community, by each type of rice field: paddy and swidden or upland fields. The ratio of paddy fields to upland rice fields tend to be about 1 to 1 in Ban in Houaypamom, 3 to 4 in Ban Sopphuane, 4 to 3 in Ban Sopyouak and 2 to 3 in Ban Namyouak.

Village Name	Paddy Field Cultivation (ha)	Paddy Field/Overall Cultivation Area (%)	Rice Cultivation (ha)	Swidden Field/Overall Cultivation Area (%)
1. Houaypamom	24.17	28.8	28.48	33.5
2. Sopphuane	38.91	31.7	49.16	40.1
3. Sopyouak	111.59	16.5	89.34	13.2
4. Namyouak	89.82	24.0	146.17	39.1

Table 56: Area of Rice Cultivation of each Type and Area of Rice Cultivation in Comparison to Other Agricultural Activities (Source: Field Survey 2011)

432. The average yields for rice range from a low of 2.1 ton/ha for upland rice in swidden fields in Ban Sopphuane to a high of 3.8 ton/ha for lowland rice in paddy fields in Ban

Houaypamom. Differences in yields among the communities are rather slight.

Village	Paddy Cultivation (ton/ha)	Swidden Cultivation (ton/ha)
Houaypamom	2.6 - 3.8	2.3 - 2.7
Sopphuane	2.4 - 3.7	2.1 - 2.7
Sopyouak	2.9 - 3.6	2.2 - 3.1
Namyouak	2.8 - 3.5	2.4 - 3.0
Average	2.7 - 3.7	2.2 - 2.9

Table 57: Comparison Yield of Rice Production (Source: Field Survey 2008)

### 8.1.11 Rice Sufficiency

433. Most households are able to produce enough rice to meet their needs for the year. Between 3 to 14% of the villagers have shortfalls of rice for up to 2 to 4 months of the year, as shown in Table 58 below. Those households will either buy or exchange in kind the additional rice they need.

Village	Number of Households	Sufficient Year Round	Insufficient for 2 to 4 months	Insufficient for 5 to 6 months	Insufficient for 7 to 8 months
Houaypamom	37	86.5%	13.5%	0%	0%
Sopphuane	58	87.9%	8.6%	3.44%	0%
Sopyouak	126	94.4%	3.2%	0%	2.38%
Namyouak	163	92.6%	7.4%	0%	0%

Table 58: Rice Sufficiency Production Rates of Households on a Yearly Basis (Source: Field Survey 2011)

434. Considering the numbers above, most people in 2UR have enough rice to eat year-round, with only about 5-10% having to compensate for 2-4 months; above all in the most remote village, Houaypamom. As with households in 2UR, the Project will make a qualitative analysis of all of these households to understand how rice insecurity is linked to food insecurity. In the resettlement site, food insecurity will not be an issue for the first years due to the planned Rice Supplement Program, but information on food insecurity will outline the households for which livelihood development might be especially difficult.

### 8.1.12 Other Sources of Income

435. The residents of these communities have traditionally had a mixed economy of cultivating rice and food crops, fishing, raising livestock, hunting for meat and gathering NTFPs – all primarily for household use. Handicrafts and wage labour are relatively minor sources of income in all 3 of these communities. The household survey 2014 will furthermore assess, if remittances are an important source of income, also an indicator of social relations outside the Project area are strong.



### **8.1.13 Livestock**

436. Livestock raising is an important form of income for villagers from 2LR. The 2011 survey assessed around 3000 large livestock in the area. Cattles are not just a major economic factor but also a cultural factor for the Hmong communities. The Project will assess details in its livestock program, including a refinement of the assessed carrying capacity of the resettlement site and potentials to develop further areas if grazing areas are requested during the PLUP. A bull-fighting area in the resettlement site will be provided.

### **8.1.14 Forest Utilization**

437. NTFP collection is an important form of income. They are carried by the households to Sopyouak and Namyouak, wherein traders collect the NTFPs at a central collection spot to bring them to markets outside the area.
438. Recent satellite images show logging in the area, with timber stored outside the villages and logging tracks connecting the access road with the nearby forests.

### **8.1.15 Hunting**

439. Hunting in 2LR is a continuing livelihood activity and the local shops sell ammunition for small guns. While it will be possible for 2LR hunters to return to not inundated forests of 2LR crossing the mountain next to the resettlement site, within the new resettlement site and above all over the river on the side of the host communities, hunting has to be regulated to avoid resource conflicts. As stated before, the Project's Code of Conduct explicitly denies workers from outside the right to hunt in the construction and nearby resettlement area.

### **8.1.16 Fisheries**

440. Residents catch fish mainly for household consumption, with occasional surpluses being sold in local markets alongside the roadside or sold to neighbours. Villagers requested continuing access to the fisheries in the Nam Ngiep and in the reservoir. The Project will implement a fish-catch and fisheries-co-management program to organize sustainable and localized fisheries.

### **8.1.17 Other Sources of Cash Income**

### **8.1.18 Imputed Income**

441. The Project recognized during field trips that imputed income is an important factor for rural households in 2LR and will integrate respective assessments into the legal baseline study 2014. With limited market access it is expected that the imputed income in 2LR still encompasses a large portion of total income.

### 8.1.19 Cash Income

442. Table 59 presents the average yearly household income of four villages in this zone and shows the importance of livestock raising and NTFP products in generating cash income. Handicrafts and wage labour are relatively minor sources of income in all 3 of these communities.

Village	Houaypamom		Sopphuane		Sopyouak		Namyouak	
	Average Income (LAK/Yr)	%	Average Income (LAK/Yr)	%	Average Income (LAK/Yr)	%	Average Income (LAK/Yr)	%
1. Rice production	340,541	4.1	270,345	7.0	1,254,413	11.8	428,839	5.5
2. Livestock	924,595	11.0	1,279,310	33.2	3,839,198	36.2	2,798,000	36.1
3. Plantation tree	0	0.0	0	0.0	29,762	0.3	226,810	2.9
4. Fishery	1,572,973	18.8	348,276	9.0	797,619	7.5	398,650	5.1
5. Vegetable	1,439,189	17.2	279,828	7.3	401,603	3.8	1,093,687	14.1
6. Non Timber Forest Products (NTFPs)	3,191,892	38.1	763,793	19.8	2,982,937	28.1	809,399	10.4
7. Wages	259,459	3.1	317,241	8.2	666,667	6.3	204,294	2.6
8. Other	648,649	7.7	596,552	15.5	640,079	6.0	1,802,025	23.2
<b>Total</b>	<b>8,377,298</b>	<b>100</b>	<b>3,855,345</b>	<b>100</b>	<b>10,612,278</b>	<b>100</b>	<b>7,761,704</b>	<b>100</b>

Table 59: Annual Household Cash Income of Affected People of Zone 2LR (Source: Field Survey 2011)

443. The cash income of the villagers of Zone 2LR is lower than those in other areas of the project at or upstream from the dam site, at around 4-10.6 million Kip (500 - 800 USD) /household per year.

### 8.1.20 Total Income

444. A total number will be presented in the updated REDP after conducting the 2014 Baseline Survey. It is expected that total income exceeds the cash income assessed during the 2011 survey, which corresponds to the household expenditures, outlined in the next section.

### 8.1.21 Household Expenditure

445. The expenditures of the population were mainly for investment in agricultural materials and tools and for living expenses such as food, clothes, and education for their children. As shown in Table 60, most villagers in Houaypamom spend less than 500,000 kip per year on expenses for production, while the largest number of households in all the other communities spends between 1 and less than 5 million kip per year, with most of the rest of the households spending less than 1 million kip.
446. With the exception of Sopphuane, where a majority of households reported living expenses of less than 500,000 kip, most households spend between 1 and less than 5 million kip per year on various living expenses. Another significant number of households spent between

5 and less than 10 million kip per year on their living expenses.

447. A number of households in Sopyouak and Namyouak reported debts (mostly borrowed from friends, neighbour, or relatives). Mostly in Namyouak, the reasons were due to illness, renovating their houses, and for agricultural or other production investments.

Detail	Houaypamom		Sopphuane		Sopyouak		Namyouak	
	No.	%	No.	%	No.	%	No.	%
Expenses on making a living								
Less than 500,000 Kip	19	51.35	11	23.40	26	23.01	25	20.00
500,000-999,999 Kip	9	24.32	2	4.26	30	26.55	33	26.40
1,000,000-4,999,999 Kip	9	24.3	21	44.68	44	38.94	59	47.20
5,000,000-9,999,999 Kip	-	-	9	19.15	4	3.54	8	6.40
More than 10,000,000 Kip	-	-	4	8.51	5	4.42	-	-
Living expenses								
Less than 500,000 Kip	2	5.41	25	53.19	8	7.08	2	1.60
500,000-999,999 Kip	2	5.41	6	12.77	-	-	3	2.40
1,000,000-4,999,999 Kip	18	48.65	13	27.66	67	59.25	64	51.20
5,000,000-9,999,999 Kip	9	24.32	1	2.13	22	19.47	39	31.20
More than 10,000,000 Kip	6	16.22	2	4.26	16	14.16	17	13.60
Household expense/year								
1,000,000-4,999,999 Kip	21	56.76	30	63.83	63	55.75	50	40.00
5,000,000-9,999,999 Kip	10	27.03	11	23.40	23	20.35	52	41.60
10,000,000-14,999,999 Kip	5	13.51	3	6.38	12	10.62	11	8.80
More than 15,000,000 Kip	6	16.22	2	4.26	16	14.16	17	13.60
Cause of Debt								
Investment	-	-	-	-	4	10.81	2	10.00
House renovation	-	-	-	-	1	2.70	4	20.00
Illness	-	-	-	-	2	5.41	6	30.00
Other reasons / Did not tell	1	100.00	-	-	30	81.08	8	40.00

Table 60: Annual Household Expenditures of Affected People in Zone 2LR (Source: Field Survey 2008)

### 8.1.22 Poverty

448. The Project used in 2LR rice insufficiency as a proxy for poverty. Considering the numbers above, between 3% and 14% of people in the individual villages in 2LR are potentially vulnerable regarding food insecurity. The Project will make a qualitative analysis of all of these households to understand, how rice insecurity is linked to food insecurity; this should reduce the numbers, as some people have alternatives to rice consumption via purchases. Furthermore, the 2014 baseline survey will include more differentiated indicators, including imputed income data, to assess poverty in the area.

### 8.1.23 Vulnerability

449. Furthermore, in each village there are vulnerable households as outlined in Table 61. While

they overlap with poor households, special attention has to be paid to the specific kinds of vulnerability, either regarding extended transitional assistance, alternative livelihood options, and/or health support.

Zone	2LR				
	<i>Sopyouak</i>	<i>Namyouak</i>	<i>Sopphuane</i>	<i>Houaypamom</i>	<i>Total</i>
1. Head of household is woman	5	1	1	0	7
2. Head of household is over 60	15	14	3	2	34
3. Head of household is under 16	0	0	0	0	0
4. Head of household is disabled	3	8	3	5	19
5. Household with disable person	14	15	8	2	39
6. Head of house hold is mentally disabled	4	0	1	2	7
7. Household with mentally disabled person	8	1	1	0	10
8. Household with only one member	0	1	0	0	1
9. Household with ethnic different from main group in the community	3	1	0	1	5
10. Households living below the poverty line	11	18	11	7	47
11. Landless households with no alternative sustainable income	0	0	0	0	0

Table 61: Potential Vulnerable Household of Zone 2LR (Source: Field Visit 2013)

## 8.2 Land Acquisition and Resettlement Impacts

450. Inundation of the reservoir in NNP 1 at 320m MSL will cause the loss of all the residential and productive lands in the 4 villages of Zone 2LR. Ban Houaypamom, Ban Sopphuane, Ban Sopyouak and Ban Namyouak will end up about 50-70 meters under water. It will be necessary to resettle the residents of these communities, i.e. a total of 384 households and 2,735 affected people. The designated resettlement site for these four villages is Houaysoup in Bolikhan District, Bolikhamxay Province. Details on land acquisition and resettlement are described in the REDP.

### 1) Ban Houaypamom

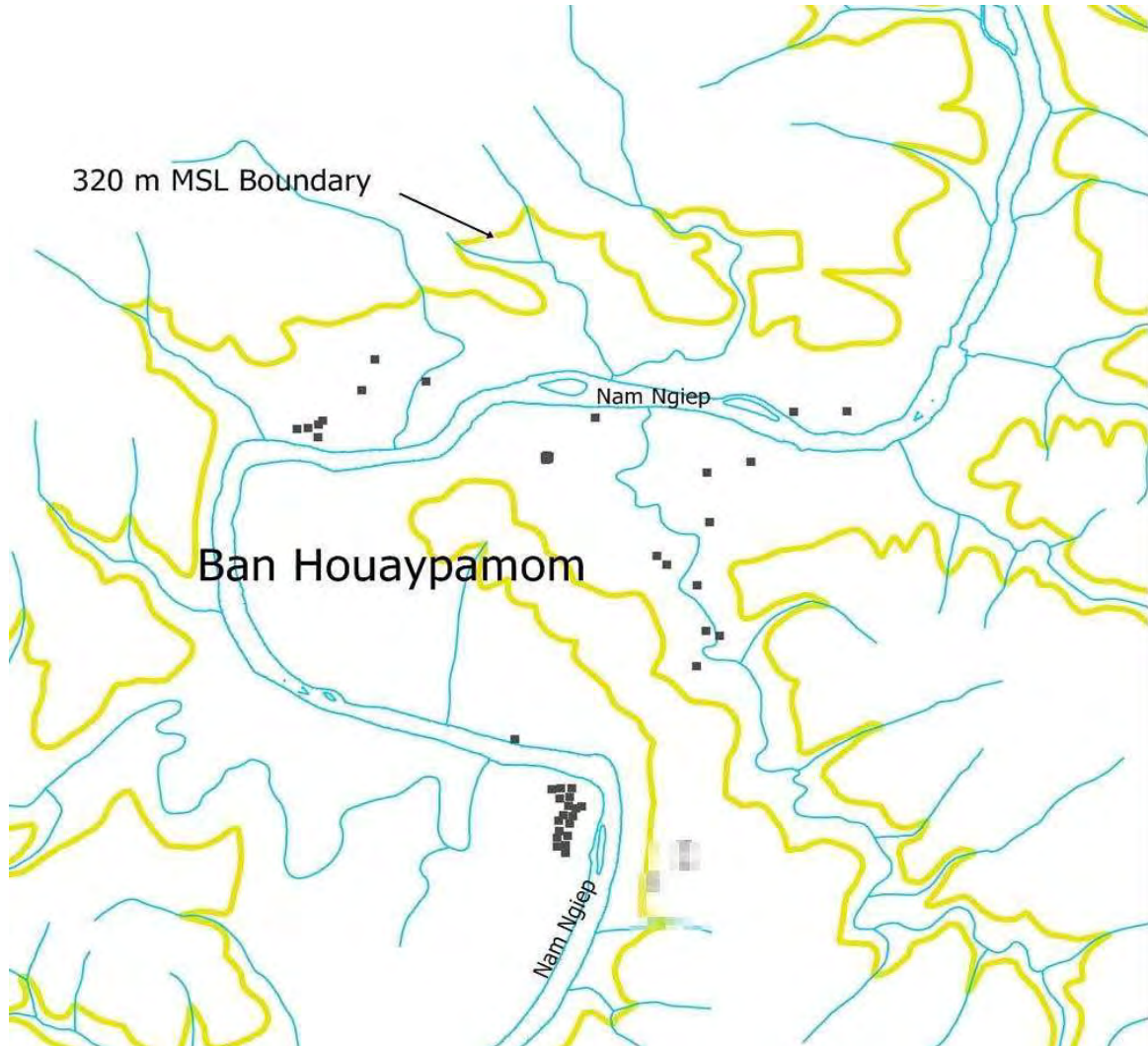


Figure 24: Map of Affected Area of Ban Houaypamom

## 2) Ban Sopphuane

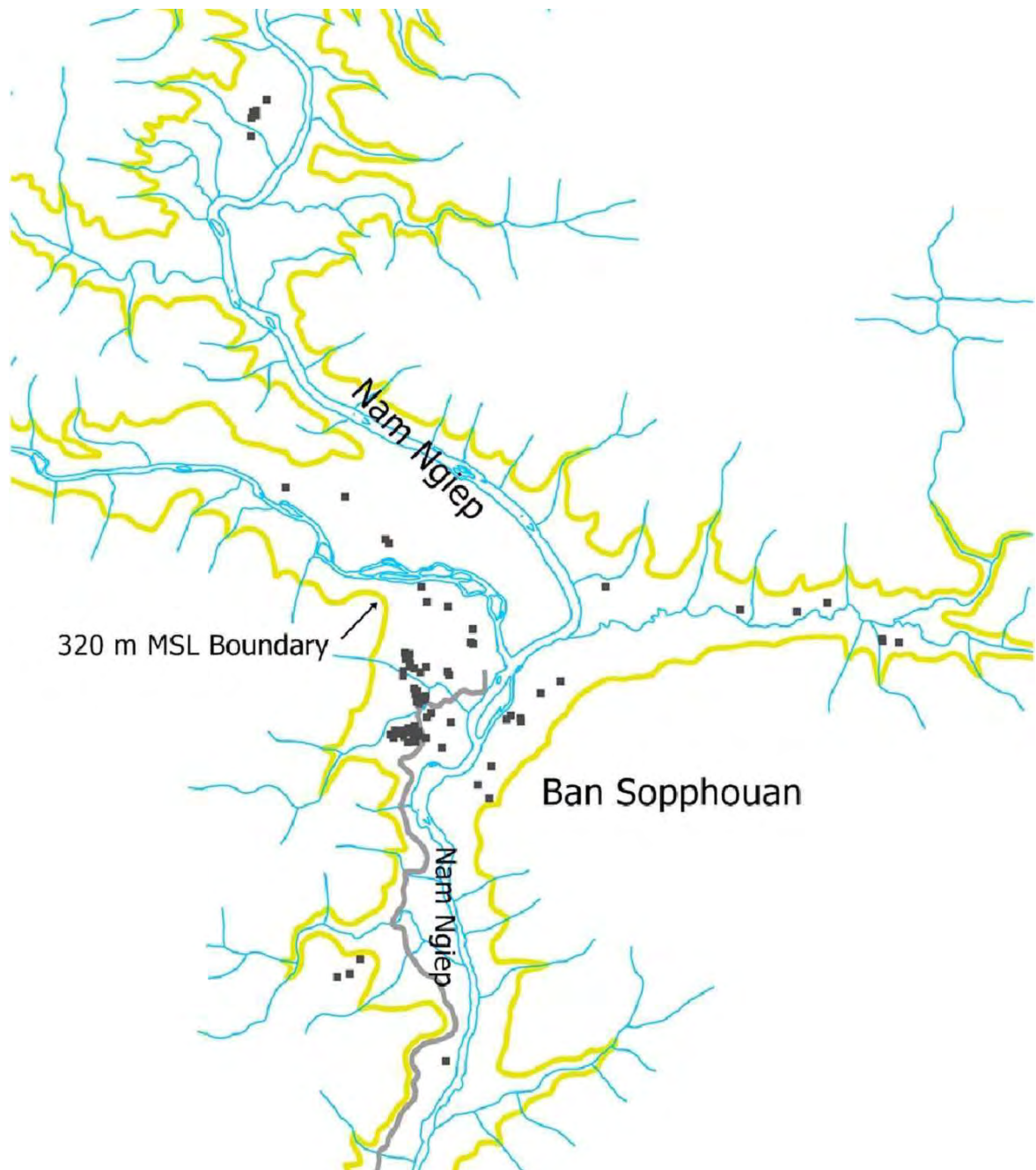


Figure 25: Map of Affected Area of Ban Sopphuane



### 3) Ban Sopyouak and Ban Namyouak

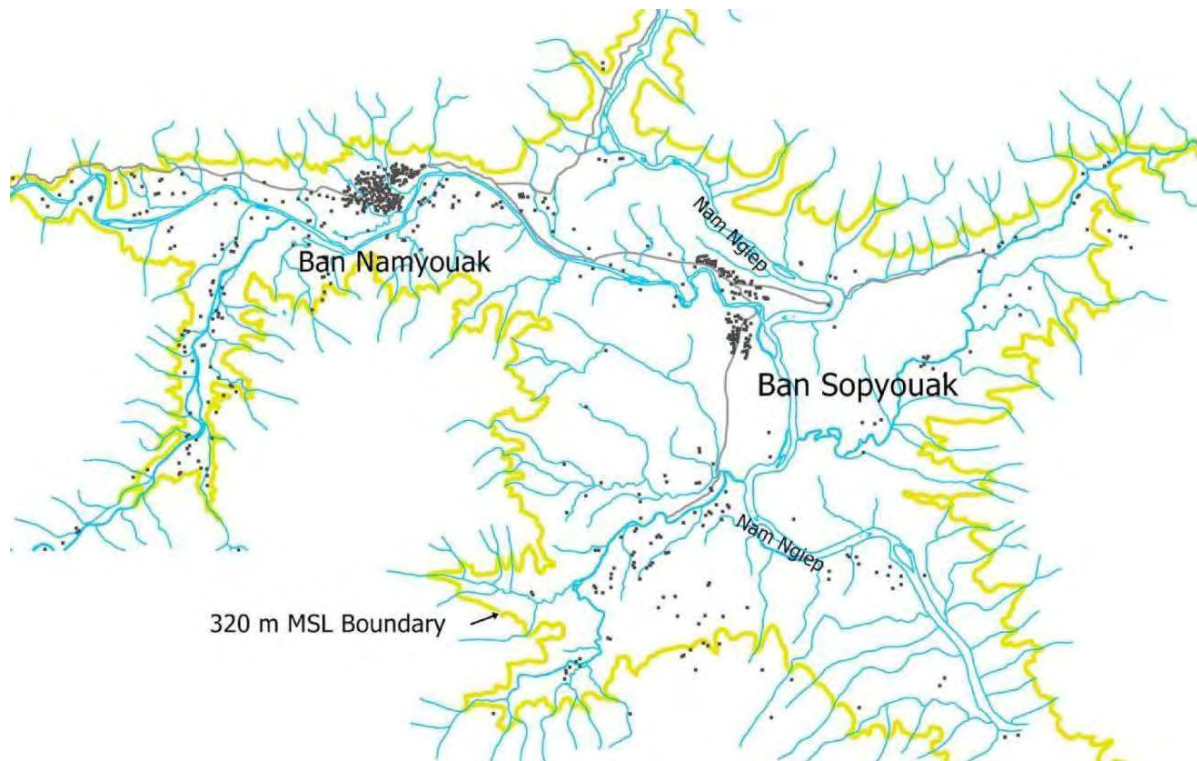


Figure 26: Map of Affected Area of Ban Sopyouak and Ban Namyouak

451. The inundation of the NNP1 reservoir will cause the loss of all 384 household plots in the 4 villages in 2LR. Thus, all of the houses will be lost and so will be all other structures in 2LR. All agricultural land in 2LR will be lost due to inundation as the villages are located far below the reservoir's Full Supply Level. Only some rubber plantations have been cultivated above Full Supply Level. The Project will restore access to these plantations. It should be noted that some households own land in other villages nearby which will not be affected by the Project. The Confirmation Survey will identify the broader scope of land use and ownership household-by-household, as this will influence subsequent compensation choices as well as livelihood restoration assistance required.
452. Next to private land, community resources will be lost due to inundation, including 3 schools, village halls, and a health centre. The resettlement site will have to provide this entire infrastructure on the same, but at least on national standards. Appropriate ceremonies will be conducted for the re-siting of spirits of deceased villagers.
453. Remaining forests will afterwards be part of the Watershed Management Area with restriction on forest utilization. An exception will be the continuing use of currently cultivated plantations above Full Supply Level.
454. In addition to any compensation for the loss of these lands and other resources (as fruit and production trees) in cash and/or in kind, the Project will initiate changes to resource utilization patterns that can provide people with stable and sustainable livelihoods described in the REDP.

### ***8.3 Impacts on Livelihood Activities***

455. Impacts on Income and Livelihood will be fundamental as new livelihoods have to be developed in the resettlement area with different opportunities and constraints from current locations.

#### **8.3.1 Cultivation**

456. As outlined above, while Hmong are traditionally upland rice cultivators, villages of 2LR have been cultivating paddy rice fields since three decades. Nonetheless, several changes face the PAPs in the new resettlement site. The paddy rice field areas in the resettlement site will be newly established and it will take 3 to 4 years, until the yield will stabilize. The Project starts land development and soil improvement two years before the arrival of the PAPs; additionally, a five-year rice supplement program will be provided starting from physical relocation.

457. Secondly, paddy rice cultivation techniques will be improved, linking to existing methods in the current villages:

- PAPs have the possibility to use an irrigation system, provided by the Project; a learning process how to operate and maintain the irrigation system will be necessary. Also, dry-season rice cultivation has to be balanced with existing livelihood activities during that season.
- Organic fertilizers can improve the yield without costly external inputs; techniques and skills will be developed.
- Varieties of seeds will be tested to find seeds matching with the conditions of the rice fields in the resettlement site

458. The Project will start livelihood programs already 2.5 years before physical relocation, with a focus on joint trials in the current villages. This will allow a gradual development of techniques and smooth the impact of physical relocation. Complementing the already operating demonstration farm, the trials should convince the PAPs about the feasibility and sustainability of adapted rice cultivation techniques.

459. Next to rice cultivation, cash crop cultivation will become more prominent, as the resettlement site offers easier access to markets for cash crops. Villagers of 2LR are in general familiar with market production of agricultural products, as they engage currently in rubber plantations. Nonetheless, training will be necessary to understand the cultivation of specific crops, but also to understand market structures for these crops; including risks of volatile market prices for cash crops.

#### **8.3.2 Livestock**

460. Similar than crop cultivation, livestock development will be supported by the Project's livelihood programs with trials on type of livestock and techniques of raising and breeding of livestock. The Project has made an initial estimate that 3600 units of large livestock can be accommodated by 600ha of pasture prepared for the PAPs. Further land might be developed by PAPs based on the outcomes of Participatory Land Use Planning in the Resettlement Site (PLUP).



461. PAPs and Project have to take into account the needs and risks of intensified livestock raising. Livestock raising is a preferential livelihood option expressed by the PAPs. With an increase of livestock numbers, the availability of fodder and pasture will have to be assessed and value chains considered during the implementation of specific activities.
462. Also, monitoring of livestock health and the availability of veterinary services will be essential. A vaccination program will be an appropriate insurance for a healthy start at the resettlement site.
463. A further, specific element for 2LR is the necessity to transport livestock and the risks associated with it; the Project will fund and organize the transport together with the PAPs.

### **8.3.3 Forest Utilization**

464. Resettlement will not just lead to new paddy field and pasture land, but also to new forests within community boundaries; these forests might at the beginning be unfamiliar to the people and it will take time until PAPs will comprehend the characteristics of the new area and know for example where to find specific NTFPs.
465. Access to previous forests will be limited due to the reservoir. Nonetheless, as the original settlement area is reachable from the designated resettlement site via motorbike in less than an hour, continued access to some parts of the original forests will be possible.
466. In the new resettlement site of 6,000ha, large forest areas are included. While the host communities give up their use rights on these lands, PAPs of 2LR will be asked by the host communities to respect their use rights on forest land on the left-bank side of the Nam Ngiep.
467. A fourth impact regards the existing rubber plantations above full supply level. Continued access to these privately held plantations will be possible over the reservoir. However, these plantations will form part of the Nam Ngiep watershed and accordingly part of the WMP, restricting the further expansion of plantation as well as the use of toxic inputs (fertilizers, pesticides). Ways of transport will have to change, as access will be possible just by boat; however, from Houaysoup it will then be a shorter distance to markets, reducing transport costs.

### **8.3.4 Fisheries**

468. While land is clearly divided between host communities and resettlement site by the Nam Ngiep River, fisheries have to be shared between host communities and resettlers. A Fisheries Co-Management Program will be implemented.
469. The PAPs will have access to the reservoir, which offers as discussed for 2UR, potentials in fisheries. After an expected early increase in windfall fishing on the reservoir, reservoir management will allow subsequent sustainable fisheries.
470. Fishing in the reservoir will be different from fishing in the river, with different kind of gears and techniques necessary, including the necessity to use boats. Livelihood activities will take this into account.

471. A concern for PAPs is the influx of outsiders to the reservoir via the access road linking the current villages to the district towns of Xaysomboun Province, even though the next villages along the road in Hom district are more than an hour drive away.

### **8.3.5 Other Livelihood Activities including Business and Employment**

472. PAPs will have the opportunity to engage in off-farm activities to make use of the improved access to markets via the access road towards Bolikhan and Pakxan, as well as electricity and telecommunication provided in the resettlement site. This will be an important aspect of livelihood adaptation; above all for young people who expressed their aspiration for non-agricultural livelihood options.
473. Livelihood programs will train people not just in skills for new or enhanced professional activities, but also in the necessary additional qualifications and pre-requisites for successful and sustainable employment and business development, such as marketing support and microfinance options for business ideas.
474. In 2LR, the Project will offer employment opportunities, even though limited. Further project employment opportunities will be available in the resettlement site and at the power house. These opportunities request skilled labour, for example technicians. For one year, from 2017 to 2018, people will be able to access the construction site and work as labourers, even though just late in the construction process. Project employment can increase livelihood incomes for a period of time and the skills deriving from this experience can be used for alternative livelihood opportunities later on.

### **8.3.6 Tenure Security**

475. The Project will provide land titles for privately held land in Houaysoup, as well as for community lands, increasing tenure security for the impacted PAPs. Close to the dam site no other development projects will be located, ensuring that the resettlement site will be permanently in the hand of resettlers; with future involuntary resettlement impacts from other projects highly unlikely.

### **8.3.7 Expenditure patterns**

476. Like in 2UR, the above outlined changes in livelihood activities will lead to stronger market economy integration, including increasing availability of cash. While the improved income levels will lead to a quantitative increase of expenditure, this will likewise lead to a qualitative change of expenditure patterns. Expenditure decisions become essential for the sustainability of household livelihoods. Family financial training offered by the Project will enable households to understand these changes and it will highlight the necessity that long-term investments balance short term consumption. Livelihood trainings will furthermore integrate potential risks into their curricula.

## **8.4 Impact on Social Structures**

### **8.4.1 Population profile**

477. While in-migration will be limited in the resettlement site due to legal restrictions, out-migration will reduce due to the opportunities provided in the resettlement site. This will lead to a potential enhancement of population growth compared to developments in the current villages. As in 2UR, while this might initially lead to increased pressure on the socioeconomic resources, it will lead to a stronger and innovative development of the local economy and reduce the risk of vulnerable households encompassing only elderly people staying behind, when young people migrate to urban areas.
478. Meanwhile, the option of self-resettlement might reduce the number of households moving to Houaysoup and therefore lead to a decrease in total household numbers.

### **8.4.2 Influx of Outsiders, including tourism**

479. The impact of the Project on the influx of outsiders is limited with less than half a dozen new households in the area; the declaration of the cut-off-date should mitigate further increase of squatters seeking opportunities from the Project. In the current villages, different from the construction site, only around 10 staff will be based long-term in 2LR, with a short-term increase during asset registration. These employees with higher salaries will provide business opportunities for locals, but their small number makes them not attractive for camp followers, therefore not expected in this zone.
480. This will be substantially different for the resettlement area, on the other side of the construction area. In-migration of workers and camp-followers is expected and initial developments can already be observed.
481. Currently, neither in 2LR nor in the resettlement site, tourism is an important factor. However, the dam site and reservoir could become a destination for people from the urban areas of the Province, above all for traditional, large family picnics as for example at Nam Ngum 1 close to Vientiane Capital. This will be an increasing business opportunity for people in the area; via its livelihood programs it can support villagers to gain from tourism and the cultural and health awareness programs will reduce vulnerability to influx of outsiders.

### **8.4.3 Social Relations**

482. Non-land-based social relations, i.e. above all the clan-system, will not be impacted by resettlement. Three developments will impact overall social relations:
- i. The 4 villages of 2LR plus Hatsaykham will live inside an administrative unit, close together in one residential area; even though neighbourhood boundaries will be respected. This will increase interactions between the current villages.

- ii. Current village structures will be analysed and land allocation for residential areas will be discussed with PAPs over a longer process, aiming for consent. Nonetheless, immediate house-neighbours might change.
  - iii. Due to the self-relocation option, some households might not resettle to Houaysoup; they have to forge new social relations in their individual resettlement locations, while reducing the relations to former neighbours moving to Houaysoup
483. The change of livelihood activities towards stronger market economy integration will request different skills. This might re-arrange the social strata in the villages, providing poor families the opportunity to enhance their livelihoods, not any longer fully dependent on size of land ownership. Furthermore, young people will adapt easier to these new economic structures due to better education and according livelihood opportunities. Individual salaries and profits deprive the head of household on allocating resources, which will lead to a stronger position for young people. Nonetheless, although relative losses in economic resources weaken the position of heads of households, cultural aspects and family structures still can sustain their role within the family.
484. Finally, the available facilities in the resettlement site as well as better access to urban areas will change the geographic boundaries of social networks. Even though, as discussed above, villagers of 2LR have networks extending to the national and international level already, social relations to people outside the village boundaries, above all at the regional and national, will enhance.

#### **8.4.4 Social Disturbances**

485. Closer access to urban areas and reduced influence of heads of households might lead to social disturbances, if not managed properly. The Project will support local institutions as for example the Lao Women Union through its community development section to mitigate such disturbances.
486. Livelihood development in the area will allow more young people to stay in the villages, reducing the risk of breaking social relations by out-migration to urban areas. Other developments, like road and electricity access, have, however, a much stronger impact, independent from the Project.
487. Active livelihood planning, trials, and cultural awareness trainings will mitigate the risk that livelihood adaptations fail and cash compensation get extensively used for gambling, alcohol, tobacco or leisure activities
488. Risks from disturbances by the construction site are limited, as the River divides workers camps on the left bank side from the resettlement site on the right bank river side. Furthermore, PAPs from 2LR will resettle late in the construction process, so that construction will just continue for one more year until 2018.

#### **8.4.5 Local authorities**

489. Cooperation with local authorities along the livelihood programs and infrastructure

development will indirectly increase their capacities, for example in the department of agriculture and forestry. There will be a direct impact via training of health staff by the Project. Project-supported students will work afterwards for local authorities in the area, for example as teachers.

490. Existing grievance institutions will be strengthened by training of grievance redress committees and following practice with grievance cases.
491. Finally the administrative units will change, making power-sharing in the resettlement site between the current village leaders of the five respective villages necessary.

#### **8.4.6 Health including Nutrition**

492. The Project will improve the health situation in the area via its Public Health Action Plan outlined in the SDP, consisting of health awareness programs and support of immunization campaigns, training of public health officers, and the construction of a health centre in the resettlement site. Year-round water supply will furthermore be provided.
493. Horticulture activities might lead to better nutrition, even though already now villagers of 2LR have vegetable gardens. An increase in fisheries will support nutrition; as well as a variety of crops and livestock activities will do. Impact on rice sufficiency should be positive, providing considerably more paddy fields in the resettlement site than currently used in 2LR.
494. An early start in resettlement preparations and the provision of transitional assistance will thereby reduce the potential stress effects of resettlement. The Project will assess health developments via regular updates of baseline data and monitoring by the community health team.
495. Health issues due to the presence of construction workers are as limited as the risk of social disturbances; due to location of the resettlement site and physical relocation late in the construction process. Nonetheless, PAPs and above all young people will be prepared by health awareness campaigns.

#### **8.4.7 Education**

496. Education is a core component of the Project's community as well as livelihood development program, including scholarships and vocational training. Education is the key to successful livelihood adaptation; support has been requested by the PAPs. The program will strengthen the level of education in the area with positive consequences for social and economic structures. New school facilities up to high school-level will allow an enhanced learning environment; and reduced distance to urban areas might attract qualified teachers more easily.

#### **8.4.8 Safety**

497. The increasing availability of cash as well as the consequent increase of non-land based assets would increase the potential risk for theft in the area. However, awareness trainings,

investment in education, explanations on safety through bank deposits, and other community development activities will mitigate this risk.

498. These programs will also mitigate short-term risk of adverse impacts from construction.

#### **8.4.9 Youth**

499. Impact on youth has already been mentioned at several points above. The project will provide livelihood opportunities via its livelihood program, but as well and above all via its education program. Furthermore, cultural and health awareness programs will prepare the young generation for the changes not just due the project but also due to general developments of the area. Urbanization tendencies by the establishment of a small town and easy access to Bolikhan and Pakxan will lead to integration with larger communities and change aspirations and role models. As outlined above, new opportunities and potentially higher cash income levels due to employment and business opportunities will strengthen the role of young people with the families.

### **8.5 Impact on Access**

#### **8.5.1 Access to Public Infrastructure**

500. The Project will provide new public infrastructure on national standards in the resettlement site. This infrastructure will encompass a school, health centre, village hall, bus station, and market, but also water supply, electricity, and access roads. More details can be found in the REDP.

#### **8.5.2 Access to Information and Services**

501. Access to information will strongly be improved in the resettlement site, including the availability of telecommunication access. Also, with a small-town-sized resettlement site and access to urban areas, service provision will enhance, for example shop assortments. This will furthermore be supported by the livelihood programs, as new shops will open, handicraft skills will be enhanced, and health services improved.

#### **8.5.3 Access to Urban Areas**

502. A key impact of resettling to Houaysoup will be the reduction of travel time to the next urban areas from several hours to 30 to 45 minutes. The development of an all-weather and all-season road is also essential, eliminating the risk of being isolated during parts of the year. Regular bus services will increase the mobility of people.

### **8.6 Impact on Gender Issues**

503. As a result of the consultation meetings in 2011, the following gender issues are relevant in the zone 2LR:

- Premature births
  - High demand of physical labour including seasonal farming
  - No schooling opportunity due to poor conditions of schooling (building, materials, etc.)
  - No income generating activities
  - Lack of gender-equality regarding tenure rights regarding assets
504. The Project is expected to have little gender-specific adverse impacts, with the exception of the possibility of inadequate nutrition during the first years of the project, while the newly resettled villagers are getting used to their new homes and fields. This would be of particular concern for pregnant women, women with infants and children, and those infants and children. The Project will make sure that any pregnant or nursing women have adequate health care and are able to receive adequate nutrition, since these are critical to the health of the children. Mitigation measures are integrated into the Gender Action Plan, outlined in the SDP. Measures to empower women and ensure they benefit from the Project are also incorporated in the GAP. This will include ensuring integration of women in Project-related community institutions; gender-equity in any provision of compensation including tenure rights and cash compensation; improved health with a specific focus on maternal health; and an adaptation of community infrastructure to reduce the burden of heavy household work like water fetching on women.

### ***8.7 Impact on Ethnic Issues***

505. All 4 villages on Zone 2LR mostly consist of Hmong people and still continue their typical ethnic life style, including swidden or shifting agriculture and hunting. Also, they value Hmong traditions such as a house style with one storey on the ground and Hmong festival according to their own calendar. However, paddy rice field production as well as two-storey houses are visible in 2LR as well. The Project will have several impacts on ethnic issues.
506. Graves will be impacted and have to be relocated according to local traditions and customs, including spiritual ceremonies, as further elaborated in the REDP. No other cultural resources or sacred sites have been identified by PAPs during village consultation meetings.
507. Livelihood and income restoration activities aim at adapting current activities to reach targets of livelihood improvement as outlined in the REDP. These will have potential impacts on traditional forms of livelihood activities. As in 2UR, a cultural-sensitive, community-driven approach will be implemented to avoid lack of ownership and adverse impacts on cultural identities; at the same time supporting sustainability of the Project's livelihood restoration programs.
508. A third issue is the increased access to urban areas, which provides increased socioeconomic opportunities, including access to markets and public infrastructure like hospitals and higher education. This will increase the influx and exchange of ideas, goods, and people as well as impacting relationships within the communities, changing the determining factors for achieving social status, increasing the role of young people and women, but also of

people producing for markets. Close cooperation of the Project's community consultation team as well as the officers with specific portfolios like education, health, gender, ethnicity, and vulnerability will be key resources to mitigate adverse impacts and support a self-conscious and self-defined development of community structures.

### ***8.8 Impact on Vulnerability***

509. The Project will have positive and potentially adverse impacts on vulnerable households in 2LR. The development of public infrastructure in the designated resettlement site, including good village roads, bus stop, health centre, and school will all lead to better access of vulnerable households and thereby improve their integration into local development; as will specific livelihood development programs and easier access to provincial and national urban areas and related facilities. Land acquisition and resettlement will put pressure on vulnerable PAPs' livelihood; above all during the transition and relocation phase. The Project will provide special assistance during this phase and vulnerability-sensitive resettlement and livelihood programs will mitigate these impacts long-term; this includes allocation of residential and agricultural land up to subsistence-standard even if no ownership in the current villages. Continuing monitoring of vulnerability will be necessary.



## CHAPTER 9 - Social Analysis Construction Area

510. There is only one affected village in Zone 3, which is Ban Hatsaykham (village), a sub-village of Ban Hat Gniun. Zone 3 is the construction area for the main dam, the regulation dam and related facilities.
511. Ban Hatsaykham is located on the left bank of the Nam Ngiep River, about 2.5kms downstream from the main dam site and before the regulation dam. The village was founded in 1993 by Hmong families migrating from Phou Hong area near Phou Katha. The clan of the people were from the Wang and Xong clans. Its residents are related to upstream Hmong, including in Zone 2LR and some households migrated from 2LR villages to Hatsaykham over the past 20 years. Village access is by foot or motorcycle through rugged terrain via a dirt path that can be travelled by 4-wheel drive vehicles during the dry season, but during the wet season is inaccessible. Though the village is located beside the river, transport along the river is difficult during the rainy season due to the many rapids, rock outgrowths, and cascades in this part of the river. It is about 21 km to its district centre, Bolikhan District.
512. Ban Hatsaykham is located in the reservoir area of the re-regulation dam and all households will be inundated. The location of the main components is shown in Figure 2: Locations of Main Features (Source: Technical Report, September 2011). The inundated area is limited in the current residential area but the area is also affected by the construction preparation area such as base camp and saddle dam. As a result, Ban Hatsaykham will be affected by construction activity from Phase 1. Construction of the contractor's camp will be scheduled in the earliest stage, so Ban Hatsaykham will be resettled as early as possible with a projected physical relocation date before Lao New Year 2015. A social management program to address impacts from workers and camp followers-relations has also been prepared, as described in the SDP.

## 9.1 Socioeconomic Profile

### 9.1.1 Demography and Population Changes

The village was founded in 1993 by 13 Hmong families from the Wang and Xong clans, migrating from Phou Hong area near Phou Katha. These families had relationship and relatives upstream including in Zone 2LR. The migration was guided by GoL's policy. The village is administratively amalgamated with Hat Gniun, a Lao Loum village located a few kilometres away.



Figure 27: Khum Hatsaykham

513. A census and socio-economic survey were conducted with every household of the village, to determine all the expected losses and better plan the social and economic development activities needed to mitigate losses.
514. Survey results show the original 13 families have now expanded to 33 households with a total affected population of 218 people (Table 62). Of these, 9 persons are of Lao ethnicity.

Item	Village
	<i>Hatsaykham (sub-Village of Ban Hat Gniun)</i>
Population Structure (people)	217
Household Number	33
Male (people)	110
Female (people)	108
Size of Household (people/HH.)	6.58
Ethnicity	Hmong: 208 Lao Loum: 9*

Table 62: Population Profile of Zone 3 (Source: People number by Survey 2011 and ethnicity by Survey 2012)

*Remark: in the 2011 survey, all PAPs of Hatsaykham declared themselves Hmong*

515. Population structure is shown in Table 63.

Age	Male	%	Female	%	Total	%	M:FRatio
<5	17	15.74	19	17.27	36	16.51	0.89
5-10	16	14.81	21	19.09	37	16.97	0.76
10-15	17	15.74	17	15.45	34	15.60	1.00
16-20	12	11.11	13	11.82	25	11.47	0.92
21-25	12	11.11	11	10.00	23	10.55	1.09
26-30	9	8.33	5	4.55	14	6.42	1.80
31-40	14	12.96	9	8.18	23	10.55	1.56
41-50	3	2.78	6	5.45	9	4.13	0.50
51-60	4	3.70	3	2.73	7	3.21	1.33
>61	4	3.70	6	5.45	10	4.59	0.67
<b>Total</b>	<b>108</b>	<b>100.0</b>	<b>110</b>	<b>100.0</b>	<b>218</b>	<b>100.0</b>	<b>0.88</b>

Table 63: Age and Sex Structure of Hatsaykham (Source: Field Survey 2011)

516. Comparing census results from 2005 with the Census of 2011, a population increase from 165 to 218 can be seen, i.e. a population growth of 32.1%. Points for the resettlement action plan are as follows;
- Around half the population is under age 15 and females exceed males by 12 % in this generation.
  - Among older children, males and females are almost same number.
  - The generation from 26 – 30 years old is extremely small, especially for females

### 9.1.2 Ethnicity

517. Most villagers are from the Hmong ethnic group. One HH is headed by a Lao Loum husband, who came from Ban Tha Bat in 1996 and married a Hmong woman. 9 people of the HH, except his wife, are registered as Lao Loum, including relatives of his wife.
518. The house style is mainly one-storey floor type built on rammed soil with the kitchen separate from the main house. But some elevated Lao-style houses for bed rooms have been adopted, with kitchens of Hmong type. It means the villagers will not always maintain customary Hmong style and will adopt alternatives as preferred.



Figure 28: Typical House Style in Ban Hatsaykham

### 9.1.3 Social Organization and Cultural Relations

519. Of special importance is the historical as well as continuing clan-based relation to the villages of 2LR, where people from this community originate. This led to the request to resettle together with PAPs from 2LR rather than the alternative, which was to move closer to the centre of their current administrative unit, Hat Gniun.

### 9.1.4 Infrastructure

520. As seen in Table 64, infrastructure and services in Ban Hatsaykham are poor. Water, both for drinking and other household uses, comes from the river or the nearby stream. More than sufficient water is available throughout the year and the quality is considered fairly good.
521. With the exception of a school for 1 to 3 grades, public services are available in the main administrative village of Ban Hat Gniun. The village has privately owned small shops, similar to those in other villages, where soaps, detergents, and other daily household goods

can be purchased.

522. As elsewhere, a significant number of villagers are members of the Lao Women’s Union, Lao Youth Union, and Lao Workers’ Union.

Items	Existing Condition
<b>1. Infrastructure / service</b>	
Electricity	None - but due to be provided in 2014 by EdL under a rural electrification program
Drinking water source	Nam Ngiep, Houay Say
Water use source	Nam Ngiep, Houay Say
Transport/ Communication Problem	Dirt Road dry season only Boat with engine No telephone line, but mobile phone is available already.
<b>2. Social Welfare</b>	
Market	None
Pre Primary/Nursery	None
Primary School	Grade1-3; at Ban Hat Gniun for Grade 4-5
Temple	None
Health Centre	None
Cemetery	1.2 ha
Grocery	Available
Water Supply	Available
Underground Water Well	None
<b>3. Private and Public Organization (number of members)</b>	
Lao Women’s Union	30
Lao Youth Union	52
Lao Workers’ Union	7

Table 64: Infrastructure of Hatsaykham (Source: Field Survey 2011)

### 9.1.5 School Attendance

523. Hatsaykham has a one-room school for grades 1 to 3. School attendance rates are low, during main agricultural seasons due to the need of children’s help. Furthermore, the regular non-presence of the assigned teacher reduces the number of school days for children from Hatsaykham. This reduces even further in higher grades, where students have to walk several kilometres to Hat Gniun.
524. Khum Hatsaykham has a newly established school with Grades 1 to 3, and with one teacher on service. To continue their studies beyond Grade 3, the children have to travel 4 kilometres to Ban Hat Gniun. Some children stay overnight at Ban Hat Gniun, while some choose to commute by boat.

### 9.1.6 Literacy

525. The Project has used educational levels as proxy indicator for literacy. Similar to most other rural communities in Lao PDR, nearly 32 per cent of the people in Ban Hatsaykham have no formal education or have had only a couple years of schooling. 48 per cent of the people have attained primary school education, but not higher. Another 19 per cent of the people have attained high school education. Nearly all of the people who have completed primary or high school education are younger residents. 2 persons have completed university education.

Education		
No Formal Education	70	32.1%
Primary School	104	47.7%
Secondary and High School	42	19.3
University	2	0.9%

Table 65: Education Profiles of Affected People of Zone 3 (Source: Field Survey 2011)

526. Updated information will be available after the legal Baseline Survey at the Effective Date in 2014.

### 9.1.7 Health

527. As with the villages of Zone 2LR, where the residents are also Hmong, the people of Khum Hatsaykham practice animism. When people become ill, they first turn to local animist spiritual healers or traditional medicines. When illnesses become more serious, they go to modern health facilities in the district of Bolikhan or to the provincial hospital at Pakxan. While road access to Bolikhan is difficult during rainy season, Pakxan can be reached first by boat and then by car all year long in around 2 hours. After the access road has been completed, Bolikhan can be reached in half an hour by motorbike or car.
528. Table 66 lists the illnesses reported by the people of Khum Hatsaykham at the time of the survey. Diarrhoea is the most prevalent. All the communicable diseases reported are seasonal and temperature-dependent with the levels of rainfall and humidity playing an important role in their occurrence. Missing sanitation facilities are a further aggravating factor.

Village	Number of People								
	Malaria	ARI	Diarrhoea	Fever	Lung	Skin disease	Eye disease	Dengue fever	Parasites
Hatsaykham	0	0	7	3	4	0	0	0	0

Table 66: Infection Diseases Found in the Surveyed Villages of Zone 3 (Source: Field Survey 2011)

### 9.1.8 Gender Issues and Status of Women

529. Consultation meetings with female villagers resulted in the following gender issues being

identified by PAPs:

- Around 24 % of females have no formal education and around 25 % did not complete primary school
- Early marriage (15 to 16 years)
- High demand of physical labour including raising of children and care of livestock, as well as most of house works
- Informally no property rights for females recognized
- No traditional right to divorce for females
- Husbands as lone decision makers; practice of polygyny
- No opportunity to learn new livelihood activities as weaving, tailoring, and food preservation techniques
- Health problems such as diarrhoea, womb pain, body ache; distance to Pakxan hospital is a further health-related issue and access available only during the dry season

### 9.1.9 Information and Services

530. Personal communication channels have been an important component for the acquisition of information. Without electricity, all-year weather road, or telephones, most means of communication are restricted. However, during the past few, these facilities are increasingly being introduced, opening up the community to improved sources of information. With the commencement of construction activities, an even more strong interaction with outsiders will take place.

### 9.1.10 Agriculture and Horticulture Land Use

531. Table 67 presents the patterns of land use in Khum Hatsaykham. As with the other villages upstream from the dam site, about 86 per cent of the total village land is forest area. 18 per cent of the total land is considered privately held. Of this, about 96 per cent, or 14 per cent of the total land area, is agricultural land. 68 % of the privately held agricultural land is for rice production, with the ratio of paddy land to upland rice land about 34:61, not too different from the ratio found in other communities upstream from the dam site. Only about 0.70% of the total land area are residential plots.
532. 8.8 per cent of the total land area is considered public or common property. Most of that is public grassland for grazing. The other public properties are a cemetery and school land.
533. Much of the forest land is used by or managed by the community. About 40 per cent of the total area and 52 per cent of the forest land is community and conservation forest. Another 22 per cent of the total area and about 29 per cent of the forest land is production forest. 11 per cent of total area is un-stocked forest.

Land Use	Hectares	%
<i>Private Properties</i>		
Residential area	5.48	0.62



Land Use	Hectares	%
Paddy rice field	33.76	3.85
Upland rice field	60.6	6.90
Fish Pond	0.68	0.08
Other Cultivated Land	38	4.33
Total Private Properties	138.52	15.78
<b>Public Prosperities</b>		
Cemetery land	1.20	0.14
School Land	0.70	0.08
Grass Land	67	7.63
Total Public Properties	68.90	7.85
<b>Forest and Others</b>		
Un - stocked forest	97	11.05
Production forest	193	21.98
Community Forest	244	27.79
Conservation Forest	107	12.19
Buffer Zone	25	2.85
Other land use	4.60	0.52
Total Forest Land	670.6	65.34
<b>Total</b>	<b>878.02</b>	<b>100.00</b>

Table 67: Land Use Pattern of Zone 3, Khum Hatsaykham (Source: Field Survey 2011)

534. The average agricultural holding is about 0.85 ha, of which 0.53 ha are privately hold and the other 0.32 ha are jointly cultivated. A full accounting of the land holdings of the villagers was made at the time of the survey, to enable adequate compensation calculation.

### 9.1.11 Rice Sufficiency

535. An assessment of rice sufficiency showed that 64 per cent of the villagers grow enough rice themselves to consume for more than 10 months of a year round. The remaining 36 per cent of them suffer from rice shortages for 1 to 8 months a year. For those months, they mainly rely on food purchases or exchange in kind. As with households in 2UR and 2LR, the Project will make a qualitative analysis of all of these households to understand how rice insecurity is linked to food insecurity. In the period immediately following relocation, food insecurity will not be an issue due to the planned Rice Supplement Program. However, additional information on food insecurity will outline the households for whom livelihood development requires additional inputs.



Village	Number of households	Households with year-round rice sufficiency (months)		
		12 - 10	10 - 6	6
Hatsaykham	33	63.6 (%)	30.3 (%)	6.1 (%)

Table 68: Rice Sufficiency in Khum Hatsaykham (Source: Field Survey 2011)

### 9.1.12 Livestock

536. Livestock is an important socioeconomic factor in Hatsaykham with most households owning animals and some households having a large number of large livestock. The following table provides an overview:

Livestock	Total Number of Livestock in Hatsaykham
Cattle	155
Buffalo	166
Pigs	248
Goats	20
Chicken	713
Fighting Roosters	8
Ducks	34

Table 69: Livestock in Hatsaykham (Source: SES Access Road 2014)

### 9.1.13 Forest Utilization

537. Non-Timber Forest Products are not an important source of cash income but are used for home consumption, complementing other food elements. Preliminary analysis of data from the Access Road Survey finds that timber products are increasing in importance for household income.

### 9.1.14 Hunting

538. Hunting is an important tradition as well as livelihood activity for people from Hatsaykham, with men out of contact for days to spend time in the forest to hunt birds and animals. To avoid resource conflicts with local hunters, the Project's Code of Conduct explicitly denies workers from outside the right to hunting in the area.

### 9.1.15 Fisheries

539. Fisheries are an essential element of nutrition for people from Hatsaykham, who even in low fishing season consume fish several days per week, as a preliminary analysis of fish consumption from Access Road Socioeconomic Survey Data show. The Project implements a fish-catch-monitoring program to complement this assessment, to grasp the seasonal changes, difficult to be assessed via a broad baseline survey.
540. As elsewhere in the area, river fishing is the task of the men. They use cast nets, fishnet, and sometimes fishhooks. While most of the fish they catch is for home consumption, some surplus is on occasion sold at the market, at Ban Somseun or at Pakxan.

### 9.1.16 Other Sources of Income

541. Household income of people in Khum Hatsaykham comes from livestock and fishery. Hunting and trade & service income are the next most important sources of cash income as presented in the next section.

### 9.1.17 Imputed Income

542. During the 2011 survey, no imputed income was assessed. The Project recognizes that imputed income is an important factor for rural households depending on subsistence livelihoods, and will integrate respective assessments into the legal baseline study 2014. Preliminary data from the Access Road show that imputed income in Hatsaykham still encompasses a large portion of total income.

### 9.1.18 Cash Income

543. The 2011 survey finds that the total income of the households of Khum Hatsaykham is consistent with that of other villagers upstream from the dam site, in this case around 8 million kip (1,000 USD) /household per year. Updated data will be provided after the conduction of the legal baseline survey.

Activities	Amount (kip / year)	Percentage (%)
Rice production	294,900	3.59
Livestock	3,244,848	39.45
Forestry and Plantation Trees	38,181	0.46
Vegetable	158,060	1.92
Fishery	1,330,909	16.18
Hunting	884,848	10.76
Non Timber Forest Products (NTFPs)	414,545	5.04
Wages	166,667	2.03
Handicrafts	0	0.00
Trade and service	850,000	10.33
Other	842,393	10.24
<b>Total</b>	<b>8,225,351</b>	<b>100</b>

Table 70: Yearly Household Income Activities (Source: Field Survey 2011)

### 9.1.19 Total Income

544. The Zone 3 RAP will update the total household income estimates based on new information gathered in Baseline Survey. However, preliminary data analysis suggests that the total income (including imputed income) far exceeds the cash income assessed during the 2011 survey, which corresponds to the risen values of household expenditures, outlined in the next section.

### 9.1.20 Household Expenditure

545. Based on 2011 data, the major expenses of affected people are for daily living; food, clothes, education for children, and medicines and health care. Other expenditures are for investments in agriculture, for seed and tools. 70 per cent of households did not report any debt. Of those who did, 3 were because of health costs, 2 for investments, and 2 for other reasons.
546. As preliminary data from the Access Road Socioeconomic Survey shows, see Table 71, expenditure patterns change in quantity and quality. Food and drinks including alcohol continue to account for a third of household expenditures in Hatsaykham. Health care and education materials remain also an important expenditure and so do clothes. Changes are increased investments into accommodation development and petrol.

### 9.1.21 Poverty

547. While Hatsaykham is on community level poorer than other REDP villages according to the 2011 assessment, changes are now beginning to emerge with better access to markets and infrastructure. This also diversifies the inequalities between the households, because while most villagers can now rely on a strengthened economic structure, indicated for example by the livestock data presented above, a few households in the community remain poor. The vulnerability-assessment for the Access Road noted 6 poor households in Hatsaykham.

### 9.1.22 Vulnerable Households

548. 4 of these six poor households also meet other criteria of vulnerability: 2 households with a female Head and 2 households with disabled family members. While they overlap with households experiencing rice insufficiency, special attention will be paid by the Project to the specific kinds of vulnerability, which will extend transitional assistance, develop household-specific alternative livelihood options, and provide health support. For households having persons with physical disabilities, care will be taken to ensure the replacement housing is easily accessible.

	No of vulnerable HH*	Landless	Elderly	Female	Disabled	Absolutely Poor	Other Problems
Hatsaykham	6	0	1	4	0	3	3

Table 71: Vulnerable Households in Hatsaykham (Source: Vulnerability Report Access Road 2014)

*\*Remark: HHs might have several indicators of vulnerability*

## 9.2 Land Acquisition and Resettlement Impacts

550. Residents of Ban Hatsaykham will lose all their residential properties and their productive lands on the left bank side of the river. The whole community of 33 household and 218 people needs to be resettled. Their choice is to resettle with villagers from 2LR to the Houay Soup Resettlement Area. The details on resettlement site development and livelihood

restoration will be provided in REDP.

551. Impact on Land for Zone 3 results from three different sources: Land acquisition for the access road, land acquisition for construction land, and inundation by the re-regulation pond. Impacts regarding the access road are covered separately by the Land Acquisition and Compensation Plan – Access Road. These losses would have to be included in a cumulative analysis of project impacts; however, due to resettlement, all households are already categorized as significantly impacted.
552. There will be environmental impacts around the construction area, affecting water quality, fishing, creating dust and noise, as well as waste. Infrastructure, such as an access road, will need to be built before construction begins, and this, too, will have impacts on water, noise, etc. The construction will require influx of a large number of workers, and this will also affect the local physical as well as social environments.
553. Because of these impacts and the eventual loss of all lands on the left bank, the people of Ban Hatsaykham will physically relocate before Phi Mai (April) 2015. There is a basic school up to grade 3 in Hatsaykham Hamlet, which will be replaced in the resettlement site with the new school: up to high school level on national standards for students from Zone 3, 2LR, and the host communities. Cultural Assets potentially impacted encompass a cemetery, which, however, will not experience impact after careful design of project activities.
554. In addition to any compensation for the loss of these lands and other resources (as fruit and production trees) in cash and/or in kind, the Project will initiate changes to resource utilization patterns that can provide people with stable and sustainable livelihoods as described in the REDP.

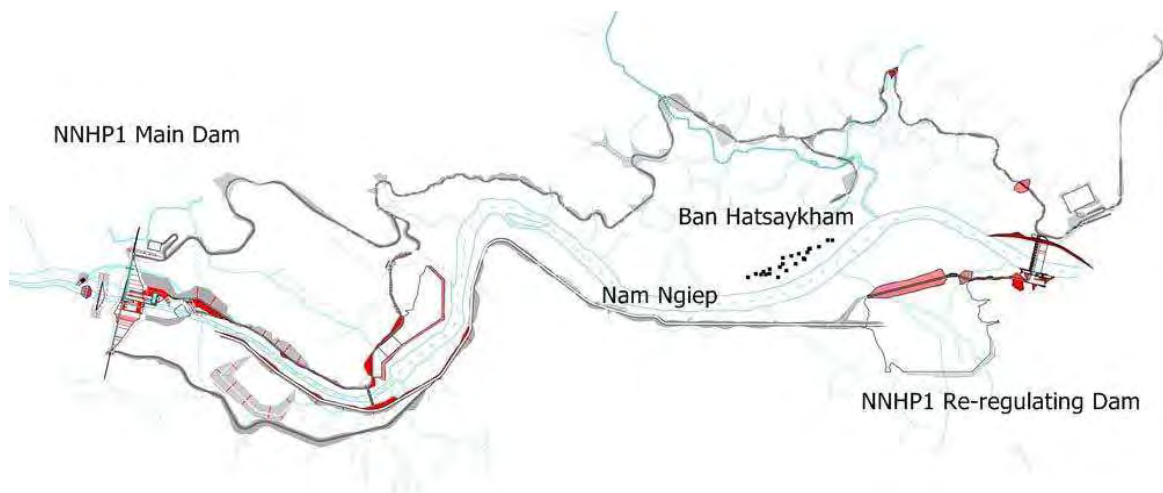


Figure 29: Map of Affected area of Khum Hatsaykham by Inundation

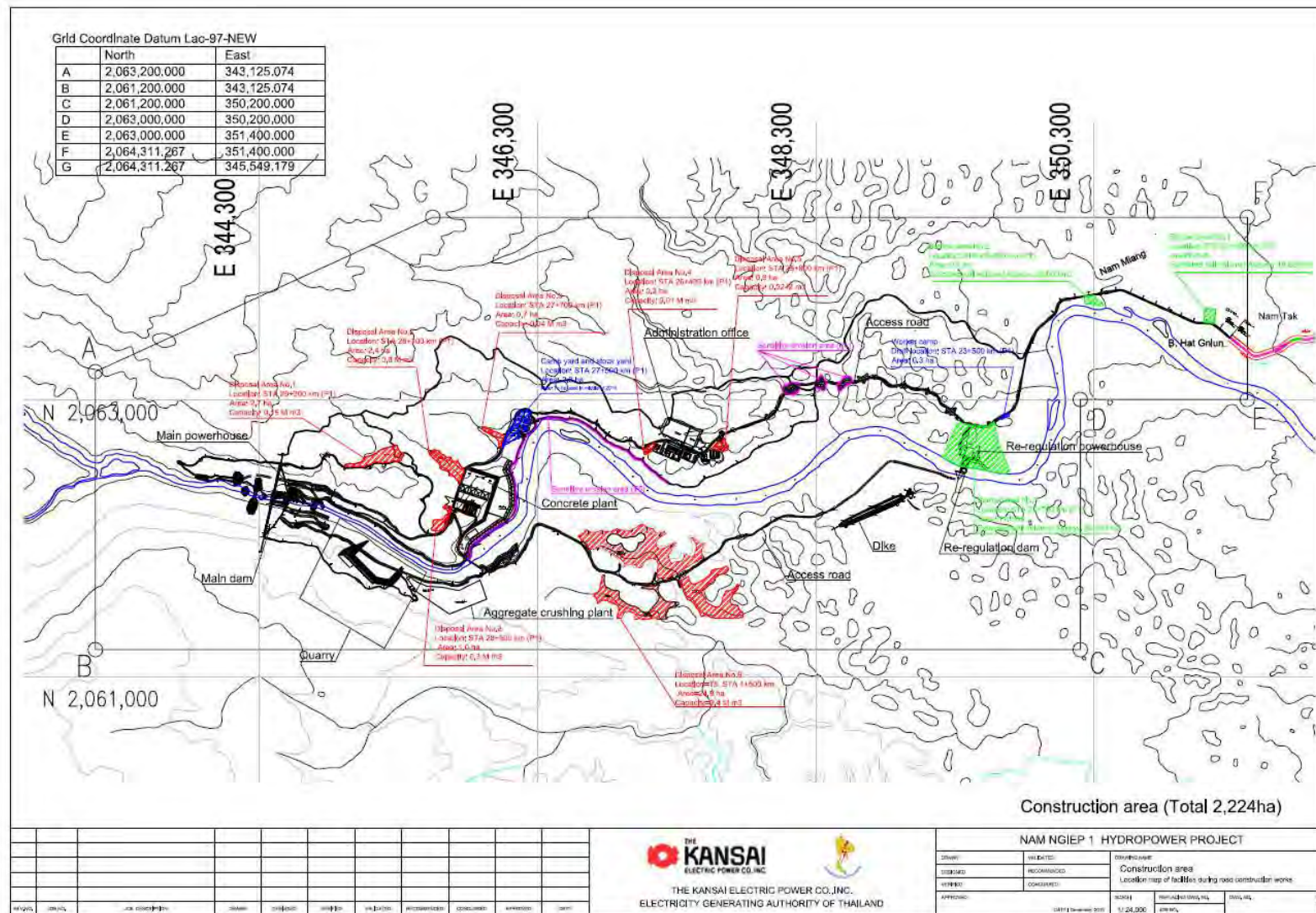


Figure 30: Map of Affected area of Khum Hatsaykham by Facilities

### **9.3 Impact on Livelihood Activities**

555. Similarly than the resettlers from Zone 2LR, resettlement to the resettlement site will bring new opportunities and constraints with it, amongst others the necessity to reduce swidden culture, higher population rates and access to district, province, and further. However, as the resettlement site is just opposite the river, the impact will be minor compared to the other resettlers.

#### **9.3.1 Crop Cultivation**

556. As outlined above, while Hmong are traditionally upland rice cultivators, villages of 2LR have been cultivating paddy rice fields since three decades and so did villagers of Zone 3, who moved to the area arriving from 2LR. Soil improvement, irrigation and other rice cultivation techniques, as well as possibilities of cash crop cultivation will change traditional crop cultivation patterns. More details are outlined in section 8.3.1.

#### **9.3.2 Livestock**

557. Similar as crop cultivation, impact on livestock development will derive from the conditions and organization of the new resettlement site as well as livelihood programs. Intensified livestock development will come with risks; which the Project will mitigate by pasture development, value chains linking to crop production, and veterinary services. More details are discussed in section 8.3.2.

#### **9.3.3 Forest Utilization**

558. Different from resettlers of 2LR, PAPs from Hatsaykham know the resettlement site and the forests in the area. Thus, resettlement itself will have no impact on community knowledge regarding forest utilization.
559. Impact will be felt by Hatsaykham due to the necessity to share resources, once PAPs from 2LR will resettle to the shared resettlement site. Furthermore, forest access to the left bank side will be limited to villagers from the host communities. If agreements with the host communities do not hold, then a co-management program might be necessary.
560. Finally, workers and camp followers might increase pressure on local forest resources. The Project obliges project workers to follow a code of conduct, which prohibits activities in local forests.

#### **9.3.4 Fisheries**

561. As for resettlers from 2LR, sharing and consequently management of fisheries between resettlement communities and host communities will be necessary and reservoir fishing needs adaptations of current fishing activities. More details are discussed section 8.3.4.

### **9.3.5 Other Livelihood Activities including Business and Employment**

562. PAPs will have the opportunity to engage in off-farm activities to make use of the improved access to markets via the access road towards Bolikhan and Pakxan, as well as electricity and telecommunication provided in the resettlement site.
563. As for 2LR, livelihood programs will train people not just in skills for new or enhanced professional activities, but also in the necessary additional qualifications and pre-requisites for successful and sustainable employment and business development, such as marketing support and microfinance options for business ideas.
564. People from Hatsaykham have employment and business opportunities from the start of Project activities; many of them are already engaged in the construction of the access road. Further project employment opportunities will be available in the resettlement site and at the power house. These opportunities request skilled labour, for example technicians. Project employment can increase livelihood incomes for a period of time and the skills deriving from this experience can be used for alternative livelihood opportunities later on.

### **9.3.6 Tenure Security**

565. As for 2LR resettlers, the Project will provide land titles for privately held land in Houaysoup, as well as for community lands, increasing tenure security for the impacted PAPs. Close to the dam site no new projects will be located nearby, ensuring that this land will be permanently in the hand of resettlers and future involuntary resettlement impacts from other projects are highly unlikely.

### **9.3.7 Expenditure patterns**

566. The above outlined changes in livelihood activities will all lead to stronger market economy integration, including the availability of cash. The same changes as for 2LR will occur: quantitative increase of expenditure and a qualitative change of expenditure patterns, making expenditure decisions essential for the sustainability of household livelihoods. Family financial training offered by the Project will enable households to understand these changes and it will highlight the necessity that long-term investments balance short term consumption. Livelihood trainings will furthermore integrate potential risks into their curricula.

## ***9.4 Impact on Social Structures***

### **9.4.1 Population profile**

567. As with 2LR, while in-migration will be limited in the resettlement site due to legal restrictions, out-migration will reduce due to the opportunities provided in the resettlement site. This will lead to a potential enhancement of population growth compared to developments in the current villages. While this might lead initially to increased pressure on



socioeconomic resources, it will lead to a stronger and innovative development of the local economy and reduce the risk of vulnerable households encompassing only elderly people staying behind, when young people migrate to urban areas.

568. The option of self-resettlement will have less impact on population numbers in Hatsaykham than for 2LR.

#### **9.4.2 Influx of Outsiders, including tourism**

569. Project impact on the influx of outsiders for Zone 3 will be substantial, encompassing resettlers from 2LR, workers, and camp followers. The Project has prepared necessary mitigation measures, amongst others a social management and mitigation program as part of the PHAP outlined in the SDP. Early resettlement of Hatsaykham will further limit impacts.
570. As describe in section 8.4.2, tourism is currently no important factor in the resettlement site, but picnic-tourism might provide a business opportunity, supported by the Project's livelihood program on small-enterprise development.

#### **9.4.3 Social Relations**

571. Non-land-based social relations, i.e. above all the clan-system, will not be impacted by resettlement. Two developments will impact overall social relations:
- i. The 4 villages of 2LR plus Hatsaykham will live inside an administrative unit, close together in one residential area; even though neighbourhood boundaries will be respected. This will increase interactions between the current villages.
  - ii. Current village structures will be analysed and land allocation for residential areas will be discussed with PAPs over a longer process, aiming for consent. Nonetheless, immediate house neighbours might change.
572. Further impacts will have changes of livelihood activities onto social diversification between as well as within households. Further details are discussed in section 8.4.3.
573. Finally, the available facilities in the resettlement site as well as better access to urban areas will change the geographic boundaries of social networks. Even though, as discussed above, villagers of Zone 3 have networks extending to the national and international level, social relations to people outside the village boundaries, above all at the regional and national, will enhance.

#### **9.4.4 Social Disturbances**

574. Access to urban areas, livelihood developments, and cash-compensation values will have potential impacts on social disturbances, requiring social management by the PAPs with support by the Project, similar as for 2LR outlined in 8.4.4.
575. Essentially different from 2LR are the risks from disturbances from the construction site before early resettlement; and the continuing location of the construction site in the area,



with the resettlement site separated by the river. The outlined social management and mitigation program will curb these risks.

#### **9.4.5 Local authorities**

576. As described in section 8.4.5 for 2LR, cooperation with local authorities along the livelihood programs and infrastructure development will indirectly increase their capacities and the scholarship program will provide potential future, qualified civil servants. Existing grievance institutions will be strengthened, while integration with 2LR will make power-sharing in the resettlement site necessary.
577. During construction project cooperation with police and health care personnel via the social management and mitigation program will increase the capacities of involved public authorities.

#### **9.4.6 Health including Nutrition**

578. The Project will increase the health situation in the area via its Public Health Action Plan as described in section 8.4.6, as well as diversified nutrition via livelihood and fisheries programs. Rice sufficiency will also increase via paddy field development in Houaysoup. Resettlement stress for Hatsaykham will be minor as they remain close to their current settlement area, further mitigated by an early start in resettlement preparations and the provision of transitional assistance. Health monitoring will be implemented.
579. Again, specific impacts on Hatsaykham result from the presence of construction: health issues due to the presence of construction workers is a risk factor and the Project has prepared the necessary precautions including rules and regulations for workers, public health activities in the communities, and a social management and mitigation program for camp followers. Young people will be prepared by health awareness campaigns.

#### **9.4.7 Education**

580. Requested by PAPs, education is a core component of the Project's community as well as livelihood development program including construction of school facilities and implementation of scholarship program, as outlined in 8.4.7, strengthening the level of education in the area with positive consequences for social and economic structures.

#### **9.4.8 Safety**

581. The increasing availability of cash as well as the consequent increase of non-land based assets would increase the potential risk for theft in the area. However, awareness trainings, investment in education, explanations on safety through bank deposits, and other community development activities will mitigate this risk.
582. These programs will also mitigate risk of adverse impacts from construction as outlined above. Substance abuse is an issue for some people in Hatsaykham already before the commencement of the Project. Monitoring has to be implemented to mitigate a negative

development.

#### **9.4.9 Youth**

583. Impact on youth has already been mentioned at several points above. The project will provide livelihood opportunities via its livelihood program, but as well and above all via its education program. Furthermore, cultural and health awareness programs will prepare the young generation for the changes not just due the project but also due to general developments of the area. Urbanization tendencies by the establishment of a small town and easy access to Bolikhan and Pakxan will lead to integration with larger communities and change aspirations and role models. As outlined above, new opportunities and potentially higher cash income levels due to employment and business opportunities will strengthen the role of young people with the families.

### **9.5 Impact on Access**

#### **9.5.1 Access to Public Infrastructure**

584. The Project will provide new public infrastructure on national standards in the resettlement site. This infrastructure will encompass a school, health centre, village hall, bus station, and market, but also water supply, electricity, and access roads. More details can be found in the REDP.

#### **9.5.2 Access to Information and Services**

585. There will be no impact on access to information; telecommunication is available in the area since a short time before Project commencement.
586. With a small-town-sized resettlement site and access to urban areas, service provision will enhance, for example assortment of shops. This will be supported by the livelihood programs, as new shops will open, handicraft skills will be improved, and health services improved.

#### **9.5.3 Access to Urban Areas**

587. The key impact of the Project regarding access to urban areas is not resettlement but the construction of the access road, reducing travel time to the next urban area from two hours to 30 to 45 minutes. The development of an *all-weather and all-season* road is also essential, eliminating the risk of being isolated during parts of the year. Regular bus services will increase the mobility of people.
588. Regarding resettlement, PAPs were concerned that this new access might be lost; the Project ensured that it will provide the necessary access road including bridge to link the overall access road from Pakxan with the access road to the resettlement site.

## 9.6 *Impact on Gender Issues*

589. The following topics are results from consultation meetings with female villagers:
- Around 24 % of females have no formal education and around 25 % did not complete primary school
  - Early marriage (with 15 to 16 years)
  - High demand of physical labour including raising of children and care of livestock, as well as most of house works
  - Informally no property rights for females recognized
  - No traditional right to divorce for females
  - Husbands as lone decision makers; practiced polygamy
  - No opportunity to learn new livelihood activities as weaving, tailoring, and food preservation techniques
  - Health problems such as diarrhoea, womb pain, body ache; distance to Pakxan hospital is a further health-related issue and access available only during the dry season
590. The following topics are fears of adverse impacts from the Project as expressed by villagers:
- Unstable income status due to change of income sources
  - Increasing mental and physical stress due to potential poverty
  - Weakening of conjugal ties and loosening of family bonds due to urbanization. As a result, family work for wives and older female family members might increase, as children might leave their parents earlier
591. During the construction phase the influx of large numbers of male workers pose a further challenge which the Project attempts to address with a series of measures, outlined in detail in the Social Development Plan (SDP): from health and safety community work to codes of conducts for workers to cooperation with local police authorities. Measures to empower women and ensure they benefit from the Project are also incorporated in the GAP. This will include ensuring integration of women in Project-related community institutions; gender-equity in any provision of compensation including tenure rights and cash compensation; improved health with a specific focus on maternal health; and an adaptation of community infrastructure to reduce the burden of heavy household work like water fetching on women. To facilitate good integration into information disclosure, project activity coverage and equitable decision making, the Project will have to give equal weight to recruiting female field staff, prioritising those with knowledge of Hmong language. The community consultation and development team of the Project is already fully composed of people of Hmong origin.

## 9.7 *Impact on Ethnic Issues*

592. The following topics are results from consultation meetings with female villagers:
- Swidden cultivation is a main form of agricultural production

- Livestock, especially cattle, are the main cash income source
  - Hunting and NTFP are further important income sources
  - Most of men go to deep forests for hunting and NTFP; as a result, females stay behind and have to do most of the household works
  - Direction of houses follows Hmong traditions, i.e. alignment from east to west, and the entrance of houses does not face the mountain
  - There are still a few people playing “Kaen” pipes, but there are no more people playing Hmong flute
593. The following topics are fears of adverse impacts expressed by villagers:
- Change of agricultural production style from swidden or upland rice to paddy field rice may result in lower income and consequently increase mental and physical stress
  - Modernization due to urbanization after resettlement may lead to changes in living style, i.e. a weakening of Hmong traditions such as house style, festival culture, herb gathering, and family constitution.
594. Impacts on ethnic issues in Hatsaykham are similar to outlined impacts in the assessment of 2LR (see section 8.7). Summarized, the three main topics are impacts on graves, change of livelihood activities, and increased access to urban areas. The neighbourhood with the construction site poses additional challenges as outlined above, which also may affect the ethnic identity of Hatsaykham and increase the risk of intercultural conflicts with workers and campfollowers. The Project will mitigate these risks with a specific social management and mitigation program outlined in the SDP.

## ***9.8 Impact on Vulnerability***

595. The Project will have positive and potentially adverse impacts on vulnerable households in Zone 3. The development of public infrastructure in the designated resettlement site, including good village roads, bus stop, health centre, and school will all lead to better access of vulnerable households and thereby improve their integration into local development; as will specific livelihood development programs and easier access to provincial and national urban areas and related facilities. Land Acquisition and Resettlement will put pressure on vulnerable PAPs’ livelihood; above all during the transition and relocation phase. The Project will provide special assistance during this phase and vulnerability-sensitive resettlement and livelihood programs will mitigate these impacts long-term; this includes allocation of residential and agricultural land up to subsistence-standard even if no ownership in the current villages. Continuing monitoring of vulnerability will be necessary.

## CHAPTER 10 - Social Analysis Far Downstream Area

596. There are 11 villages located along the 40 km of the Nam Ngiep River downstream from the re-regulating dam to Pakxan where the Nam Ngiep flows into the Mekong river, of which 9 form Zone 4, while the two located fairly close to the re-regulating dam, Ban Hat Gniun (Main village) and Ban Thahuea, are close to the resettlement area, and as such considered host communities (Zone 5). The impacts of the Project on these two villages are discussed in the following Chapter 11.
597. 3 villages of the nine Z4-villages are located in Bolikhan District/Bolikhamxay Province, about 20 km downstream:
- Ban Somseun
  - Ban Nampa
  - Ban Houykhoun
598. The other 6 villages alongside the Nam Ngiep River are in Pakxan District, also in Bolikhamxay Province, stretching from about 30 km downstream to the Mekong River. They are:
- Ban Thong Noi
  - Ban Thong Yai
  - Ban Sanaxay
  - Ban Phonsy
  - Ban Pak Ngiep
  - Ban Sanoudom
599. Two of the oldest communities among the downstream villages are Ban Somseun and Ban Houykhoun, established about 125 years ago. Ban Thong Yai and Ban Thong Noi were established about 100 years and 80 years ago respectively. Ban Pak Ngiep is also fairly old, established about 75 years ago.
600. Most of the other villages are fairly recent. Ban Phonsy and Ban Nampa were established about 45 years ago, Ban Sanaxay about 35 years and Ban Sanoudom about 30 years ago.



Figure 31: Location of villages of Zone 4 – Downstream Area

## 10.1 Socioeconomic Profile

### 10.1.1 Population Profile

601. Data on the population of the villages in Zone 4 presented in Table 72 from a study conducted 2011, with information largely collected from local village leaders. Because this area is not expected to face severe impacts from the construction of the dam, the socio-economic survey covered only a sample portion of the households.
602. The distribution between male and female is fairly evenly distributed in all the villages in this zone.

Village Name	HH	Population			Directly Affected Households	Ethnicity
		Total	Female	Male		
Nampa	84	584	293	291	0	Lao
Somseun	221	1,207	602	605	0	Lao
Houykhoun	358	2,180	1,076	1,104	0	Lao
<i>Total in Bolikhan District (except Hat Gniun and Thahuea)</i>	663	3,971	1,971	2,000		
Thong Noi	165	839	410	429	0	Lao
Thong Yai	86	437	218	219	0	Lao
Sanaxay	274	1,156	582	574	0	Lao
Phonsy	137	719	369	350	0	Lao
Pak Ngiep	173	859	430	429	0	Lao
Sanoudom	94	457	221	236	0	Lao
<i>Total in Pakxan District</i>	929	4,467	2,230	2,237	0	
<b>TOTAL IN ZONE 4</b>	<b>1,592</b>	<b>8,438</b>	<b>4,201</b>	<b>4,237</b>	<b>0</b>	

Table 72: Population Profile of the Affected People of Zone 4 (Source: Field Survey 2011)

### 10.1.2 Social Organization and Cultural Relations

603. While all the villages have members of the Lao Women's Union, the Lao Youth Union, and the Lao Workers' Union, the study did not collect exact numbers of membership.

### 10.1.3 Infrastructure

604. Almost all the communities have good infrastructure, as seen in Table 73 below. All but Ban Nampa have electricity, though not all households in all the villages are as yet electrified. All are served by road and all are easily accessible by river.
605. Nearly all have primary schools, though only Ban Houykhoun has a secondary school.
606. All the communities have cemeteries. Nearly all have a temple or temples. Three of the larger or more central communities have health centres. Most of the others have volunteer health workers in the village, and some also have midwives. All have small village groceries.
607. Water supply is considered good in all but two villages. Water supply in Nampa is rated as fair, with only 4 ground wells available and the rest of the water for consumption having to come from nearby streams or the river. Ban Thong Noi also has limited number of wells, only 6 to serve the community, with the remainder of its water coming from the river or streams. The rest of the communities have many more built wells and in some cases artesian wells providing good quality water to the residents.

Village	Infrastructure Service			Social Welfare					
	Electri-city	Water Supply	Road	Primary school	Secondary school	Health centre	Temple	Cemetery	Grocery
Nampa	-	√	√	√	-	-	-	√	√
Somseun	√	√	√	√	-	-	√	√	√
Houykhoun	√	√	√	√	√	√	√	√	√
Thong Noi	√	√	√	√	-	√	√	√	√
Thong Yai	√	√	√	-	-	-	√	√	√
Sanaxay	√	√	√	√	-	-	-	√	√
Phonsy	√	√	√	√	-	-	-	√	√
Pak Ngiep	√	√	√	-	-	-	√	√	√
Sanoudom	√	√	√	√	-	√	√	√	√

Table 73: Infrastructure of Village in Downstream Area (Source: Field Survey 2008)

### 10.1.4 School Attendance and Literacy

608. In discussions with village leaders, it was found that most of the villagers had at least some formal education. Many also completed lower secondary and upper secondary levels. In general, the further downstream from the dam, the higher the education levels of the villagers. The communities that lie closest to the dam have the lowest proportion of residents who completed secondary schooling. Those closer to the Mekong River have had better access to educational facilities, first in their own communities and, for higher education, in places that are easily accessible to them by road or river transport.
609. Given that the downstream communities are also Lao Loum, it confirms the general pattern of education discussed in Chapter 16 of ethnic Lao communities having greater access to and higher education levels than ethnic groups living in more remote areas.

Village	No Formal Education	Primary School	Secondary School	Technical / University
Nampa	1	7	3	0
Somseun	0	19	11	0
Houykhoun	4	20	22	2
Thong Noi	0	10	10	2
Thong Yai	0	5	7	0
Sanaxay	2	7	25	1
Phonsy	1	10	6	0
Pak Ngiep	3	11	8	0
Sanoudom	0	3	7	2
<b>TOTAL</b>	<b>11</b>	<b>92</b>	<b>99</b>	<b>7</b>
<i>Per cent</i>	<i>5.3%</i>	<i>44.0%</i>	<i>47.4%</i>	<i>3.3%</i>

Table 74: Education Levels of Villagers in Zone 4 (Downstream) (Source: Field Survey 2008)



### **10.1.5 Agriculture and Horticulture**

610. Land use of the downstream communities (except Ban Hat Gniun and Thahuea) is presented in the table below. Two main factors distinguish the downstream communities from those upstream of the dam. The first is that there is little forest land reported as part of the village land. The second is that paddy fields and other low-lying cultivated lands are the dominant type of agricultural holding.
611. Ban Somseun is one of the few villages in the Zone 4 with a significant forest area. It is also fairly far upstream, closer to the dam site. While a number of the other communities also report community managed production forests, the actual area of those forests is uncertain and there is some overlap of use among villages.

Land Use Classification	Land Use and Forest Area (ha)									
	Somseun	Nampa	Houykhoun	Thong Noi	Thong Yai	Sanaxay	Phonsy	Pak Ngiep	Sanoudom	Total
<b>1. Private Land</b>										
1.1 Resident area	9.22	0.92	13.47	2.55	3.16	6.55	2.3	3.2	1.45	42.82
1.2 Paddy field	27.65	13.54	56.14	34.54	31.85	9.14	17.19	23.58	14.56	228.19
1.3 Upland rice field	5.6	0	2.72	0	2.4	0.16	0	0	0	10.88
1.4 Other cultivated land	12.5	10.67	22.34	12.83	0.76	8.38	2.25	6.02	66.95	142.7
1.5 Fish Pond	5.26	0	0	0	0	0	0	0	0	5.26
1.6 Other land use										
<b>Total</b>	<b>60.23</b>	<b>25.13</b>	<b>94.67</b>	<b>49.92</b>	<b>38.17</b>	<b>24.23</b>	<b>21.74</b>	<b>32.8</b>	<b>82.96</b>	<b>429.85</b>
<b>2. Forest land</b>										
	872.04	N/A	N/A	145.75	500	N/A	500	259	250	2526.79
<b>Total Land Area</b>	<b>932.27</b>	<b>25.13</b>	<b>94.67</b>	<b>195.67</b>	<b>538.17</b>	<b>24.23</b>	<b>521.74</b>	<b>291.8</b>	<b>332.96</b>	<b>2956.64</b>

Table 75: Land Use in Zone 4 (Source: Field Survey 2008)

### 10.1.6 Rice Sufficiency

612. Data were not collected on rice sufficiency in the downstream communities. However, from observation and discussions, it was apparent that a number of the households do not produce enough to supply their families with rice year round, but have to purchase at least some of their annual rice requirements. At the same time, the downstream communities have greater access to markets and so also have a much greater variety to their diets.

### 10.1.7 Fisheries

613. Because of the expected impact on water quality and quantity downstream from the dam, additional information was collected on the role of fish in the downstream communities.
614. Fish are an important source of protein for all the villagers in the downstream communities, along with pork, chicken and eggs. The most important source of fish for the people in these communities is the Nam Ngiep River. Tributaries to the Nam Ngiep, as well as fish ponds, are also of some importance. For those communities farthest downstream, near the mouth of the river, the Mekong River is another important source of fish, whether caught by the households themselves or purchased from the market.
615. During the wet season, villagers will often go into the river with long-tail boats. In the dry season, when the flow is much lower, villagers tend to use boats with oars, so as to better navigate the rocky outcrops and other hazards in the low-lying waters.
616. The preferred way of fishing is with cast-net, and less so with fishhooks and with baskets.
617. Households include fish in 2 to 3 of their meals per day, and for 5 to 7 days per week. Pork and chicken are also included in most meals of villagers in Zone 4. In addition to eating fresh fish, villagers also dry some of their catch for later use, and they will use some of the fish to make a fermented fish sauce (pa-daek) that is an important ingredient to many Lao dishes.

### 10.1.8 Income

618. Incomes of the downstream communities are not very different from those of those farther upstream. Average annual cash incomes range from 8.5 million Kip (about US\$1,040) to 27.8 million Kip (about US\$3,475), with most around 15 million Kip (about 1,875) according to the field survey 2011.
619. For the villages farther upstream, sales of crops, livestock, and off-farm incomes were all of relatively equal importance. For communities farther downstream, off-farm incomes, such as wage labour, were more important, with the exception of Pak Ngiep, where sales of crops are considerably higher than for any of the other communities.
620. Fisheries are a significant, though not major, source of income for 3 communities in terms of amount of earnings: Ban Thong Noi and Ban Pak Ngiep.

village	Items									
	On Farm						Off Farm		Total	
	Crop		Livestock		Fishery		Income	%	Income	%
	Income	%	Income	%	Income	%				
Nampa	5,727,273	40.38	4,636,364	32.69	181,818	1.28	3,636,364	25.64	14,181,818	100
Somseun	5,816,667	34.88	5,276,667	31.64	466,667	2.80	5,166,667	30.68	16,676,667	100
Houykhoun	1,533,333	12.79	1,079,167	9.00	20,833	0.17	9,354,167	78.03	11,987,500	100
Thong Noi	4,422,727	27.81	1,727,273	10.86	1,369,091	8.61	8,386,364	52.73	15,905,455	100
Thong Yai	3,233,333	21.86	683,333	4.62	125,000	0.85	10,750,000	72.68	14,791,667	100
Sanaxay	194,286	1.36	337,143	2.36	0	0	13,771,429	96.28	14,302,857	100
Phonsy	852,941	9.99	705,882	8.26	294,118	3.44	6,688,235	78.31	8,541,176	100
Pak Ngiep	15,140,909	54.53	1,436,364	5.17	977,273	3.52	10,213,646	36.78	27,768,182	100
Sanoudom	2,258,333	12.23	458,333	2.48	500,000	2.71	15,250,000	82.58	18,466,667	100

Table 76: Sources of Income for Villages in Zone 4 (Source: Field Survey 2011)

### 10.1.9 Household Expenditure

621. Data on average annual expenditures for the households of Zone 4, as reported in the socio-economic survey 2008, is presented in Table 77. Although some on-farm expenses are expected, for materials and equipment, these were not reported by the households interviewed in the downstream communities.
622. Off-farm expenses ranged from about 55 million Kip to 399 million Kip per year. The main expenses reported were purchase of food, purchase of clothing, and educational costs. Some households also faced significant expenditures for health care, when a member of the family fell seriously ill.

Village	Expense (off farm) Kip/year
Nampa	7,772,727.27
Somseun	11,298,333.33
Houykhoun	8,322,916.67
Thong Noi	13,900,000.00
Thong Yai	9,675,000.00
Sanaxay	8,722,857.14
Phonsy	6,926,470.59
Pak Ngiep	9,745,454.55
Sanoudom	12,716,666.67

Table 77: Household Expenditures for Villages in Zone 4 (Source: Sample Survey 2008)

## 10.2 Land Acquisition and Resettlement Impacts

623. No land acquisition and resettlement impacts are foreseen in Zone 4.

### ***10.3 Impacts on Livelihood Activities***

#### **10.3.1 Crop Cultivation**

624. No impact on crop cultivation is foreseen in Zone 4. In case that farmers would use the Nam Ngiep for small-scale irrigation systems, changing water levels have to be monitored and in case of impact on such systems, access to an irrigation source restored. Meanwhile, discharge during the dry season might allow the use of the Nam Ngiep for irrigation independently from the Project.
625. The re-regulation dam will prevent strong fluctuations downstream and thus impacts on lands. The Project will monitor erosion as well as use of riverbank gardens along the river banks of the Nam Ngiep and in case of unforeseen impacts, households are entitled to compensation as outlined in the REDP.

#### **10.3.2 Livestock**

626. No impact is expected.

#### **10.3.3 Forest Utilization**

627. No impact is expected.

#### **10.3.4 Fisheries**

628. In the first years of production, water quality might change with an impact on fish populations. However, due to the distance from the dam site, this is unlikely. A Fish Catch Monitoring Program will provide early warning in case of such a development, allowing a rapid Project response via its livelihood programs in case of unforeseen impacts.

#### **10.3.5 Other Livelihood Activities including Business and Employment**

629. No impact is expected.

#### **10.3.6 Tenure Security**

630. No impact is expected.

#### **10.3.7 Expenditure patterns**

631. No impact is expected.

### ***10.4 Impact on Social Structures***

#### **10.4.1 Population profile**

632. No impact is expected.

### **10.4.2 Social Relations**

633. No impact is expected.

### **10.4.3 Social Disturbances**

634. No impact is expected.

### **10.4.4 Local authorities**

635. Existing grievance institutions will be strengthened by training of grievance redress committees and following practice with grievance cases.

### **10.4.5 Health including Nutrition**

636. The Project will increase the health situation in the area via its Public Health Action Plan outlined in the SDP, consisting of health awareness programs and support of immunization campaigns as well as training of public health officers.
637. Furthermore, as a precautionary measure, all downstream villages will be provided with repaired (if necessary) or upgraded water supply independent from the Nam Ngiep River to mitigate unlikely adverse impacts from use of river water in the early years of project operation.

### **10.4.6 Education**

638. No impact is expected.

### **10.4.7 Safety**

639. No impact is expected.

### **10.4.8 Youth**

640. No impact is expected.

## ***10.5 Impact on Access***

### **10.5.1 Access to Public Infrastructure**

641. As outlined in the section on health, the Project will provide repairs, if necessary, or upgrade of existing community water supply facilities independent from the river.

### **10.5.2 Access to Information and Services**

642. No impact is expected.

**10.5.3 Access to Urban Areas**

643. No impact is expected.

**10.5.4 Influx of Outsiders, including tourism**

644. No impact is expected.

***10.1 Impact on Ethnicity, Gender, and Vulnerability***

645. No impacts on ethnicity are expected as all villages are majority Lao Loum.

646. No major impacts on gender or vulnerability are expected. They will be the main beneficiaries of the Health programs including water supply.

## CHAPTER 11 - Social Analysis Host Communities

647. The prospective resettlement site is located downstream of the re-regulation dam of the Project on the right bank of Nam Ngiep River; encompassed by the small and big Houay Soup streams. Hat Gniun and Thahuea have been identified by the Project as a specific Zone 5 due to their geographical vicinity to the resettlement site, some current private use of land in the resettlement area, and future sharing of community resources: higher level health and education facilities, markets, bus stations, sport venues, etc. require larger communities to function; the resettlement village provides this opportunity, to be shared with the host villages. All three villages, the two host villages and the new resettlement village, are and will be administratively independent from each other.
648. Ban Hat Gniun is a medium sized village located about 25 kilometres distant from its district centre, Bolikhan; the village is situated on the left bank of the Nam Ngiep River and is about 7 kilometres downstream of the main dam of the Project and about 3 kilometres downstream of the re-regulation dam. Ban Thahuea is also a medium sized village located on the Nam Xao River about 3 km east from Ban Hay Gniun.

### 11.1 Socioeconomic Profile

#### 11.1.1 Demography and Population Changes

649. The population number of Ban Hat Gniun is 371 people in 67 households, with an average household size of 5.5; all are ethnically Lao Loum. The numbers in Ban Thahuea are 265 people in 50 households, with an average household size of 5.3, consisting of Lao Loum and some Khmu households.

Village Name	Local Name	HH	Population		Directly Affected Household	Ethnicity
			Total	Female		
Ban Hat Gniun		67	371	157	-	Lao
Ban Thahuea		50	265	122	-	Lao, Khmu
<b>Total</b>		<b>117</b>	<b>636</b>	<b>279</b>	<b>-</b>	

Table 78: Population profile of Ban Hat Gniun & Thahuea (Source: Field Survey, 2011)

650. Both villages show a slight reduction in population numbers from 2007/8 to 2011. This can be attributed to the limited access to public facilities and employment throughout these years. However, with better access via Access Road, Electricity, and Communication Technology, it is expected that population numbers will again increase over the coming years.



### 11.1.2 Ethnicity

All the residents of Ban Hat Gniun and Ban Thahuea are following the lifestyle and culture of ethnic Lao Loum or Khmu. Their main staple is glutinous rice, which they eat with a variety of fresh or boiled vegetables that they dip in spicy sauces. Fish is also an essential part of almost every meal.



Table 79: Typical House of Lao Loum, Ban Hat Gniun

### 11.1.3 Social Organization and Cultural Relations

651. Different from the villages in 2LR and Zone 3, the Lao Loum communities do not follow a clan system. Nonetheless, families form important internal organization with socioeconomic functions. Qualitative observation shows strong community cohesiveness in Thahuea. As in other parts of Laos, rural-urban networks are formed along migration to urban areas for study or work reasons, but increasingly also via electronic communication technology. With the electrification of the villages in 2014, a further influx of technology can be expected, changing patterns of social organization and cultural relations.

### 11.1.4 Infrastructure

652. Transportation to Ban Hat Gniun and Ban Thahuea is by road or boat. The main access road is a 15 to 17 km dirt road from Ban Nonsomboun, not passable during the rainy season. During the dry season the road can be travelled either by motorbike, tractor, or 4-wheel drive vehicles. With the construction of the Access Road, this is substantially changing, allowing year-round access to the villages from Nonsomboun. The Nam Ngiep River provides access downstream by boat all year round.
653. Ban Hat Gniun and Ban Thahuea only recently connected to the electrical grid; in January

2014. A small number of households have small river-powered generators that produce electricity for a few lamps or TVs.

654. The villagers get their drinking water from wells and creeks. People of Ban Hat Gniun use water from Nam Ngiep for general use. Recently, some gravity flow pipe water systems were built, but these only covered some sections of the village. People of Ban Thahuea are using stream and underground water sources. But there is no water supply system at the point of individual households.
655. They use the Nam Ngiep and Nam Xao for all other water uses, including bathing, washing clothes, and cleaning utensils. They also use the river for agriculture.

Items	Hat Gniun	Thahuea
<b>1. Infrastructure</b>		
Electricity	*Yes	*Yes
Drinking water source	Underground water	Stream and Underground water
Access road	*Gravel Road	*Gravel Road
River navigation	Nam Ngiep	Nam Ngiep
<b>2. Social Welfare</b>		
Market	No	No
Pre Primary / Nursery	No	No
Primary School	Yes	Yes (to 3rd grade only)
Temple	Yes	Yes
Health Centre	No	No
Cemetery	Yes	Yes
Grocery	Yes	Yes
Water supply	Yes	Yes
Underground water well	Yes	Yes
<b>3. Private and Public Organization</b>		
LWU	Yes	Yes
LY	Yes	Yes

Table 80: Infrastructures of Ban Hat Gniun and Ban Thahuea (Source: April, 2007 Survey. November, 2008 Survey; \*Update 2014)

### 11.1.5 School Attendance

656. Availability of educational facilities has a direct impact on school attendance levels of the villagers. Ban Hat Gniun has a school with 4 teachers that provide all 5 levels of primary education. It also serves students from the two nearby communities of Ban Thahuea for

Grades 4 and 5, thus the larger number of students in those grades. The school has only one building in fair condition, but no housing for teachers or other support facilities.

657. School attendance remains a difficult topic as it is often not a high priority for households, particularly when they must struggle to find enough to eat. These families are not likely to have seen the impact of education in improving their daily life. This is especially so for girls who are expected to help in the household chores. Traditionally, girls are supposed to work at home and education is not considered important for that. Education is also more accessible to Lao Loum communities, given that Lao language is the medium of education, especially at higher levels.

Class	Ban Hat Gniun
1	14
2	16
3	9
4	25
5	22
Total	86

Table 81: Numbers of Students of Ban Hat Gniun School (Source: April, 2007 Survey. November, 2008 Survey)

### 11.1.6 Literacy

658. People of Ban Hat Gniun have a higher rate of educational level, the Project's 2011 proxy for literacy. More than 82% of the populations are formally educated on at least primary school level. 24% received secondary school level education and 9 have a university degree.

Education	No. of People
No Formal Education	51
Primary School	222
Secondary and High School	89
University	9

Table 82: Education profile of PAPs of Ban Hat Gniun (Source: Field Survey 2011)

### 11.1.7 Health

659. There is no health centre in the villages or nearby. A village health volunteer is responsible for a standard health and medicine kit provided for the village and responsible for distributing medicines to treat basic common illnesses. Patients who require more care need to be taken to the health centre at Ban Houykhoun, the district hospital in Bolikhan, or the provincial hospital in Pakxan. The first two are about 20 kilometres away, Pakxan as mentioned also by boat and then by car.
660. The Project will establish health and education infrastructure in the resettlement site. The villages of Hat Gniun and Thahuea will have access to these facilities and thus profit from benefit sharing in project development regarding health and education.

### 11.1.8 Gender Issues

661. As a result of focus group meetings in 2012, the following gender issues are relevant for villagers of Zone 5:
- Not many possibilities for higher employment positions for women
  - Interest in alternative cash income opportunities and technical training
  - Fetching of clean water is a problem
662. The project is expected to have little gender-specific adverse impacts, with the exception of the possibility of inadequate nutrition due to impacts on fisheries. This would be of particular concern for pregnant women, women with infants and children, and those infants and children. The project will ensure that any pregnant or nursing women have adequate health care and are able to receive adequate nutrition, since these are critical to the health of the children. Mitigation measures are integrated into the Gender Action Plan and Public Health Action Plan, both outlined in the SDP. Measures to empower women and ensure they benefit from the Project are also incorporated in the GAP.

### 11.1.9 Information and Services

663. The villages of Zone 3 have access to national mobile phone networks. With the connection to the national grid, televisions will also transport information to the villages. Otherwise, the service sector is still just weakly established. With the expected influx of people due to the Project, increased services, for example the opening of new restaurants can be expected. While this enhances socioeconomic development, it could also lead to social disturbances; related social mitigation measures are outlined in the SDP.

#### 11.1.10 Agriculture and Horticulture

Land Use(ha)	Ban Hat Gniun	Ban Thahuea
<i>Private properties</i>		
Residential area	13	8
Rice field	10	20
Other cultivation	152	310
Total	175	338
<i>Public properties</i>		
Cemetery land	1.0	N/A
<i>Forest and others</i>	213	79
<b>Total Land</b>	<b>389</b>	<b>417</b>

Table 83: Land Use Patterns of Ban Hat Gniun and Ban Thahuea (Source: Field Survey 2011)

664. People of Ban Hat Gniun and Ban Thahuea make use of the flat valley on the left bank of Nam Ngiep River as their main productive land. Of the total land use, 61 % is agricultural area, 2.6% is residential area, and, the rest, 36%, is forest land. While most of the villagers

did not provide much information on their upland crops lands, from observation, it appears that much of the unstocked forest land is in fact used for upland crops.

665. On the right bank of the Nam Ngiep, where the resettlement area will be located, there are about 20 ha paddy fields used by the villagers of Ban Hat Gniun and Khum Hatsaykham. The land use right is not registered formally, but compensation measures according to the REDP will be implemented.
666. The villagers rely on subsistence agriculture for their living, with rice the main crop mainly for household consumption, with some surplus being sold. All in addition to rice, people in these 2 villages also grow maize, sugar cane, cassava, banana, and pineapple, with some of these also for sale. At their houses, they have stands with flat beds where they grow spices and herbs, at a high enough level to protect the plants from their animals. They also grow vegetables around the homestead and along the riverbank. Riverbank gardens, use and productivity, will be assessed and included in the updated asset register. Villagers surround the vegetable plots with woven bamboo fences to demarcate use boundaries and to keep out animals.

#### **11.1.11 Rice Sufficiency**

667. During the 2011 survey, rice sufficiency was not assessed for Zone 5. The Socioeconomic Survey for the Access Road conducted in March 2014 found that all households in Hat Gniun and in Thahuea have enough rice to eat for 12 months round, except one vulnerable household who relies on food support from the village.

#### **11.1.12 Forest Utilization**

668. The villagers make use of many of the surrounding natural resources, in particular the community forests and the river. Their houses are built from wood and bamboo from the forests and grasses from the fields. Their food is cooked with firewood gathered from the forests. Many kinds of food, such as mushrooms, bamboo shoots, vegetables, and herbs are gathered from the forests. Villagers plant fruit trees and other economic or commercial trees. Farmers have started recently planting commercial trees, such as teak (*Tectonagrandis*), auri (*Acacia auriculiformis*), eucalyptus (hybrid for pulp), and Agar wood (*Aquilaria* spp.).
669. The fruit trees are mostly for domestic consumption. During visits to local markets and markets in nearby towns, nearly all the local fruits sold in the market were from the forests. Commercially grown fruits tended to be from China or Thailand. One of the few exceptions is pineapple, grown in fairly large numbers by some households for sale.

#### **11.1.13 Hunting**

670. Villagers are hunting in the forests around the villages, partly for own consumption, partly for sale, even though until now limited access to markets reduced the possibilities for the latter. The NNP1 EMO together with public authorities will control that no NNP1 workers are hunting in the area and that trade of hunting goods is restricted according to the national

and international regulations.

#### 11.1.14 Fisheries

671. The river as well as larger tributaries and smaller streams are also an important source of nutrition, with almost every meal including some fish, either fresh or preserved. Once the resettlement site is established, the usage of fisheries will become a shared resource with the host communities and thus has to be managed. The Program has assigned a budget for a fisheries co-management program.

#### 11.1.15 Livestock

672. All households raise a variety of animals. Chickens, ducks and pigs roam around the houses. Some larger pigs are kept in pens. Other large animals such as water buffaloes, cows and goats are usually left to roam or herded during the day before being brought back to stay near the house at night. The animals are raised both for domestic consumption and for sale. The smaller livestock in particular are an important source of protein, though second to fish.

Livestock	Total Number of Livestock in Hat Gniun	Total Number of Livestock in Thahuea
Cattle	289	302
Buffalo	184	122
Pigs	84	132
Goats	6	21
Chicken	1153	930
Fighting Roosters	32	42
Ducks	446	263

Livestock in Zone 5 (Source: SES Access Road 2014)

#### 11.1.16 Other Sources of Cash Income

673. The main sources of cash income of people in Hat Gniun, Hatsaykham, and Thahuea are the sale of livestock and of agricultural products. Secondary sources of cash income are the sale of surplus fish, of Non-Timber Forest Products (NTFPs), and handicrafts. These goods are either sold to other villagers or taken for sale to the market at Pakxan. Occasionally a trader will come to the villages to buy these products.

#### 11.1.17 Household Expenditure

674. The main expenditures of the villagers in all 5 communities are for clothing and contributions to social events, such as marriages, funerals, and celebrations of new-born. Other important expenditures are on agricultural tools, supplies and other costs for their children's education of their children, and last but not least their healthcare.

Consumption per month per person		Hat Gniun		Thahuea	
List	Unit	Units	LAK	Units	LAK
Rice	Kg	12.2	60,801	10.4	52,011
Raised Fish	Kg	0.6	7,427	0.7	8,301
Caught Fish	Kg	2.4	29,085	2.1	25,090
Meat	Kg	1.5	52,973	1.3	47,184
Eggs	Unit	8.6	8,634	10.6	10,621
MSG	Gram	70.0	770	103.4	1,137
Fruits	Kg	2.6	17,876	1.2	8,701
Vegetables	Kg	4.5	17,809	3.2	12,691
Lao Khao	Litre	0.1	1,165	0.2	1,960
Beer	Bottles	2.6	25,902	4.1	41,193
Candy / Sweets	Pack	10.2	30,551	16.0	48,058
Cigarettes	Pack	1.6	8,166	2.2	11,182
<b>TOTAL</b>			<b>261,159 LAK</b>		<b>268,129 LAK</b>

Table 84: Average Consumption per Month per Person in Zone 5 (Source: SES Access Road 2014)

Cash Expenditures per month per person	Hat Gniun	Thahuea
Electricity bill	-	116
Personal services (haircuts, manicures, etc.)	934	571
Production-related investments with a value less than 5 million LAK and not included goods mentioned above	1,842	963
Events at home (Marriage, Bun, Baci, funerals, etc.)	1,448	4,847
Donations and participation in other events outside the house	6,696	4,673
Savings payment	-	-
Village ceremonies	2,026	9,783
Reparation costs (except accommodation) incl. oil for engines	7,468	7,086
Debt payment (incl. interests repayment)	390	37,839
Traditional health person (include cost of transport and medicines)	7,269	53,768
Buying of agricultural investment (other than tools and vehicles)	13,317	14,768
Personal care and cosmetics (toothpaste, soap, shampoo, face cream, etc.) and washing powder	13,341	20,786
Gold and Jewellery	639	17,746
Other significant non-food payment	19,231	39,893
School-related expenditures (school fees, books, tutoring, transportation to school)	25,412	44,149
Petrol / diesel (for boats, motorbikes, car, etc.)	26,606	61,250
Visits to doctors, clinics, hospitals (include cost of transport and medicines)	54,612	-
Clothes and shoes	39,237	71,143
Investment in accommodation (construction, beds, windows, repairs, etc.)	41,901	46,250
<b>Total (LAK)</b>	<b>262,369</b>	<b>435,629</b>

Table 85: Average Non-Food Expenditures per Month per Person in Zone 5 (Source: SES Access Road 2014)

### 11.1.18 Poverty

676. As outlined in the table below, two villagers in Thahuea are absolutely poor. At the same time, they are also in other categories of vulnerability. In this case, livelihood activity programs alone will not be sufficient to enhance income, but the specific kinds of vulnerability have to be addressed. Suggestions have been elaborated together with the PAPs and the village chief and the Project will elaborate these suggestions described below, into Project activities.

### 11.1.19 Vulnerability

677. In both villages of Zone 5, there are vulnerable households as outlined in Table 86. A qualitative analysis of each household situation has been conducted by the Vulnerability Officer, so that special attention can be paid to the specific kinds of vulnerability. Recommendations from consultations include either (i) regarding extended assistance, (ii) alternative livelihood options, and (iii) health.

Village	No of vulnerable HH*	Landless	Elderly	Female	Disabled	Absolutely Poor	Other Problems
Thahuea	2	1	1	1	1	2	0
Hat Gniun	5	0	2	1	2	0	0
Total	7	1	3	2	3	2	0

Table 86: Vulnerable person profile of each village in Zone 5 (Source: Vulnerability Report Access Road 2014)

*\*Remark: Note that HHs might be found with several indicators of vulnerability*

## 11.2 Land Acquisition and Resettlement Impacts

678. The host communities are impacted by land acquisition in the resettlement site and for the construction of the Access Road. Details on the latter are outlined in the LACP-AR.

679. There is no loss of living structures expected for Zone 5. Furthermore, any secondary structures in the future resettlement site have been identified. However, in case such structures will be built before the Cut-Off-Date, the Project will compensate them.

680. A preliminary survey of existing land use at Houaysoup resettlement site was carried out in June 2011, finding existing land uses of 5.6 ha of paddy, 50.1 ha of grassland and some areas under shifting cultivation. A second survey in October 2012 found that households from Hat Gniun and Hatsaykham use land in Houay Soup. Forty-four (44) households claim a total of 70.5 ha of land, most for upland rice cultivation with only small areas for paddy or commercial tree cultivation. Only 3 of the 21 households of Hat Gniun currently use the land they claim at Houay Soup, totalling about 9 ha. Details are outlined in the REDP.



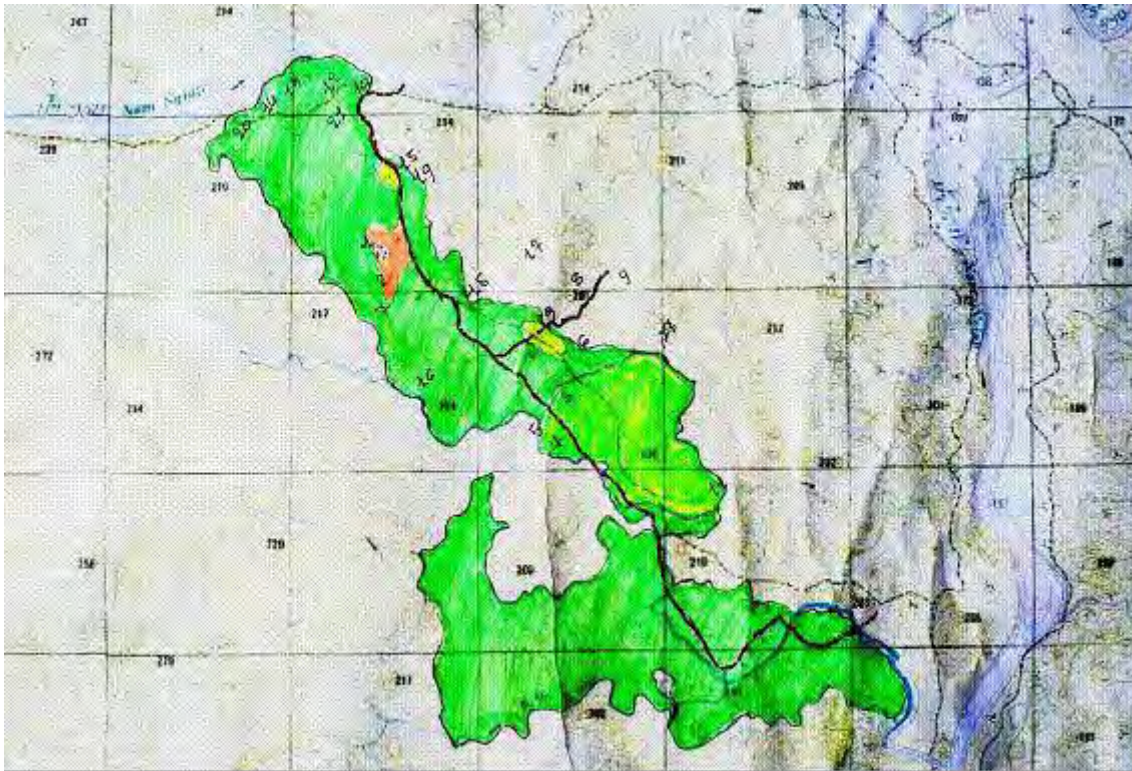


Figure 32: Marked land use at Houay Soup by households from Hat Gniun (Source: 2012 Survey)

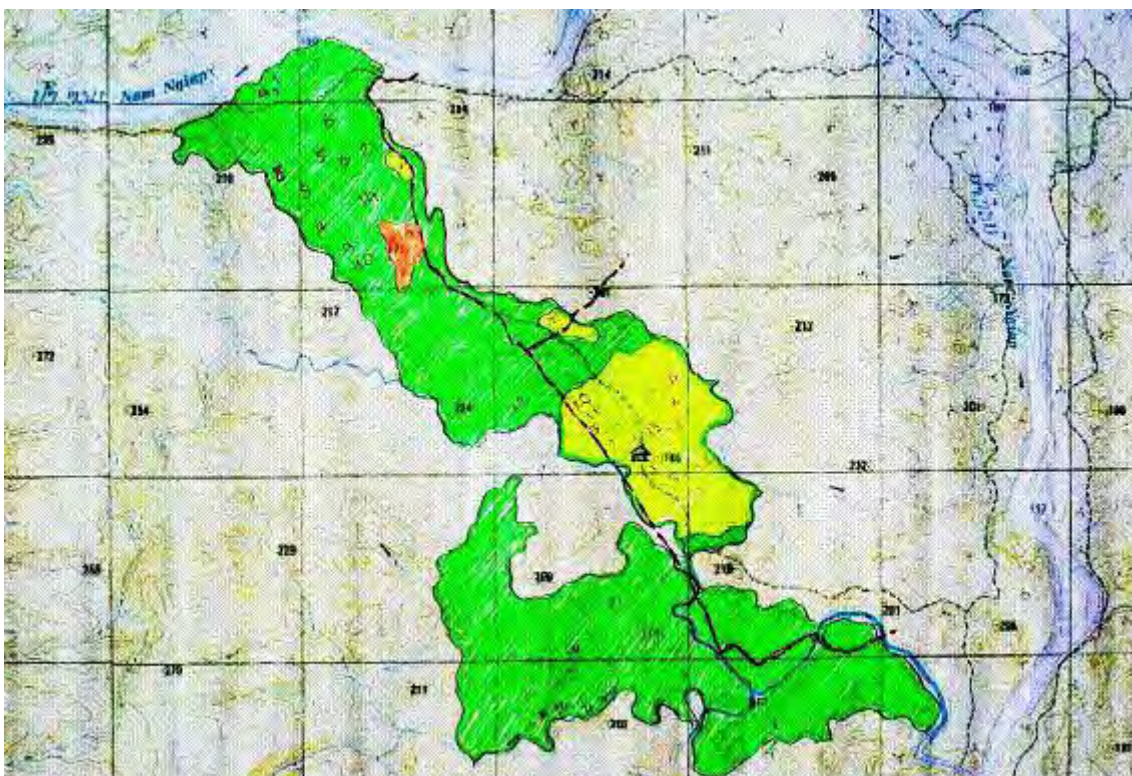


Figure 33: Marked land use at Houay Soup by households from Hatsaykham (Source: 2012 Survey)

*REMARK: Red areas: existing paddy fields; yellow areas: grass land; green areas: unstocked forest.*





Figure 34: PAPs indicating land use / claims in Houay Soup (Source: 2012 Survey)

### ***11.3 Impacts on Livelihood Activities***

#### **11.3.1 Crop Cultivation**

681. Cash crop cultivation might increase with increased market access due to the Access Road and the possibility to engage in other crop cultivations and trainings provided by the Project. Meanwhile, improved techniques in rice and other crops cultivation instigated by the Project's livelihood program will improve the productivity of crop cultivation. The Project's focus on joint trials in the villages, complementing training sessions, will reduce the risk of lack of ownership and increase the sustainability of the program.

#### **11.3.2 Livestock**

682. Similar than crop cultivation, livestock development will be supported by the Project's livelihood programs with trials on type of livestock and techniques of raising and breeding of livestock. PAPs and Project have to take into account the needs and risks of intensified livestock raising. With an increase of livestock numbers, the availability of fodder and pasture will have to be assessed and value chains considered during the implementation of specific activities. Also, monitoring of livestock health and the availability of veterinary services is essential.

#### **11.3.3 Forest Utilization**

683. Forest access will be limited to the left bank side. If agreements do not hold, then a co-management program might be necessary.
684. Workers and camp followers might increase pressure on local forest resources. The Project obliges Project workers to follow a code of conduct, which prohibits activities in local forests.

#### **11.3.4 Fisheries**

685. While land is clearly divided between host communities and resettlement site by the Nam

Ngiep River, fisheries have to be shared between host communities and resettlers as well as within resettlers. A Fisheries Co-Management Program will be implemented.

686. In the first years of production, water quality might change with an impact on fish populations. A Fish Catch Monitoring Program will provide early warning in case of such a development, allowing a rapid Project response via its livelihood programs.

### **11.3.5 Other Livelihood Activities including Business and Employment**

687. PAPs will have the opportunity to engage in off-farm activities to make use of the improved access to markets via the access road towards Bolikhan and Pakxan, as well as electricity and telecommunication provided in the resettlement site.
688. Livelihood programs will train people not just in skills for new or enhanced professional activities, but also in the necessary additional qualifications and pre-requisites for successful and sustainable employment and business development, such as marketing support and microfinance options for business ideas.
689. Like people from Hatsaykham, people from Hat Gniun and Thahuea have employment and business opportunities from the start of Project activities and currently engaged in construction of the access road. Further project employment opportunities will be available at the power house. These opportunities request skilled labour, for example technicians. Project employment can increase livelihood incomes for a period of time and the skills deriving from this experience can be used for alternative livelihood opportunities later on.

### **11.3.6 Tenure Security**

690. The Project will provide land titles for all replacement land in Zone 5 and thereby increase tenure security for the impacted PAPs. Furthermore, this process will have an indirect impact on other owners by strengthening the titling process in the area, including increased experience of district staff. Land will be increasingly used as a market commodity; with prices increasing given decreasing supply opportunities due to loss of land to construction and resettlement site and increasing demand due to potential influx of people seeking opportunities from the Project. The Project's PRLRC has set a cut-off-date for April 11, 2014, which should reduce the risk of opportunistic population influx. The cut-off date will be communicated to all affected villages before mid of June 2014.

### **11.3.7 Expenditure patterns**

691. The above outlined changes in livelihood activities will all lead to stronger market economy integration, including the availability of cash. While the improved income status will lead to a quantitative increase of expenditure, this will likewise lead to a qualitative change of expenditure patterns. Expenditure decisions become essential for the sustainability of household livelihoods. Family financial training offered by the Project will enable households to understand these changes and it will highlight the necessity that long-term investments balance short term consumption. Livelihood trainings will furthermore

integrate potential risks into their curricula.

## **11.4 Impact on Social Structures**

### **11.4.1 Population profile**

692. Out-migration will reduce due to the opportunities provided resulting from an enhancement of public infrastructure and socioeconomic situation. This will lead to a potential enhancement of population growth. While this might lead initially to increased pressure on socioeconomic resources, it will lead to a stronger and innovative development of the local economy and reduce the risk of vulnerable households encompassing only elderly people staying behind, when young people migrate to urban areas.

### **11.4.2 Influx of Outsiders, including tourism**

693. Project impact on the influx of outsiders for Zone 5 will be substantial, encompassing resettlers from 2LR, workers, and camp followers. The Project has prepared necessary mitigation measures, amongst others a Social Management and Mitigation Program as part of the Public Health Action Plan outlined in the SDP.
694. In the area, tourism is currently no important factor. However, the dam site and reservoir could become a destination for people from the urban areas of the Province, above all for traditional large family picnics as for example Nam Ngum 1. This will be an increasing business opportunity for people in the area; via its livelihood programs the Project can support villagers to gain from tourism and the cultural and health awareness programs will reduce vulnerability to influx of outsiders.

### **11.4.3 Social Relations**

695. The available facilities as well as better access to urban areas will change the geographic boundaries of social networks. Even though villagers already have networks extending to the national and international level, social relations to people outside the village boundaries, above all at the regional and national, will enhance.

### **11.4.4 Social Disturbances**

696. Access to urban areas, livelihood developments, and cash-compensation values will have potential impacts on social disturbances, requiring social management by the PAPs with support by the Project, similar as for Zone 3 and 2LR outlined in 8.4.4.
697. As for Hatsaykham the social management and mitigation program will curb risks from disturbances from the construction site.

### **11.4.5 Local authorities**

698. As described in section 8.4.5 for 2LR, cooperation with local authorities along the livelihood

programs and infrastructure development will indirectly increase their capacities and the scholarship program will provide potential future, qualified civil servants. Existing grievance institutions will be strengthened.

699. As described for Hatsaykham, during the construction, project cooperation with police and health care personnel via the social management and mitigation program will increase the capacities of involved public authorities.

#### **11.4.6 Health including Nutrition**

700. The Project will increase the health situation in the area via its Public Health Action Plan as described in section 8.4.6, as well as diversified nutrition via livelihood and fisheries programs. Year-round water supply will furthermore be provided.
701. Health issues due to the presence of construction workers is a risk factor and the Project has prepared the necessary precautions including rules and regulations for workers, public health activities in the communities, and a social management and mitigation program for camp followers. Young people will be prepared by health awareness campaigns.

#### **11.4.7 Education**

702. Education is a core component of the Project's community as well as livelihood development program, including scholarships and vocational training. Education is the key to successful livelihood adaptation and support requested by the PAPs. The program will strengthen the level of education in the area with all positive consequences for social and economic structure. Repair of existing primary school facilities in the villages and new school facilities up to high school-level accessible in the resettlement area will allow an enhanced learning environment. Reduced distance to urban areas might also attract qualified teachers more easily.

#### **11.4.8 Safety**

703. The increasing availability of cash as well as the consequent increase of non-land based assets would increase the potential risk for theft in the area. However, awareness trainings, investment in education, explanations on safety through bank deposits, and other community development activities will mitigate this risk.
704. These programs will also mitigate risk of adverse impacts from construction as outlined above, for example substance abuse. Necessary monitoring has to be implemented to regulate this development.

#### **11.4.9 Youth**

705. Impact on youth has already been mentioned at several points above. The project will provide livelihood opportunities via its livelihood program, but as well and above all via its education program. Furthermore, cultural and health awareness programs will prepare the young generation for the changes not just due the project but also due to general

developments of the area. Easy access to Bolikhan and Pakxan will lead to integration with larger communities and change aspirations and role models. As outlined above, new opportunities and potentially higher cash income levels due to employment and business opportunities will strengthen the role of young people with the families.

## ***11.5 Impact on Access***

### **11.5.1 Access to Public Infrastructure**

706. The Project will provide new public infrastructure on national standards in the resettlement site, to which host communities will have access. This infrastructure will encompass a school, health centre, village hall, bus station, and market, but also water supply, electricity, and access roads. Furthermore, the Project will repair existing primary schools and construct bus stops along the Access Road. More details can be found in the REDP.

### **11.5.2 Access to Information and Services**

707. There will be no impact on access to information; telecommunication is available in the area since a short time before Project commencement.
708. With a small-town-sized resettlement site and access to urban areas, service provision will enhance, for example assortment of shops. This will furthermore be supported by the livelihood programs, as new shops will open, handicraft skills will be improved, and health services improved.

### **11.5.3 Access to Urban Areas**

709. The key impact of the Project regarding access to urban areas is the construction of the access road, reducing travel time to the next urban area from two hours to 30 to 45 minutes. The development of an all-weather and all-season road is also essential, eliminating the risk of being isolated during parts of the year. Regular bus services will increase the mobility of people.

## ***11.6 Impact on Gender Issues***

710. As a result of focus group meetings in 2012, the following gender issues are relevant for villagers of Zone 5:
- Not many possibilities for higher employment positions for women
  - Interest in alternative cash income opportunities and technical training
  - Fetching of clean water is a problem
711. The Project is expected to have little gender-specific adverse impacts, with the exception of the possibility of inadequate nutrition due to impacts on fisheries. This would be of particular concern for pregnant women, women with infants and children, and those infants

and children. The Project will make sure that any pregnant or nursing women have adequate health care and are able to receive adequate nutrition, since these are critical to the health of the children. Mitigation measures are integrated into the Gender Action Plan, outlined in the SDP. Measures to empower women and ensure they benefit from the Project are also incorporated in the GAP.

### ***11.7 Impact on Ethnic Issues***

712. Villages in Zone 5 are mainly Lao Loum, with just a few Khmu households. Likelihood of conflicts with the mainly Hmong communities settling at the resettlement site are not expected by the communities, pointing at continuing positive relations with Hatsaykham over the last decades. The Project, nonetheless, will have to monitor developments and support the communities in managing their relations in a positive and productive manner; including the common usage of natural resources outlined above. No cultural resources will be directly impacted in Zone 5. Nonetheless, preservation of archaeological artefacts in Thahuea will be supported by the Project. In old times when tracks were not constructed, this area could only be reached from the Mekong valley by boats coming upstream on the Nam Ngiep River. The boat trip ended at Thahuea because the river was no longer navigable beyond this port due to cascades and rapids. From the north, a land route connected Thahuea to the Plateau of Xieng Khouang. Caravans ensured transportation of goods between these two centres. A detailed description of resulting structures, nowadays ruins, in Thahuea village can be found in the IEE Access Road. Details on related Project activities can be found in the SDP. Furthermore, the SDP discusses relations between villagers and construction works, which will partly affect Hat Gniun and Thahuea next to Hatsaykham as well.

### ***11.8 Impact on Vulnerability***

713. The Project will have positive and potentially adverse impacts on vulnerable households of the host communities. The development of access infrastructure in the villages, i.e. the access road and bus stop, as well as access to newly developed public infrastructure in the designated resettlement site, including health centre and school, will all lead to better access of vulnerable households and thereby improve their integration into local development; as do specific livelihood development programs for PAPs and easier access to provincial and national urban areas and related facilities. Increasing numbers of households in the wider area due to resettlement and construction impacts might put some pressure on vulnerable PAPs' livelihood; above all during the construction phase. The Project will provide special assistance and above all continuous monitoring during this phase to mitigate all potential as well as unforeseen impacts in close cooperation with the vulnerable households.

## CHAPTER 12 - Social Analysis Access Road

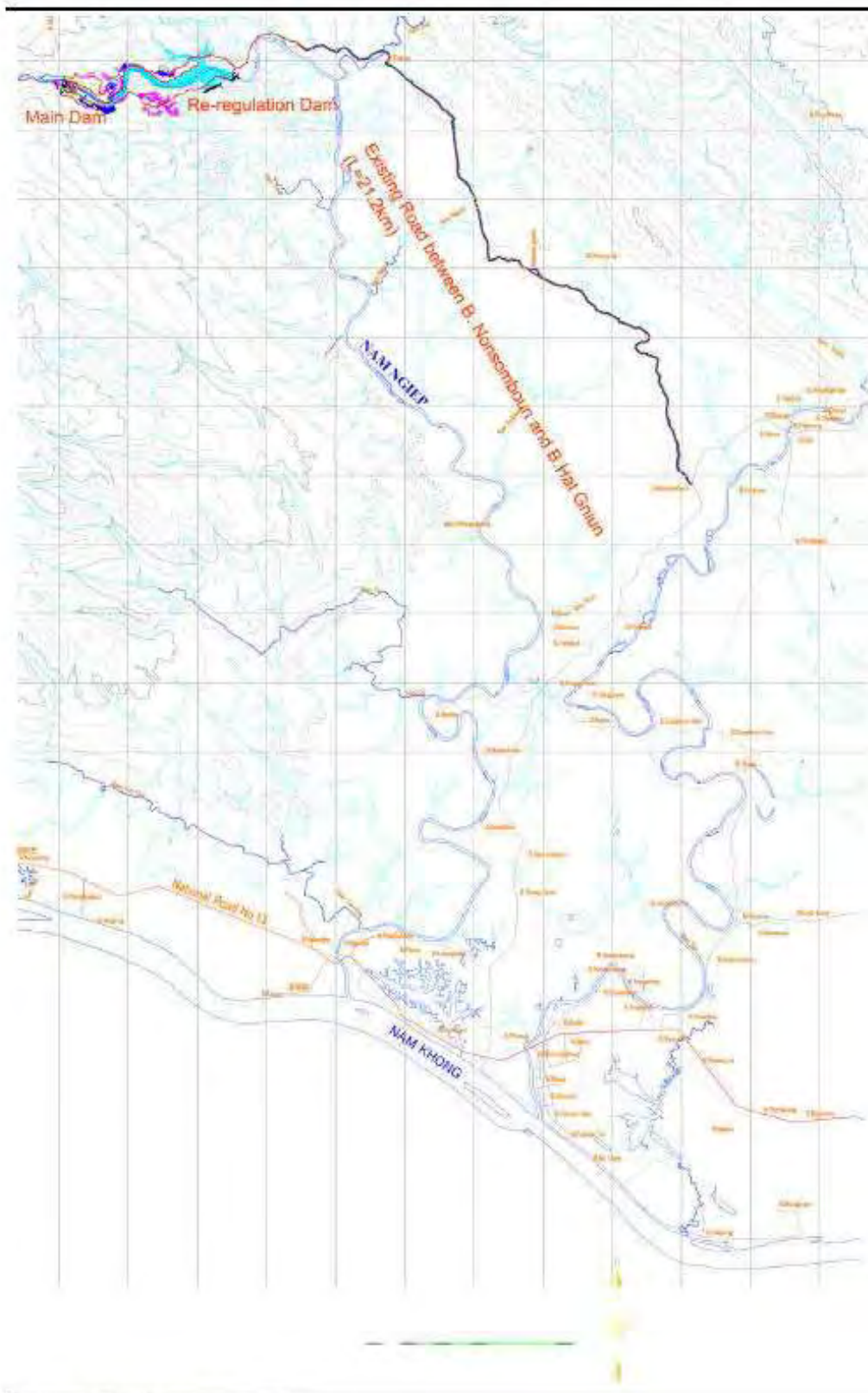
### 12.1 Overview

714. To connect the dam site and the resettlement site next to it with the major road network of Lao PDR, access roads have to be constructed or reconstructed if a road exists but is considered inadequate for the Project. These preliminary works are essential for allowing project construction in time and therefore the Project prepared ahead of the main social documents (SIA, REPD, and SDP), a Land Acquisition and Compensation Plan – Access Road (LACP-AR). It got endorsed by MoNRE in 2013. In January 2014, ADB provided technical advice to help NN1PC prepare a LACP-AR which meets 2009 SPS requirements. Based on this LACP-AR, compensation for land acquisition by the Project got prepared and implementation started early 2014. The following paragraphs provide a summary, with updated data and further details to be found in the LACP Access Road.
715. The project site is located 41 kilometres north of the provincial capital of Bolikhamxay, Pakxan. The National Road 13 South linking Vientiane Capital with Pakxan is well paved and regularly maintained. The provincial road from Pakxan to Ban Nonsomboun, 20km long, was recently renovated by GoL to be an asphalt-paved road, facilitating year-round transportation. Because these roads are already in good condition, they can handle the transportation load expected from the project, and will not require any upgrade or further renovation. Therefore, they are not included in the scope of the Project's Access Roads. The impact assessment for the Access Road focuses on the section from Ban Nonsomboun to the Project Site at Ban Hat Gniun. From there, a 21 kilometres dirt road is currently used to travel to Ban Hat Gniun.
716. A temporary road presently exists along the left bank of the Nam Ngiep River in the section between Ban Hat Gniun and the dam site; this road was built for geological surveys for JICA-F/S. This temporary road would be upgraded and used by the contractors for access to the left bank at the dam site during the construction period. However substantial maintenance and repair costs would be required if it were to be used as a permanent Access Road because of the steep terrain and complex topography. Plans call for additional temporary Access Roads on both the left and right banks of the river, to reach key components of the Project. Plans also call for a permanent Access Road to be newly built. The planned alignments of these roads are presented in Figure 35 and Figure 36.
717. For the compensation process, the differentiation between permanent and temporary roads will not have any consequences. As the construction and improvement of roads will proceed in several steps over several years up to the Commercial Operation Date (COD), currently expected to be in 2019, the Project will compensate PAPs fully for all impacted land by the Access Road Construction as *permanent* impact, as requested by GoL.
718. Thus from Ban Nonsomboun to the dam site, improvement of existing dirt roads and construction of new roads will be required for the following lengths:



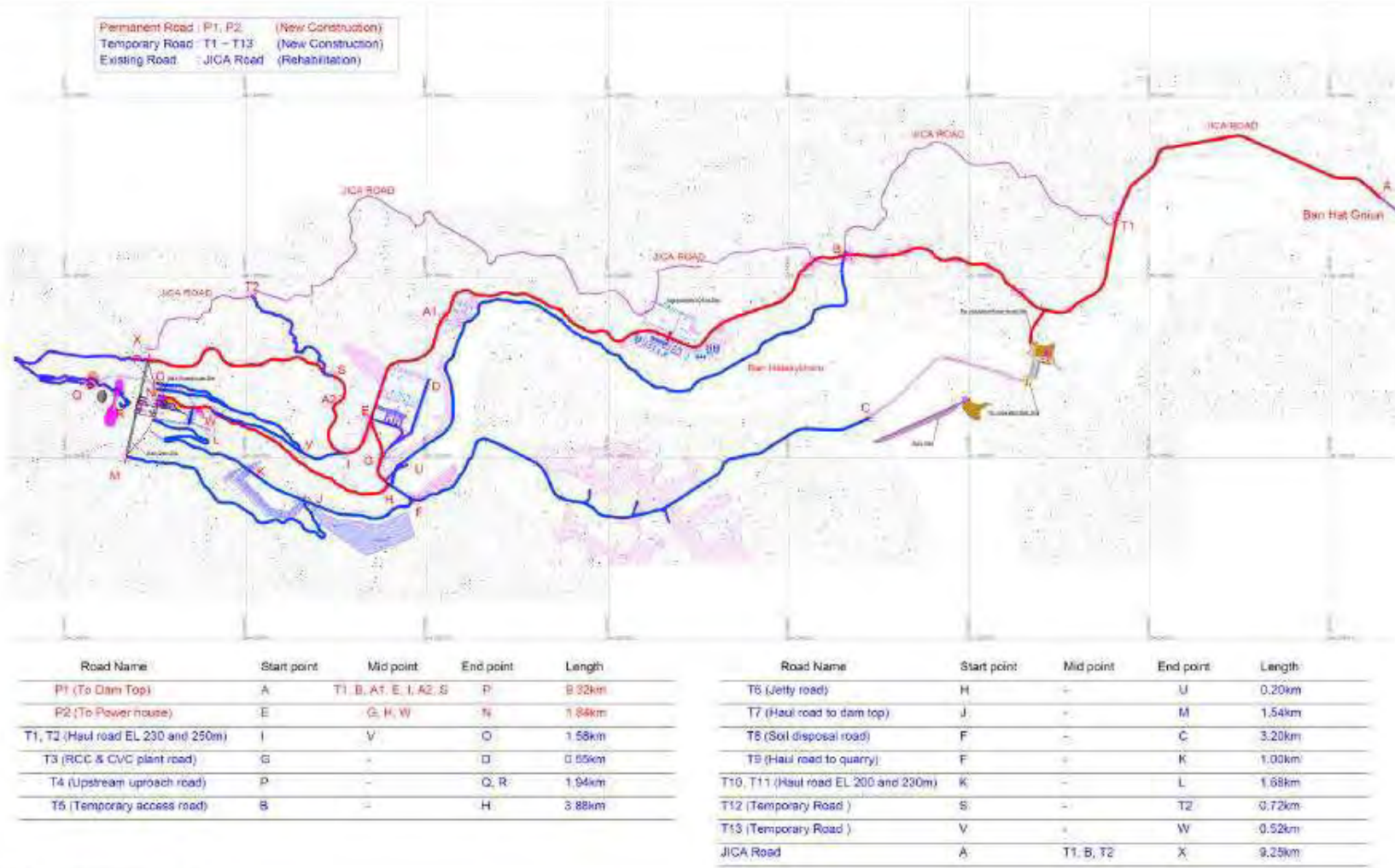
- Upgrading the road from Ban Nonsomboun to Ban Hat Gniun and the JICA road from Ban Hat Gniun to the dam site, totalling 30.45 km length
- A new permanent road (completely new construction) from Ban Hat Gniun to the dam site, 11.16 km length
- Temporary roads (new construction) between Ban Hat Gniun and the dam site, totalling 16.81 km length
- Total length of Access Road improvements, upgrade, and new construction between Ban Nonsomboun and the NNP1 dam site will be 58.42 km. Detailed descriptions of the routes are presented in Section 2 (Description of the Project) in the IEE for the Access Road.

719. The compensation process for these different roads has evolved in phases, starting from January 2014 and is scheduled to be completed end of June 2014. The compensation principles and the policy framework are thereby the same as those which govern all other Land Acquisition and Resettlement activities of the Project described in the REDP.



Source: NNP1PC (August 2013)

Figure 35: Access Road from Ban Nonsomboun to project site



Source: NNP1PC (August 2013)

Figure 36: Temporary and Permanent Access Roads between Ban Hat Gniun and Dam Site

## 12.2 Socioeconomic Profile

720. The upgraded and newly constructed portions of the Access Road will pass through 3 villages and 1 sub-village: Ban Nonsomboun, Ban Thahuea, Ban Hat Gniun and Ban Hatsaykham (a sub-village of Ban Hat Gniun), all in Bolikhan District, Bolikhamxay Province. Residents in a fifth community, Ban Sisavath, also in Bolikhan District, have productive lands within the ROW; while their settlement area lies somewhat distant from the Access Road, their village boundaries extend over the Access Road. For community profiles of Hatsaykham, Hat Gniun, and Thahuea, please refer to Chapters 9 and 11, for a comparison with Nonsomboun and Sisavath to the LACP-AR. The following paragraphs provide information on Nonsomboun and Sisavath for reasons of comprehensiveness.

### 12.2.1 Population

721. In Nonsomboun village live 169 households, in Sisavath village 304. Both are mainly Lao Loum with a few Hmong families. The initial asset survey found that in each of the two villages one impacted household is Hmong. Populations of the 2 communities and their ethnic composition are presented in Table 87.

Village	No. of HH	No. of maximum impacted HH (of which non-Lao Loum HH)	No. of Population		Lao Loum		Hmong* Khmu**	
			Total	Female	Total	Female	Total	Female
Nonsomboun	169	60 (1 Hmong)	956	472	939	464	17*	8
Sisavath	340	39 (1 Hmong)	1,858	941	1,858	941	9	5

Table 87: Profile of the Affected People from the Construction of the Access road (Sources: Field Survey 2011 and Bolikhan District Office 2013)

### 12.2.2 Infrastructure, Facilities and Service

722. Ban Nonsomboun lies about 19.9 km from Pakxan along the paved road to Bolikhan and north to Xieng Khouang. Ban Sisavath lies some 3.5 km northeast from Ban Nonsomboun, along the paved road and just to the southwest of Bolikhan district town. Both are growing rapidly since the completion of the paved road through the communities. The easy access to Pakxan and from there to elsewhere in the country has attracted many new settlers to these communities. The paved road also helps make many new construction materials available, so people tend to prefer to build their homes with concrete and other materials more permanent than wood and bamboo.
723. The easier access to markets has led to a diversification in agricultural production in Nonsomboun and Sisavath, with many households growing commercial crops, including commercial trees, as well as crops for their own consumption. The improved transportation together with electrification has contributed to increased diversification of the economies of these two villages. Though most people continue to depend mostly on agriculture for their livelihoods, there are a greater number and variety of other economic activities, including

small restaurants, small groceries, and other stores and services, after the road was improved.

724. Nonsomboun and Sisavath are connected to the electric grid. The other three villages have just been connected in early 2014 via a rural electrification program, implemented by EdL (Électricité du Lao) and supported by the World Bank. Before, at Ban Hat Gniun and Khum Hatsaykham, ten small stream-powered electric generators each produced electricity sufficient for a few lamps or a television.
725. Sisavath and Nonsomboun are connected to the district town water system. The villagers in the other villages tend to use water from streams and springs for drinking and cooking. There are also a few wells in Hat Gniun and Thahuea, which are used for drinking and cooking water. Water for washing, raising animals, and other uses is obtained from the river and streams.
726. There are primary schools in all the villages. None have a secondary school, with Sisavath and Nonsomboun being able to use the district school nearby. Ban Nonsomboun and Ban Sisavath each have a Buddhist temple and their own cemeteries. None of the villages has a health centre: patients have to travel to the nearest district health centre at Bolikhan District, adjacent to Sisavath and 3 kilometres away from Ban Nonsomboun. Table 88 below provides a summary of the infrastructure of these 2 communities.



Ban Hat Gniun

Ban Thahuea

Ban Nonsomboun

Figure 37: Conditions of the Existing Access Road around the Affected Communities

Village	Infrastructure Service			Social Welfare						
	Electricity	Water Supply	Road	Market	1 <sup>o</sup> school	2 <sup>o</sup> school	Health Centre	Temple	Cemetery	Grocery
Nonsomboun	√	√	√	-	√	-	-	√	√	√
Sisavath	√	√	√	-	√	-	-	√	√	√

Table 88: Existing Infrastructure of Villages Directly Affected by Access Road (Source: Field survey 2011)

### 12.2.3 Education and Health

727. Availability of educational facilities has a direct impact on educational levels of the villagers. In contrast to the other villages along the Access Road, the children of Ban Nonsomboun and Ban Sisavath, living close to Bolikhan and Pakxan, have many more opportunities and

much greater convenience to continue their studies to at least the secondary level at the district centre.

728. Though there are no health centres in the villages, Nonsomboun and Sisavath are close to Bolikhan District town and therefore have good access to health facilities there.

#### **12.2.4 Agriculture and Horticulture**

729. The villagers rely on subsistence agriculture for their living, with rice the main crop mainly for household consumption, with some surplus being sold. All in addition to rice, people in the two villages also grow maize, sugar cane, cassava, banana, and pineapple, with some of these also for sale. At their houses, they have stands with flat beds where they grow spices and herbs, at a high enough level to protect the plants from their animals. They also grow vegetables around the homestead. Villagers surround the vegetable plots with woven bamboo fences, again to keep out animals. All households raise a variety of animals. Chickens, ducks and pigs roam around the houses. Some larger pigs are kept in pens. Other large animals such as water buffaloes, cows and goats are usually left to roam or herded during the day before being brought back to stay near the house at night. Animals are an important source of income for the families. Details on household incomes are presented in the LACP-AR.
730. The villagers also make use of many of the surrounding natural resources, in particular the community forests and the river. Their houses are built from wood and bamboo from the forests and grasses from the fields. Their food is cooked with firewood gathered from the forests. Many kinds of food, such as mushrooms, bamboo shoots, vegetables, and herbs are gathered from the forests, and wildlife commonly hunted. The rivers are also an important source of nutrition, with almost every meal including some fish, either fresh or preserved.
731. Villagers plant fruit trees and other economic or commercial trees. Farmers have started recently planting commercial trees, such as teak (*Tectonagrandis*), auri (*Acacia auriculiformis*), eucalyptus (hybrid for pulp), and Agar wood (*Aquilaria* spp.). Villagers in Sisavath and Nonsomboun in particular have started planting these commercial trees more extensively, given the proximity of their lands to the all-weather paved road.
732. Farmers have also planted rubber trees in recent years, and there is evidence that more farmers will start to plant rubber, because the earnings were relatively good in recent years. However, as the supply has increased considerably throughout the country in recent years and demand from China has declined with the slowing of the economy, prices and profits for rubber have decreased.
733. The fruit trees are mostly for domestic consumption. During visits to local markets and markets in nearby towns, nearly all the local fruits sold in the market were from the forests. Commercially grown fruits tended to be from China or Thailand. One of the few exceptions is pineapple, grown in fairly large numbers by some households for sale.
734. Villagers in all communities raise livestock, from cattle and buffalo to pigs and poultry. The animals are raised both for domestic consumption and for sale. The smaller livestock in



particular are an important source of protein, though second to fish.

735. As noted above, the economies of Nonsomboun and Sisavath are diversifying with the improvement of the all-weather road and the provision of electricity. Although most households still depend primarily on agriculture, many are supplementing their livelihoods with secondary occupations such as small shops and food stalls.

### **12.2.5 Further Sources of Incomes**

736. Salaries and wages become an important income source for the people of Nonsomboun and Sisavath. Other main sources of cash income of people in Nonsomboun and Sisavath are like in the other villages the sale of agricultural products, with secondary sources of income from sale of commercial tree products as well as NTFPs, and handicrafts.

### **12.2.6 Expenditures**

737. The main expenditures of the villagers in all 5 communities along the Access Road are for petrol, housing, and health. Other important expenditures are clothing; contributions to social events, such as marriages, funerals, and celebrations of new-born; debt payments; and savings. It should be noted, that expenditure patterns vary between the different villages. Detailed numbers can be found in the LACP-AR.

### **12.2.7 Vulnerability**

738. A qualitative analysis of each household situation has been conducted by the Vulnerability Officer, so that special attention can be paid to the specific kinds of vulnerability, either regarding extended assistance, alternative livelihood options, and/or health support. Impact in Sisavath and Nonsomboun is limited and so is any impact on potential vulnerable households. From impacted households, 5 in Nonsomboun and 2 in Sisavath are female-headed households; none of the 7 households is classified as poor. A member of a further impacted household in Nonsomboun is physically disabled, using a wheelchair; this household is also above national minimum standards.

## ***12.3 Land Acquisition and Resettlement Impacts***

739. The access road will mainly follow the route of the existing road. During the asset registration in late 2013 and the first half of 2014, 200 impacted households with 368 affected plots have been identified; community land of 3 villages is also affected on a total of 11 plots. Affected River Bank Gardens have been compensated accordingly and community land will be compensated in kind to the advantage of the whole community affected as outlined in the Entitlement Matrix in the REDP; following consultations and specific agreements between the community and the Project. Current impact numbers suggest that the estimated numbers regarding numbers of impacted households slightly decreased from the early estimates, but the actual impact in size varies: it is much lower in the first villages Nonsomboun, Sisavath, and Thahuea; while land acquisition in Hat Gniun village and

Hatsaykham Hamlet is higher than in the original estimates. With less than 10 plots still outstanding (registered but not agreed on yet), around 185 hectares will be totally compensated with a cash value of more than 305,000USD (not included non-land assets). Careful alignment of the Access Road avoided all impacts on houses and land acquisition just affected a small number of outbuildings: 5 huts, 6 animal pens, a shop, a toilet, and a well. According to the original alignment, part of one cemetery at Hatsaykham would be within the ROW and up to 22 tombs would then need to be moved. However, shifting the alignment of the road avoided impacts on this cemetery.

740. These assets have been and will be compensated as outlined in the LACP-AR, which also includes detailed figures.

## ***12.4 Impacts on Livelihood Activities***

### **12.4.1 Crop Cultivation**

741. Cash crop cultivation will increase with increased market access due to the Access Road.

### **12.4.2 Livestock**

742. As for cash crop cultivation, increased market access should lead to an increase of livestock production.

### **12.4.3 Forest Utilization**

743. The construction of the access road itself will have no major impact on forest utilization, as land acquisition is minor. Degradation of the forests in the area has started many years before the Project's commencement. The Project's EMO cooperates with public authorities to mitigate illegal logging.

### **12.4.4 Fisheries**

744. No impact is expected.

### **12.4.5 Other Livelihood Activities including Business and Employment**

745. PAPs will make use of the improved access to markets via the access road towards Bolikhan and Pakxan which will increase business and employment opportunities. People from the villages have been hired as labourers by contractors and subcontractors.

### **12.4.6 Tenure Security**

746. The Project will provide land titles for all replacement land along the Access Road 5 and thereby increase tenure security for the impacted PAPs.



### **12.4.7 Expenditure patterns**

747. The above outlined changes in livelihood activities as well as cash compensation values will lead to a stronger integration into a market economy, including the availability of cash. While the improved income status will lead to a quantitative increase of expenditure, this will likewise lead to a qualitative change of expenditure patterns. Expenditure decisions become essential for the sustainability of household livelihoods. Family financial training offered by the Project will enable households to understand these changes and it will highlight the necessity that long-term investments balance short term consumption. Livelihood trainings will furthermore integrate potential risks into their curricula.

## ***12.5 Impact on Social Structures***

### **12.5.1 Population profile**

748. Out-migration will reduce due to the opportunities provided resulting from an enhancement of the socioeconomic situation with consequences as described for Zone 3 and 5.

### **12.5.2 Influx of Outsiders, including tourism**

749. Project impact on the influx of outsiders for villages along the Access Road will be minor, but it will initiate the arrival of workers and camp followers. The Project has prepared necessary mitigation measures, amongst others a Social Management and Mitigation Program as part of the Public Health Action Plan outlined in the SDP.

### **12.5.3 Social Relations**

750. No impact is expected.

### **12.5.4 Social Disturbances**

751. Access to urban areas and cash-compensation values will have potential impacts on social disturbances, requiring social management by the PAPs with support by the Project, similar as for zones 3, 5, and 2LR outlined in 8.4.4.
752. As for Hatsaykham and the host communities, the social management and mitigation program will curb risks from disturbances from the construction site. Due to the limited construction period of around 6 months, impacts will be minor compared to impacts from the main construction site.

### **12.5.5 Local authorities**

753. Cooperation with local authorities during Project implementation will indirectly increase their capacities. Existing grievance institutions will be strengthened by training of grievance redress committees and following practice with grievance cases.

### **12.5.6 Health including Nutrition**

754. The most direct impact of the Access Road is increased traffic. The upgraded road allows faster driving with the risk of serious traffic accidents as can be observed on upgraded roads throughout the country. The Project implements a traffic safety campaign and sets clear rules with speed limits for Project vehicles.
755. As discussed for Zone 3 and 5, in this area, health issues in relation to construction and camp followers will be mitigated by the Project with measures outlined in the SDP.

### **12.5.7 Education**

756. No impact is expected.

### **12.5.8 Safety**

757. As discussed above, the most direct impact of the Access Road is traffic safety. A traffic safety campaign will be implemented by the Project.
758. The increasing availability of cash as well as the consequent increase of non-land based assets would increase the potential risk for theft in the area. However, awareness trainings, investment in education, explanations on safety through bank deposits, and other community development activities will mitigate this risk.
759. These programs will also mitigate risk of adverse impacts from construction as outlined above, for example substance abuse. Necessary monitoring has to be implemented to regulate this development.

### **12.5.9 Youth**

760. Urbanization tendencies by the establishment of easy access to Bolikhan and Pakxan will lead to integration with larger communities and change aspirations and role models. As outlined above, new opportunities and potentially higher cash income levels due to employment and business opportunities will strengthen the role of young people with the families.

## ***12.6 Impact on Access***

### **12.6.1 Access to Public Infrastructure**

761. The Project will provide an improved, all-year accessible public road.

### **12.6.2 Access to Information and Services**

762. No impact from the access road itself is expected but the access road is an essential pre-requisite for the other developments in the resettlement site.

### 12.6.3 Access to Urban Areas

763. The access road reduces travel time to the next urban area from two hours to 30 to 45 minutes for the farthest villages. The development of an *all-weather and all-season* road is eliminating the risk of being isolated during parts of the year. Regular bus services will increase the mobility of people.
764. There will be temporary blockage of the current access road during upgrading or construction of the access road. The impact has been reduced by using one lane at a time, leaving the other lane open. Furthermore, considerable increase of traffic will take place on the access road. According safety regulations have been put in place and safety awareness programs conducted.

### 12.7 Impact on Gender Issues

765. Gender dimensions in the project area have been assessed via focus group discussions. Key gender issues include:
- land rights; as most land is formally or informally under male control and heritage line, particularly among Hmong whose culture is patriarchal and patrilineal, and men may have more than one wife
  - financial management; where compensation money may be handed only to a male household head, there is higher risk of poor subsequent investment
  - hard work; with multiple responsibilities taking care on house, children, and income generating work
  - health; above all in relation to reproductive health and sexually transmitted diseases
  - education; less formal education due to early inclusion into domestic work, and less ability to understand written documents particularly if their first language is not Lao
766. While the Project will have positive influence on some of these issues (land titles in both husband and wife's names, compensation via bank accounts in both husband and wife's names, better access to health services and education), during the construction phase the influx of large numbers of male workers pose a challenge which the Project attempts to address with a series of measures, outlined in detail in the Social Development Plan (SDP): from health and safety community work to codes of conducts for workers to cooperation with local police authorities.
767. To facilitate good integration into information disclosure, project activity coverage and equitable decision making, the Project will have to give equal weight to recruiting female field staff, prioritising those with knowledge of Hmong language. The community consultation and development team of the Project is already fully composed of people of Hmong origin. Communication methodologies (more fully described in the Consultations Chapter 5) will include translation into Lao and Hmong languages, and reliance on visual communication guides for illiterate women or those with only functional literacy skills, as well as more formal written information.

### ***12.8 Impact on Ethnic Issues***

768. Impacts on Ethnic Issues are relevant for Hatsaykham village at the end of the Access Road; please refer to Chapter 9 for details. A specific impact of the Access Road would have been the impact on a cemetery, but by realignment of the road design, such impact has been avoided.

### ***12.9 Social Safeguards Compliance Audit***

As of April 2014, more than 80% of land required has already been compensated and a Social Compliance Audit of the implementation of the LACP-AR has been conducted independent social expert in order to meet ADB Social Policy Statement 2009 requirements. The Social Audit mission concluded that the Project's implementation of the Access Road land acquisition and compensation is in overall compliance with ADB, with some smaller improvements necessary.

## CHAPTER 13 - Social Analysis Transmission Line

### 13.1 Overview

769. Two transmission lines connect the Project dam site to electricity grids, a 230 kV line and a 115 kV line. The Project will also support EdL in the upgrade of a 22kV transmission line currently connecting the villages along the Access Road to the national grid, for use as an electricity supply for the construction site as well as the resettlement site.
770. The 230 kV transmission line will be routed from the powerhouse of the main dam to Nabong Substation; 130 km in length. Nabong Substation is located near Vientiane Capital and connects to electricity grids in Thailand through an existing 500kV line. Plans of upgrading the substation are currently discussed by the current owner (Nam Ngum 2) and GoL. These plans would go ahead with or without the NNP1 project. The 230kv transmission line will be implemented by the Project which will provide the necessary finance, undertake construction, and negotiate the alignment and necessary Right of Way (ROW), potentially up to 40m according to the Concession Agreement.
771. The original alignment design of the 230kv line, on which socioeconomic data below is based, will be considerably changed throughout the next year. This is due to an overlap of planned corridors by NNP1 and a second, independent, project in the area, NNP2, which has started implementation already. Nonetheless, preliminary data are provided in this chapter and the social impact assessment will be updated accordingly after final alignment has been determined. Compensation and mitigation measures will be outlined in a separate RAP and approved by MoNRE, ADB and lenders, before construction will commence. Thus, this chapter is indicative of potential impacts regarding the construction of the 230kv line.
772. The 115 kV transmission line will be routed from the powerhouse of the re-regulation dam toward Pakxan Substation, 40 km in length, to provide electricity for the Lao grid. This, second, transmission line will be implemented by Electricity de Lao (EDL), which will undertake the necessary land acquisition and construction. Nonetheless, according preliminary data will be provided here as the EDL line is considered an associated facility under ADB's SPS<sup>20</sup>.
773. The transmission lines run together for a distance before splitting to separate directions, and ending at the different sub-stations. The 230 kV line from the powerhouse at the main dam and the 115 kV line from the power house at the re-regulation dam run parallel to the southeast, crossing the Nam Ngiep River before curving to the south at 11.1 km from the power house Figure 38. After 11.1 km from the power house, the lines begin gradually to separate. They curve southward, crossing the Nam Ngiep once more. At Ban Nam Pa, 24.8 km, the lines separate into different routes. The topography of the route from the dam to Ban Nam Pa is slightly hilly, since the lines follow the foot of the mountain range. At Ban

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<sup>20</sup> Safeguards Policy Statement, ADB, Appendix 1, para 6(ii)

Nam Pa and for the rest of both routes, the topography is generally flat or slightly undulating over lowlands. The 230 kV transmission line curves generally west and southwest to the Nabong Substation; while the 115 kV transmission line runs generally southeast and south to the Pakxan sub-station. From there, as mentioned, electricity reaching the Nabong Substation will be exported to Thailand, while electricity directed to Pakxan Substation is for local use.

774. The LACP-TL will also include an assessment of impacts of the 22kV line, in case minor land acquisition for more electricity poles to support the existing line would be necessary. Currently, technical feasibility studies are under way, after which a preliminary assessment can be made. The 22kv line is divided in 4 sections: in section 1 from Pakxan to Nonsomboun, the current line has to be upgraded and a strengthening of string support structures is necessary; in sections 2 and 3 from Nonsomboun to Hatsaykham, the existing EdL transmission line can be upgraded without adaptations of the support structures; and from Hatsaykham to the construction site, a new line is planned within the already compensated right of way of the Access Roads.

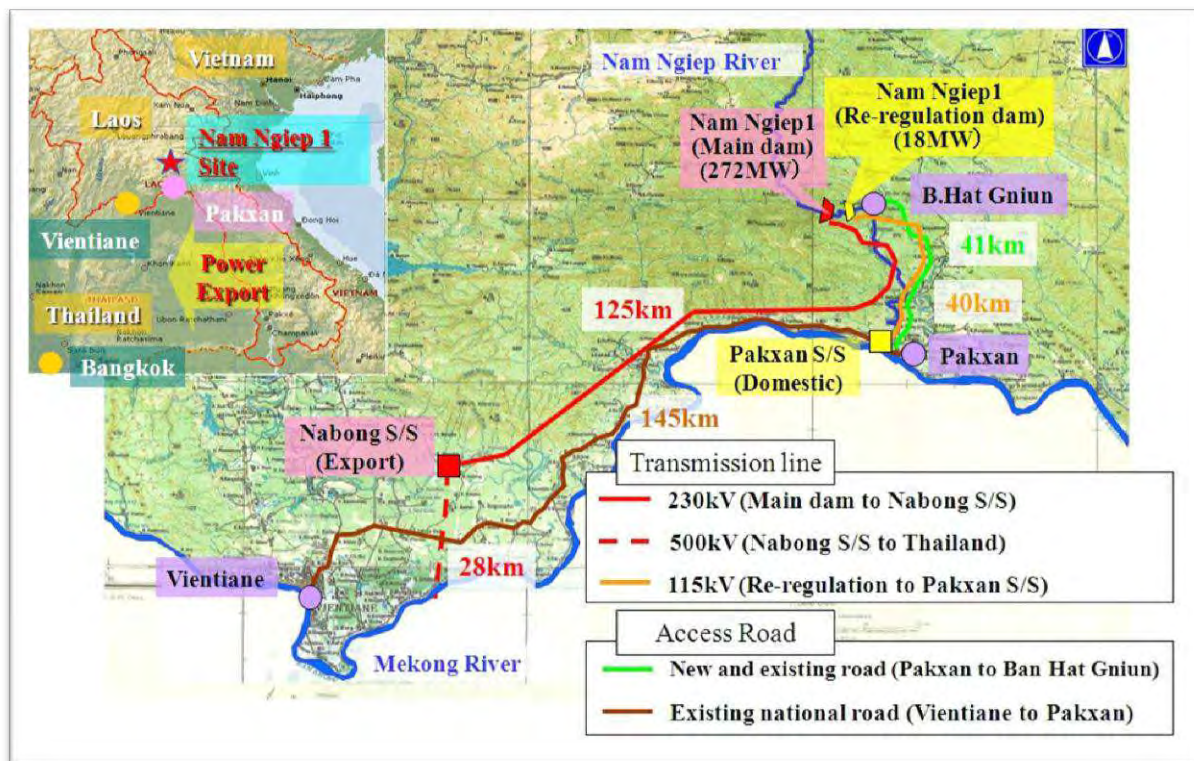


Figure 38: Transmission Lines connecting NNP1 dam site

### 13.2 Community Profiles

775. All of the villages in the affected area of the transmission lines have similar characteristics. All are predominantly ethnically Lao Loum, the majority group in Lao PDR. Their culture, religious beliefs, practices and livelihoods are typical of Lao Loum.
776. Most of the houses are clustered in each village. The villages are situated alongside the river,

in this case the Nam Ngiep, or beside roads. The houses of the Lao Loum are built above ground on wooden posts to cope with seasonal floods and to allow better airflow. This style provides space under the house for daytime activities and to keep livestock at night. Most households rely mainly on agriculture for their livelihood, with forest products and fish important secondary sources.

777. The administrative structure of each village is similar to that of other communities in the country: with a village headman, deputy village headmen, local militias, local police, a branch of the Lao Youth Union, a branch of the Lao Women’s Union, and a committee of the Front for Construction.

### 13.2.1 Population Profile

778. The transmission lines are routed through four districts in two provinces (Bolikhambxay Province and Vientiane Capital). The following table presents villages and number of households facing potentially impacts from the transmission lines. The transmission lines are likely to traverse portions of 24 villages in four districts of the two provinces, with 183 out of 4,851 households possibly affected by the transmission lines.

Province	District	Affected Villages	Total of households	Total of population	No. of affected households	
Bolikhambxay	Bolikhambxay (3 Villages)	1.Hat Gniun	67	371	3	14 households
		2.Houykhoun	358	2,180	4	
		3.Nampa	84	584	7	
	Pakxan (5 Villages)	1.Thong Noi	165	839	22	76 households
		2.Thong Yai	86	437	15	
		3.Sanaxay	274	1,156	4	
		4.Anusonxay	390	1,120	33	
		5.Pak Ngiep	137	659	2	
	Thaphabath (10 Villages)	1.Xaysavang	87	123	3	73 households
		2.Vuenthat	356	523	14	
		3.Paktuay Tai	126	278	7	
		4.Pakthouay Neu	174	391	7	
		5.Nongkuen	256	342	8	
		6.Sisomxay	275	371	10	
		7.Thabok	364	946	5	
		8.Palai	221	315	5	
		9.Somsaath	121	321	7	
		10. Na	179	462	7	
	Vientiane Capital	Pak Ngum (6 Villages)	1. Vuenkabao	125	749	1
2. Xienglea Na			115	639	8	
3. Xienglea Tha			237	1,416	4	
4. Nonh			111	498	4	

Province	District	Affected Villages	Total of households	Total of population	No. of affected households
		5. Thakokhai	178	378	1
		6. Nabong	365	456	2
<b>Total</b>		<b>24</b>	<b>4,851</b>	<b>15,554</b>	<b>183</b>

Table 89: Affected Villages, Households and Population Distribution (Source: Field Survey 2007)

### 13.2.2 Ethnicity

779. One significant historic site and tourist attraction, Wat Prabat Phonsan is located next to National Road No.13 South near the alignment of the 230 kV transmission line. In Ban Prabat, Thaphabat District. A model of the footprint of the Lord Buddha, a giant reclining Buddha, and an ancient drum are the most important relics and artefacts at the temple.
780. The transmission line was designed to avoid any impact to this temple, by placing the line 2.5 kilometres away from the national road and temple with the visual impact having been taken into consideration. One cultural site lies along the path of and will be affected by the 115 kV transmission line: a cemetery of the village of Ban Thong Yai about 9 kilometres from Ban Nam Pa. The affected area of the cemetery currently falls in the ROW for a total of 0.562 ha. If possible, the alignment of the transmission line should be altered slightly to avoid the cemetery. If that is not possible, certainly none of the towers for the transmission line should be placed on or near it. Further details will be assessed after the final design of the route of the Transmission Line and the consequent baseline, including the confirmation, surveys.

### 13.2.3 Infrastructure, Facilities, and other Development Activities

781. Compared with other areas of the Project, especially compared with those close or upstream of the dam site, the communities facing impacts from the transmission lines have better infrastructure and services. They lie close to one of the major roads of the country, national road 13 south. The city of Pakxan, a significant market and portal to Thailand, is close to many of the communities. Feeder roads to the villages are being improved by GoL and are in or will soon be in good condition. The following table presents the basic infrastructure or services available in their communities or in nearby communities.

Type of Facility or Infrastructure	Bolikhan 3 Villages	Pakxan 5 Villages	Thaphabat 10 Villages	Pak Ngum 6 Villages
Primary School	3	5	3	6
Lower Secondary School	1	2	4	3
Upper Secondary School	1	1	2	2
Dispensary or Village Clinic	0	1	3	2
Rice Mill	3	4	9	6
Electricity	2	5	9	6
All Weather Road	2	5	9	6
Village Market	2	3	9	6



Type of Facility or Infrastructure	Bolikhan 3 Villages	Pakxan 5 Villages	Thaphabat 10 Villages	Pak Ngum 6 Villages
Public Transport or Bus from Village to Districts/Provinces	2	5	9	6
Factory Nearby	0	3	2	3
Guesthouse	0	2	3	2
Restaurant	1	2	4	3
Garage	1	3	7	6
Communication Network	2	5	9	6
Toilet	3	5	9	6
2-Wheel or Small Tractor	2	5	9	6

Table 90: Existing Infrastructure and Facilities within the Villages affected by the Transmission Lines

*Note: This information is based on a survey focused on the area immediately in and around the villages along the proposed transmission line.*

### 13.3 Socio-Economic Profile

#### 13.3.1 Agriculture and Land use

782. The two lines share the Right-Of-Way (ROW) along a restricted space of at least 32.5 meters between the centres of alignment for the first part of the route, and are currently planned to run parallel until they reach Ban Nam Pa, where they separate, with the 230 kV line going to the Nabong substation and the 115kV line to the Pakxan substation. This first parallel segment is about 25 km long. The study corridor for this segment is 100 meters wide.
783. After the two lines separate, the study corridor along the 230 kV transmission line from Ban Nam Pa to the Nabong substation is 97 km long and 80 m wide, and the study corridor along the 115 kV transmission line from Ban Nam Pa to the Pakxan substation is 14 km long and 50 m wide.
784. The land use and vegetative features along the ROW corridors are presented in Table 91.

No.	Land Use and Forest type	Area (ha)	Percentage (%)
1.	Evergreen Forest	11.44	1.00
2.	Mixed deciduous Forest	266.85	23.32
3.	Dry Dipterocarp Forest	438.06	38.29
4.	Unstocked Forest	313.10	27.36
5.	Paddy Field	86.18	7.53
6.	Upland rice field	6.02	0.53
7.	Plantation	5.91	0.52
8.	Housing/Construction Area	6.08	0.53
9.	Water Body	6.89	0.60
10.	Road	1.77	0.15

No.	Land Use and Forest type	Area (ha)	Percentage (%)
11.	Other	1.87	0.16
	Total	1144.17	100.00

Table 91: Land Use and Vegetative Cover along the 230 kV and 115 kV Lines

785. The areas where people might be permanently or temporarily affected are those used for swidden agriculture (including those classed as unstocked forest), as well as the paddy fields, roads, built-up areas, tree plantations, and other land uses. The most important of these are the privately held lands: the built-up areas, paddy fields, and tree plantations, accounting for about 10 per cent of the total area under the right-of-way of the transmission lines. The survey found that 19 households own these lands. Each will lose only a small portion of their land. Nearly all the affected land in the right-of-way can still be used for general cultivation with impacts of temporary loss of land use while construction and stringing occur. Crop cultivation under transmission lines is permissible and already current practice. However, trees may not be planted nor structures made along the alignment or ROW. The only permanent impact of land loss will come from the need for footing for the transmission line towers. Each of the towers for the 230 kV line will require 324 square meters (18 x 18 meters), while each of the towers for the 115 kV line will require 225 square meters (15 x 15 meters). The acquisition of lands for these towers will not cause any significant impact to any household. The livelihoods of the people affected by the transmission lines will not be altered or disturbed to a significant degree. However, there may be some temporary livelihoods impacts due to access restrictions during stringing of lines during the dry season. Compensation will be provided for all temporary impacts due to construction work as well as for land acquisition for permanent impacts in line with commitments outlined in the Entitlement Matrix.

### 13.3.2 Further Sources of Income

786. The IEE field survey and interviews with local inhabitants showed that villagers in the project area had many different sources of income (Table 92). Main sources are agriculture and livestock, followed by small businesses and services, and sales from handicrafts and small-scale industries. The relative importance of income from small business operations and handicraft sales is likely because most of the villages within the project area lie along one of the main national highways, National Road No. 13 South. Other sources of income that are often important in rural communities in the Lao PDR, such as NTFPs, were relatively minor in the study area. Most households also had more than one source of income, as reflected by the occupations and livelihood systems of local villagers.

Income Sources	District			
	<i>Bolikhan (14 Villages)</i>	<i>Pakxan (76 Villages)</i>	<i>Thaphabat (66 Villages)</i>	<i>Pak Ngum (20 Villages)</i>
	<i>No. of HH</i>	<i>No. of HH</i>	<i>No. of HH</i>	<i>No. of HH</i>
Agricultural Production and Livestock	13	52	61	17

Non-timber Forest Products (NTFPs) and Fishing	4	2	5	3
Small Businesses and Services	5	27	16	9
Handicrafts and Small Scale industry	3	2	4	5
Daily Labour	4	43	24	7
Others	3	11	8	2

Table 92: Main Sources of Income of Villagers within the Project Area

*Note: Only affected villagers were interviewed. HH: Indicates total number of household within affected villages and districts.*

### 13.3.3 Vulnerability

787. An analysis of each household situation will be conducted by the Vulnerability Officer, so that special attention can be paid to the specific kinds of vulnerability regarding necessary assistance. Impacts along the Transmission Line should be limited and so is any impact on potential vulnerable households.

### 13.4 Land Acquisition and Resettlement Impacts

788. The only land that will need to be permanently acquired for the transmission lines is the space required to erect the footprints of the 372 steel transmission towers. Temporary disruption will also arise when construction and slinging occur. Impacted fruit trees and commercial trees (354 counted in 2007/8) will be compensated. Structures will not be impacted. Construction will require the combined area of 10.96 hectares from 183 households based on the early assessment. From the study, nearly all of this area is forestland, with a small number of agricultural land, water body and residential areas impacted. Updated numbers will be presented in the LACP Transmission Line.
789. The 22kV line follows the right of way of the roads, which from Nonsomboun to the dam site has been compensated by the Project. Impacts in section one from Pakxan to Nonsomboun will be assessed after the finalization of the technical feasibility study.
790. The transmission lines, including the 22kV line should have no impact on any of the infrastructure of the communities. In fact, project implementation should accelerate development of infrastructure within the area, especially roads and communication networks, and should improve access for provision of services and provide improved living conditions for the villagers. This development will meet both the needs of the villagers and fit with GoL development plans for these communities. More details are found in the REDP and will be presented in the LACP-TL after the finalization of the transmission line alignment.

### ***13.5 Impacts on Livelihood Activities***

791. The expected impacts on livelihood activities will be temporary construction impacts such as in the influx of labour, increased load on transportation routes, and waste from construction and labours; and restrictions of land use in the right of way. These impacts will be absolutely minor as labourers will work in each village just for several days and the Project will use its community consultations and development capacity to mitigate all short-term impacts. For the 22kV line, such impacts will be even less significant.
792. During normal operations of the dam, periodic inspection and maintenance of the transmission lines will be conducted. These will be to maintain the condition of the towers and to clear vegetation in the right-of-way. Any impacts from these inspections and maintenance activities will be also minor.
793. During slinging operations, access to lands farther away from the villages might be blocked for a short period of time. Environmental impacts are described in the IEE Transmission Line. For the 22kV line, no major impact is foreseen, as slinging does not affect agricultural land.

#### **13.5.1 Crop Cultivation**

794. During slinging, households will not be able to use the land below the transmission line. For this temporary impact, compensation will be provided as outlined in the REDP. For the 22kV line, no such impact is expected due to alignment within the ROW of the access road.

#### **13.5.2 Livestock**

795. No impact is expected.

#### **13.5.3 Forest Utilization**

796. Impact on forest utilization along the transmission line will be minor. Main impact will be via regulations regarding land use below the transmission line: no high trees will be allowed to be planted, while existing trees will be cut and compensated as outlined in the REDP. The 22kV line has no impact in this regard.

#### **13.5.4 Fisheries**

797. No impact is expected.

#### **13.5.5 Other Livelihood Activities including Business and Employment**

798. People along the Transmission Lines have employment opportunities for a short period of time. Project employment, even though short-term, can increase livelihood incomes for a period of time and the skills deriving from this experience can be used for alternative livelihood opportunities later on. Close to the dam site, including the 22kV line, this impact will be minor compared to the overall construction impact.

### **13.5.6 Tenure Security**

799. No impact is expected.

### **13.5.7 Expenditure patterns**

800. Family financial training offered by the Project will enable households to understand the necessity that long-term investments balance short term consumption, above all regarding the use of compensation values.

## ***13.6 Impact on Social Structures***

### **13.6.1 Population profile**

801. No relevant impact is expected due to the limited amount of activities.

### **13.6.2 Social Relations**

802. No relevant impact is expected due to the limited amount of activities.

### **13.6.3 Social Disturbances**

803. No relevant impact is expected due to the limited amount of activities.

### **13.6.4 Local authorities**

804. Cooperation with local authorities during Project implementation will indirectly increase their capacities. Existing grievance institutions will be strengthened by training of grievance redress committees and following practice with grievance cases.

### **13.6.5 Health including Nutrition**

805. No relevant impact is expected due to the limited amount of activities.

### **13.6.6 Education**

806. No relevant impact is expected due to the limited amount of activities.

### **13.6.7 Safety**

807. No relevant impact is expected due to the limited amount of activities.

### **13.6.8 Youth**

808. No relevant impact is expected due to the limited amount of activities.

## ***13.7 Impact on Access***

### **13.7.1 Access to Public Infrastructure**

809. No impact is expected due to the limited amount of activities.

### **13.7.2 Access to Information and Services**

810. No impact is expected due to the limited amount of activities.

### **13.7.3 Access to Urban Areas**

811. No impact is expected due to the limited amount of activities.

### **13.7.4 Influx of Outsiders, including tourism**

812. No impact is expected due to the limited amount of activities.

813. A more detailed analysis will be provided in the LACP-TL.

## ***13.8 Impact on Gender Issues***

814. The project is expected to have little gender-specific negative impacts specific to the construction of the transmission line. General Gender-policies of the Company will be implemented in accordance with the plans outlined below, i.e. amongst others requesting the signature of husband and wife on official documents and the transfer of cash compensation onto bank accounts in both, husband's and wife's names.

## ***13.9 Impact on Ethnic Issues***

815. With impact by the transmission line on villages minor, also impacts on ethnic issues are minor. The Project will take care to avoid impacts on archaeological and cultural artefacts during designing the route of the transmission line.

816. The most sensitive issue at present is the expected impact on the cemetery of Ban Thong Yai if the current alignment of the 115 kV transmission line is maintained. A slight adjustment of the alignment of the transmission line would be able to avoid this area, and this is highly recommended. Via re-alignment, potential impacts outlined in the following table should be avoided, too.

## ***13.10 Conclusion***

817. The design and construction phase will result in minor adverse impacts on existing secondary forests and vegetative resources from the 230kV line. The 22kV line is not expected to have any significant impact.

818. Social impacts and cost of compensation could further decrease by shifting the transmission line alignments slightly away from buildings during the detailed design phase. In principle, the right-of-way for the transmission line must be clear of any major objects, including buildings or other structures, as well as trees or large bushes. Standards for the 230kV line are proportionally stricter than for the 22kV line.
819. The main historical and cultural site near the transmission lines, the Prabat Phonsan Temple, is sufficiently far from the expected alignment.
820. To the extent possible, any site that is of cultural, historical, or religious importance to the local communities will be avoided. In order to avoid moving or razing or otherwise disturbing these sites, actions that would likely be considered unacceptable to the local residents, the transmission lines will be routed to avoid them. If disturbing any such sites cannot be avoided, consultations must be held with the local residents to determine the best action taken to compensate them and reduce the impacts.

# Part IV – Social Impact Assessment of the Project Impact Zone



## CHAPTER 14 - Socioeconomic Conditions and Impacts

821. An overview on the Project Impact Zone and relevant subordinated project zones in table-form, which this chapter refers to, can be found in Chapter 2, Table 13. This and the four following chapters of this part of the Report will make an assessment based on the information provided in the previous part; information will be repeated in a summarized as far as necessary.

### 14.1 Summary of Social Conditions

#### 14.1.1 Population Profile

822. Population data have been collected during several field studies. A little over 1,000 households with a total population of about 6,200 people and average household size of just under 6 people per household live in the eight villages in Zone 1, the upstream area. The 328 households in the three villages of Sub-zone 2UR have just over 2,000 residents, for an average household size of slightly over 6 people per household. The 384 households in the four villages of Sub-zone 2LR have a total population of 2,735 with an average household size of 7.1 persons, the largest ratio in the project area. Ban Hatsaykham in Zone 3 has only 33, but 218 people, for an average household size of 6.6. The nine downstream villages of Zone 4 are home to nearly 1,556 households, with 8,238 people, thus have an average household size of about 5.3 people per household, the lowest average household size ratio in the area. The two host villages of Zone 5 have 117 households with 636 people, and an average household size of 5.4. A more detailed analysis of population characteristics of these households will be presented in the chapters referring to each single zone.
823. The project will have an impact on a small, but not insignificant percentage of the total populations of the 2 provinces.
824. For Bolikhamxay, with an estimated population of about 264,500 people in 2010,<sup>21</sup> the 9,092 people to be affected by the Project represent about 3.4% of the total provincial population. All but the 218 people in Hatsaykham (Zone 3) are located downstream, with the 636 people of Ban Hat Gniun and Ban Thahuea (Zone 5) facing impacts as host of the resettled people from Hatsaykham and Zone 2LR, and possible impacts as the closest communities downstream from the dam. The remaining over 8,000 people in Zone 4 will face only minor, indirect impacts from the Project with no land acquisition necessary.
825. Almost all of the people most severely affected by the Project live in the newly created Province of Xaysomboun, which has an estimated population of 81,800. The 11,045 PAPs in Zones 1, 2UR, and 2LR encompass thus around 13.5% of this Province. However, more than

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<sup>21</sup> From the GoL National Statistical Centre website:

[http://www.nsc.gov.la/index2.php?option=com\\_content&view=article&id=37&Itemid=38](http://www.nsc.gov.la/index2.php?option=com_content&view=article&id=37&Itemid=38), table on "Area and average mid-year population by provinces in 2005-2010"

half of the people in Xaysomboune Province living in the project area are in Zone 1, and they will face only minimal impact from the Project. The 2,036 residents located in 2UR, or about 2.5% of the total population of Xaysomboune Province, will face moderate to serious impacts via the loss of lands and for 15 villagers the loss of houses. The 2,735 people in Sub-zone 2LR, losing all of their lands and houses with the necessity to resettle, encompass 3.3% of the population of Xaysomboun.<sup>22</sup>

#### 14.1.1.1 Population changes

826. With a national annual population growth rate of 1.9% between 2006 and 2010,<sup>23</sup> one could expect a natural increase in the population of the project area of about 8% in 4 years. Based on surveys conducted in the project area in 2007/8 and again in 2011, it is possible to see the actual changes in populations in the communities, as can be seen in Table 93, vary strongly.

Village	2007/8 Population	2011 Population	2007/8 to 2011	
			$\Delta$ Pop.	% change
Thaviengxay (Dong)	756	1,646	890	117.7%
Phonngeng	589	771	182	30.9%
Nasong	668	681	13	1.9%
Viengthong	385	617	232	60.3%
Nasay	246	270	24	9.8%
Xiengkhang	376	546	170	45.2%
Nahong	563	543	-20	-3.6%
Phonhom	628	1200	572	91.1%
<b>TOTAL ZONE 1</b>	<b>4,211</b>	<b>6,274</b>	<b>2,063</b>	<b>49.0%</b>
<hr/>				
Pou	842	1,129	287	34.1%
Piengta	452	454	2	0.4%
Hatsamkhone	419	453	34	8.1%
Nakang	316	0	-316	-100.0%
<b>TOTAL ZONE 2UR</b>	<b>2,029</b>	<b>2,036</b>	<b>7</b>	<b>0.3%</b>
<hr/>				
Houaypamom	225	254	29	12.9%
Soppuane	304	416	112	36.8%
Sopyouak	759	916	157	20.7%
Namyouak	956	1,149	193	20.2%

<sup>22</sup> Ibid

<sup>23</sup> ADB, Lao People's Democratic Republic Fact Sheet, 2011

Village	2007/8 Population	2011 Population	2007/8 to 2011	
			$\Delta$ Pop.	% change
<b>TOTAL ZONE 2LR</b>	<b>2,244</b>	<b>2,735</b>	<b>491</b>	<b>21.9%</b>
Hatsaykham	165	218	53	32.1%
<b>TOTAL ZONE 3</b>	<b>165</b>	<b>218</b>	<b>53</b>	<b>32.1%</b>
Nampa	479	584	105	21.9%
Somseun	1,182	1,207	25	2.1%
Houykhoun	2,089	2,180	91	4.4%
Tong Noi	720	839	119	16.5%
Thong Yai	379	437	58	15.3%
Sanaxay	1,066	1,156	90	8.4%
Phonsy	660	719	59	8.9%
Pak Ngiep	826	659	-167	-20.2%
Sanoudom	449	457	8	1.8%
<b>TOTAL ZONE 4</b>	<b>7,850</b>	<b>8,238</b>	<b>388</b>	<b>4.9%</b>
Hat Gniun	395	371	-24	-6.1%
Thahuea	273	265	-8	-2.9%
<b>TOTAL ZONE 5</b>	<b>668</b>	<b>636</b>	<b>-32</b>	<b>-4.8%</b>

Table 93: Population Changes in the Project Area, 2007/8 to 2011

827. Several factors led to such strong and varied changes. The biggest changes are due to the GoL policy to consolidate villages. Zone 1 Thaviengxay Village, previously known as Ban Dong, more than doubled in size because of the consolidation of several other villages into this now much larger community. Phonhom also increased by 90%, in large part because of the incorporation of Nakang, a village previously in Zone 2UR, into Phonhom.
828. Other communities grew in part from in-migration, while yet others barely grew or even shrank because of out-migration. The 13 to 37 per cent increase in the populations of the villages of Zones 2LR and 3, the communities that will be resettled, is due to a combination of natural population growth and in-migration of those attracted to the still relatively available and fertile lands in the area. In contrast, Hat Gniun and Thahuea, the two host communities, have both shrunk slightly over the past 4 years, from people migrating out in search of new lands or other new economic opportunities.
829. While difficult to predict with any accuracy what the future populations of these communities might be, in particular those of the resettled villages and other directly affected communities, for the purposes of planning it has been assumed that they will have at least a natural increase of population of about 2 per cent per year plus a buffer of 3-4 per cent for

in-migration due to the attractiveness of a well-developed resettlement site, equals an increase of 5-6% per year. Experience from other hydropower projects in Laos indicates substantial population growth as a consequence of improved road access provided by a project, as well as new livelihoods opportunities associated with projects.

#### **14.1.1.2 Population Movements**

830. Communities in the project area, above all in Zone 2, are closely related to the younger history of Lao PDR, resulting out of community movements through and after the revolutionary war. According sensitivities have to be regarded by the project; further details are outlined in the ethnic group section.
831. Accordingly, while communities have a long history, their current location is mostly rather young, with current villages in Zone 2 between 20 to 40 years old. Their situation can not directly be grasped by the internationally used term “Indigenous People”, but the relevant standards have to apply anyway as discussed in the BCS assessment: due to the communities’ close relation to land and the circumstances of forced movement due to conflicts. Therefore, the Project has to consider on the one hand customary flexibility of people, on the other hand reluctance to move, after a long history of movements in the past.

#### **14.1.1.3 Community Profiles**

832. Despite their differences, the villages affected by the Project all share some characteristics of rural communities throughout Lao PDR. They consist of houses of which many with characteristics unique to the particular ethnicity of the community or of the household; which, too, influences the characteristic of village layout, with houses either in clusters or spread apart. A main road further influences this layout, as the D1 road in Zone 1 and 2UR, where houses tend to align to this road. Villages, and above all obviously their paddy rice fields, tend to be located close to rivers or tributaries, with their actual location depending on the ethnic community as well as their respective economic structure.
833. Agriculture forms the main income source. Paddy lands are considered the most valuable, with rice the main staple. Rice is also grown in upland areas (“Hay”), though the yields are lower. A number of other upland crops are grown in the Hay, including cash crops as maize. Most households also raise animals, ranging from small livestock like chicken via pigs to large livestock like cattle.
834. The names of the villages along the 160 kilometres of the Nam Ngiep River are presented in Table 13 above, along with the districts and provinces in which they are located.

#### **14.1.1.4 Typical settlement**

835. The characteristics of the houses tend to follow traditional ethnic patterns: traditional Lao Loum and Khmu houses are two storey buildings with the ground level open. The second level sits on wood poles, and is divided into a bedroom or bedrooms, a sitting area, and a kitchen in a corner of the house.
836. Upland ethnic groups, such as Hmong, have traditionally single storey houses directly on

the ground, with walls and roofs made of bamboo. Those households with more wealth and a higher status have houses with walls and roofs made out of wood. The houses have a single room, with the kitchen in the middle of the house. Beds or sleeping places are located around the fire place. Typically the house may accommodate several family clusters in one joint family household.

837. Having said this, households in the impacted communities do not strictly follow this pattern. Some of the Hmong who have lived for years in Sopyouak and Namyouak have adopted the lowland style of two storey houses, to show their status as wealthier and as part of the national community; while wealthier households of all ethnic communities have started building one- and two-storey houses with brick walls. Furthermore, detached kitchen buildings can be seen. Households where the male head has more than one wife may maintain one central house with one or two separate structures for the families of the second or third wife.
838. Other structures and land uses in the house plots are typically granaries, chicken coops, pig sties, animal pens, vegetable gardens, mortars to mill rice, and storage sheds for firewood. Housing land is usually fenced, either individually or clusters of households belonging to the same wider joint family.

#### **14.1.1.5 Public Infrastructure**

839. Table 94 presents the types of infrastructure available in the villages of the project area, registered in the 2007/8 and 2011 Surveys. The villages can be divided into two main groups in terms of available infrastructure. Some have reasonably good quality infrastructure and services, with roads accessible in all seasons, electricity, schools, health centres in the community or nearby. Communities with these facilities and infrastructure include Houykhoun, Thong Noi, Sanoudom, Sanaxay, Phonsy (all in Zone 4, Downstream Area), and Phonngeng, Thaviengxay (Zone 1, Upstream). With the improvement of National Road 1D, several villages along the road are quickly being provided improved services and infrastructure, notably those in Zone 2UR, even though not noted in the early surveys of 2007/8 and 2011.
840. The second group, the majority of villages, does have limited infrastructure and social services. Roads are regularly impassable through rainy seasons or the villages are accessible only by river. There is no connection to the provincial electricity grid, with small amount of electricity deriving from solar power panels or pico-hydropower structures. Even though schools are available (which is not equivalent to schooling by teachers, see section on education), they lack adequate buildings and facilities. Many of the houses are made primarily of bamboo. The walls and roofs of these houses have to be changed every 4 to 5 years. However more and more houses are made of more permanent materials, with wood and/or brick walls, and tiles or tin roofs.
841. Those villages facing significant impact from the Project and are forced to resettle are among the villages with the least physical and social infrastructure. Villages with better infrastructure or on-going government improvements in infrastructure can be found

upstream along the road D1 as well as downstream close to the provincial capital. This includes Zone 2UR and the prospective host communities for the resettlement area, which, other than up- and downstream villages, will experience significant impacts as well.

Village	Infrastructure Service				Social Welfare						PPO
	El.	Wat.S.	Road	Mark.	S1°	S2	Health	Temp.	Cem.	Groc.	
<b>Zone 1-Upstream Area</b>											
Thaviengxay	√	√	√	√	√	-	N/A	-	√	√	-
Phonngeng	√	√	√	√	√	-	N/A	-	√	√	-
Nasong	√	√	√	-	√	-	N/A	-	√	√	-
Viengthong	√	√	√	-	√	-	N/A	-	√	√	-
Nasay	-	√	√	-	√	-	N/A	-	√	√	-
Xiengkhone	√	√	√	-	√	-	N/A	-	√	√	-
Nahong	√	√	√	-	√	-	N/A	-	√	√	-
Phonhom	√	√	√	-	√	-	N/A	-	√	√	-
<b>Zone 2-reservoir Area</b>											
<b>Zone 2UR</b>											
Pou	-	√	√	-	√	√	-	√	√	√	√
Hatsamkhone	-	√	√	-	√	-	-	√	√	√	√
Piengta	-	√	√	-	√	-	√	√	√	√	√
<b>Zone 2LR</b>											
Houaypamom	-	√	√	-	-	-	-	-	√	√	√
Soppuane	-	√	√	-	√	-	-	-	√	√	√
Sopyouak	-	√	√	-	√	-	√	-	√	√	√
Namyouak	-	√	√	-	√	√	-	-	√	√	√
<b>Zone 3-Construction Area</b>											
Hatsaykham	-	√	√	-	-	-	-	-	√	√	√
<b>Zone 4 Downstream Area</b>											
Nampa	-	√	√	N/A	√	N/A	-	-	√	√	N/A
Somseun	√	√	√	N/A	√	N/A	-	√	√	√	N/A
Houykhoun	√	√	√	N/A	√	N/A	√	√	√	√	N/A
Thong Noi	√	√	√	N/A	√	N/A	√	√	√	√	N/A
Thong Yai	√	√	√	N/A	-	N/A	-	√	√	√	N/A
Sanaxay	√	√	√	N/A	√	N/A	-	-	√	√	N/A
Phonsy	√	√	√	N/A	√	N/A	-	-	√	√	N/A
Pak Ngiep	√	√	√	N/A	-	N/A	-	√	√	√	N/A
Sanoudom	√	√	√	N/A	√	N/A	-	√	√	√	N/A
<b>Zone 5 Resettlement Area</b>											
Hat Gniun		√	√	-	√	-	-	-	√	√	√

Village	Infrastructure Service				Social Welfare						PPO
	El.	Wat.S.	Road	Mark.	S1°	S2	Health	Temp.	Cem.	Groc.	
Thahuea	√	√	√	-	√	-	-	√	√	√	N/A

Table 94: Infrastructure of villages in project Area (Source: Field Surveys 2007/8 and 2011; Field visits 2012 and 2013)

Abbreviations: El...Electricity; Wat.S....Water Supply; Mar...Market; S1°...1° school; S2°...2° school; Health...Health centre; Temp...Temple; Cem...Cemetery; Groc...Grocery; PPO...Private and Public Organization

### 14.1.1.6 Demographics

842. The census of all households in Zones 2 and 3 collected data on age of household members. The age distribution of these 8 villages is shown in Table 95. As expected, given the demographics of the Lao PDR and of other countries at similar points of development, the birth-rate is rather high and the age distribution is skewed heavily to the younger cohorts. About 47% of the population of these villages is aged 15 and under. This is not unlike the national age distribution of youth, where about 39% of the population is aged 14 and under.
843. The age distribution of these 8 villages is also similar to the national age structure in the proportion of young adults and the proportion of older population. For the national population, those aged 25 to 44 account for 24.7% of the population, while in the villages of Zones 2 and 3; those aged 26 to 45 account for only 23.6%. Those aged 56 and over in the 8 villages account for 8.2 % of the population, compared to 8.0% of the national population.<sup>24</sup>

Village	Total Population	Population based on HH interviewed	<5 yrs	6 - 10	11- 15	16- 20	21- 25	26- 30	31- 40	41- 50	51- 60	>60
<i>Houaypamom</i>	248	254	62	42	29	28	20	17	17	18	8	7
<i>Sopphuane</i>	424	416	83	76	59	53	41	22	29	34	13	14
<i>Sopyouak</i>	891	916	153	157	129	114	86	49	82	63	33	25
<i>Namyouak</i>	1,080	1,149	203	214	138	110	86	82	90	73	32	52
<i>Hatsaykham</i>	218	218	45	27	35	25	23	14	21	11	8	9
<i>Pou</i>	920	920	139	143	146	106	67	72	104	72	45	26
<i>Hatsamkhone</i>	457	457	36	54	79	67	46	30	53	41	28	23
<i>Ban Piengta</i>	422	422	29	54	70	56	52	26	50	29	23	33
<b>Total</b>	<b>4,660</b>	<b>4,752</b>	<b>750</b>	<b>767</b>	<b>685</b>	<b>559</b>	<b>421</b>	<b>312</b>	<b>446</b>	<b>341</b>	<b>190</b>	<b>189</b>
<b>%</b>	<b>100</b>		<b>16.1</b>	<b>16.5</b>	<b>14.7</b>	<b>12.0</b>	<b>9.0</b>	<b>6.7</b>	<b>9.6</b>	<b>7.3</b>	<b>4.1</b>	<b>4.1</b>

Table 95: Age Distribution (Source: Field Survey 2011)

<sup>24</sup> National data from GoL National Statistical Centre, ob cit, Table on “Estimated Average 2007”

## 14.1.2 Sources of Income/ Livelihood

### 14.1.2.1 Rice

844. Rice cultivation is the main activity of almost all households in all the villages of the project area. The type of rice grown will depend on the ethnic group: Lao Loum and Khmu prefer glutinous rice, while Hmong prefer non-glutinous rice. All grow local or traditional varieties according to their preferences: hybrid varieties have not yet reached most of the communities. Nearly all households grow rice on two types of land: in rain-fed paddy fields in valleys or along the river, and in upland fields. The yields of rice grown in the paddy fields are generally higher than the yields of highland rice varieties. Table 96 presents the area of paddy field and swidden field cultivation in the villages in Zones 2 and 3.

Village Name	Paddy Field Cultivation (ha)	Paddy Field / Overall Cultivation Area (%)	Swidden Cultivation (ha)	Swidden Field / Overall Cultivation Area (%)
<i>Upper section of the reservoir area</i>				
Piengta	68.19	31.25	24.074	11.03
Hatsamkhone	78.44	32.44	37.291	15.42
Pou	130.10	32.81	93.786	23.66
<i>Lower section of the reservoir area</i>				
Houaypamom	24.17	28.75	28.48	33.88
Sopphuane	38.91	31.71	49.16	40.07
Sopyouak	111.591	16.49	89.34	13.20
Namyouak	89.82	24.03	146.17	39.11
<i>Construction Area</i>				
Hatsaykham	33.76	25.51	60.6	45.78

Table 96: Area of Paddy Field and Swidden Cultivation in 2UR, 2LR, and Zone 3 (Source: Field Survey 2011)

845. The field surveys found that some households have sufficient rice surplus to sell their extra rice for cash. This is only possible, though, for households in communities near roads. Still, there are many households in the project area that cannot grow enough rice to eat for the entire year. Again taking the 8 villages facing moderate to severe impacts from the project, we see in Table 97 the per cent of households that harvest sufficient rice for their annual needs, and the per cent unable to produce enough to eat year-round.

Villages	No. of HH	No. of HHs interviewed	Sufficient Year Round	Insufficient for 2 to 4 months	Insufficient for 5 to 6 months	Insufficient for 7 to 8 months
<i>Upper section of the reservoir area</i>						
Piengta	82	79	87%	9%	2%	2%
Hatsamkhone	74	73	92%	6%	1%	1%



Pou	172	145	71%	15%	9%	5%
<b>Lower section of the reservoir area</b>						
Houaypamom	37	37	86%	14%	0%	0%
Sopphuane	58	58	88%	8%	4%	0%
Sopyouak	126	126	94%	3%	0%	3%
Namyouak	163	163	93%	7%	0%	0%
<b>Construction Area</b>						
Hatsaykham	33	23 (in 2008)	87%	13%	0%	0%

Table 97: Yearly Rice Sufficiency Production of Households in Zones 2UR, 2LR, and Z3 (Source: Field Survey 2011)

846. With the exception of Ban Pou, from mid-80 to slightly over 90 per cent of the households in each village produce enough rice to eat for the year. In Ban Pou, the percentage of households who produce sufficient rice for the entire year is 71 %.
847. Even those without rice for the entire year do not starve or suffer serious malnutrition. These families either exchange for or purchase rice to cover their shortfalls, or they eat alternatives such as tubers gathered from the forests to mix with the remaining rice. They earn the cash to buy rice from NTFPs, or handicrafts, or from the sale of livestock or other agricultural produce.
848. According to the LECS III survey of the GoL, the people of Laos consume on average 0.6 kg of non-husked rice per person per day, or 219 kg of non-husked rice of paddy per person per year. However, the Hom District development plan has declared as its goal of rice production an average of 418 kilograms per person per year. Table 98 shows the average area of rice paddy per household in the study area.

<i>Study Area</i>	<i>Paddy Fields (ha)</i>	<i>No. HH</i>	<i>Average paddy (ha) per HH</i>
<b>1. Upstream Area (Zone 1)</b>	353.01	1,005	0.350
<b>2. Reservoir Area</b>			
Upper Reservoir Area (Zone 2UR)	276.73	328	0.840
Lower Reservoir Area (Zone 2LR)	264.49	384	0.690
<b>3. Construction Area (Zone 3)</b>	33.76	33	1.020
<b>4. Downstream Area (Zone 4)</b>	1,251.00	1,673	0.750
<b>5. Host communities (Zone 5)</b>	30.00	117	0.256

Table 98: Paddy Land in the Project Area, by Zone (Source: Field Survey 2011)

849. Of main concern are the households in Zones 2LR and 3, where people will face the greatest impacts of the Project and will need to resettle, in Zone 2UR where a number of the households will lose paddy land to the reservoir, and in Zone 5 where the households from Zones 2LR and 3 will resettle. Impact is expected to be even greater for potentially 171 vulnerable households. The Project is currently assessing more detailed data to assess if each of these potentially vulnerable households “might suffer disproportionately from the loss of fixed and movable assets, other assets, and production base; or face the risk of being

marginalized from the effects of resettlement”.

850. It should be noted that the total rice production in many of these villages, especially those further upstream, is not limited to that grown in paddy fields; upland rice is also grown in the upland fields (Hay). In Zone 2LR, a total of 313.15 ha are used for upland rice production; or an average of 0.81 ha per household. However, yields of upland rice tend to be about 30 per cent lower than paddy rice, so the area is equivalent to about 0.57 ha of paddy.
851. Although the average area of about 1 ha of rice land per household in the resettlement area will be more than sufficient to provide rice year round, several factors limit productivity. While there is considerable rainfall, very little of this moisture is retained, whether through irrigation or other means. Soil quality is also a key concern of PAPs during consultations. Traditional methods of shifting cultivation enable soils to regain fertility during the fallow years, with crops grown from 2 to 3 years and the land then left fallow for 4 or 5 years. However, as population pressure has forced people to reduce the time of the cropping cycle to only 3 or 4 years, the 1 or 2 years of fallow are not sufficient for the land to regain its fertility. Furthermore, agriculture extension services are quite limited in Lao PDR, so most farmers will have little or no access to soil, plant or other agricultural technologies or techniques that could help them improve their yields. Experience in upland agricultural programs in Laos also indicates that upland farmers are often slow to adopt new and more labour or cash-intensive methods of soil improvement.

#### **14.1.2.2 Other field crops**

852. The households in the study area grow a number of other field crops, mostly in their upland crop lands. These crops include maize, cassava, bananas, pineapple, and sugar cane. These are mostly grown after the rice season, when there is still sufficient moisture in the soils on upland crop lands (“Hay”). Additional upland area, aside from that used for rice, ranges on average from 1 ha (as in 2UR) to about 1.77 ha (the average in 2LR). Much of the produce is consumed by the households, with maize for example used as animal feed. Some surplus of the other field crops is sold, with an average income from these crops of about 640,000 kip to 5,000,000 kip per year in Zone 2UR, and about 400,000 to 1,400,000 kip in Zone 2LR (Field Survey 2011); and 160,000 in Zone 3 (Field Survey 2007/8).

#### **14.1.2.3 Cultivated fruit trees/ commercial trees**

853. Villagers plant fruit trees and other economic or commercial trees. Farmers have started recently planting commercial trees, such as teak. There has also been planting of rubber trees in recent years, and there is evidence that more farmers will start to plant rubber, because the earnings were relatively good in recent years; however, currently the profitability decreases with an increasing supply throughout the country and a decline of demand due to a slowing of Chinese (the major buyers of rubber) economic growth.
854. During visits to local markets and markets in nearby towns, nearly all the local fruits sold in the market were from the forests. Commercially grown fruits were either from Thailand or China. It might therefore be possible to promote some local commercial production of fruit,

though care must be taken to assure the costs are competitive with those brought from neighbouring countries.

855. The sale of tree products, from both, fruit trees and other commercial species, averaged about 60,000 to 150,000 kip per year in Zone 2UR, about 30,000 to 230,000 in Zone 2LR and 40,000 in Zone 3. Currently, a market depth survey in the project area and its bordering towns is being conducted by NNP1PC consultants, information from which will support the preparation of the livelihood programs.

#### 14.1.2.4 Animal husbandry

856. All the households in the study area raise animals for food and many also raise them for work and for sale. Depending on household and kind of animals, animals are allowed to roam freely and find food on their own or are kept in fenced grassing land and pens. The most numerous are poultry - chicken, ducks, and some turkeys - raised for food. Pigs are also raised for food. Cattle and water buffalo have been kept as draught animals, but with the introduction of two-wheel hand tractors, cattle and water buffalo are now kept less commonly as work animals, but being raised for sale, as are horses and goats; and also for festivals and rituals.
857. During the rainy season and until the rice harvest, the larger animals are kept in pens near the house to prevent them from wandering into the fields and eating the crops. The animals are not given any special feed or grasses when they are kept penned in, but instead are fed scraps from the kitchen or a mix of scraps with husks mixed with leftover parts of vegetables, chopped up banana trees, or onions.
858. Villagers usually eat poultry or other meat only on special occasions. The animals are considered an important means of savings, and a key resource to acquire cash when needed. Sales of animals ranged between 2,300,000 and 10,000,000 kip per year in Zone 2UR, 90,000 and 4,000,000 kip in Zone 2LR and 3,200,000 kip in Zone 3. Table 99 presents the number of livestock recorded in the surveys of the villages in the immediate catchment area that will be directly or indirectly affected by the Project.

No.	Name of Village	Number of Livestock			
		<i>Buffalo</i>	<i>Cattle</i>	<i>Pigs</i>	<i>Poultry</i>
<b>Zone 1 - Upstream area (10% survey)</b>					
1	Thaviengxay	8	11	10	533
2	Phonngeng	7	10	7	375
3	Nasong	8	4	9	310
4	Viengthong	3	14	6	234
5	Nasay	1	5	3	109
6	Xiengkhang	5	12	14	442
7	Nahong	7	7	8	345
8	Phonhom	9	8	9	330
<b>Zone 2 - Reservoir area</b>					

No.	Name of Village	Number of Livestock			
		Buffalo	Cattle	Pigs	Poultry
<b>Sub-Zone 2UR - Upper Reservoir Area</b>					
1	Piengta	48	59	215	4,835
2	Hatsamkhone	50	140	216	4,429
3	Pou	112	486	571	6,133
<b>Sub-Zone 2LR - Lower Reservoir Area</b>					
1	Houaypamom	38	70	252	N/A
2	Sopphuane	48	143	1,896	3,126
3	Sopyouak	523	651	920	6,353
4	Namyouak	444	1,219	1,254	4,276
<b>Zone 3 - Construction area</b>					
5	Hatsaykham	116	120	341	75
<b>Zone 4 - Downstream area (10% survey)</b>					
1	Houykhoun	70	143	126	752
2	Nampa	74	36	147	1,105
3	Phonsy	44	132	25	1,242
4	Sanaxay	-	-	-	-
5	Sanoudom	43	75	60	1,683
6	Somseun	113	174	356	2,665
7	Thong Yai	8	25	14	784
8	Thong Noi	3	48	30	903
9	Pak Ngiep	2	38	-	1,567
<b>Zone 5 - Resettlement area</b>					
1	Hat Gniun	190	237	768	2,760
2	Thahuea	114	260	101	2,538

Table 99: Major Livestock Numbers in Affected Villages in the Project Area (Source: Zone 1 from Draft Report 2008, NCC and LEM; All other zones from SSAFE, field survey 2011)

### 14.1.2.5 Fisheries and aquaculture

#### 14.1.2.5.1 Fishing activity

859. With all the villages located along or near rivers, fishing is naturally another important source of food and the major source of protein for the villagers. Nearly every meal includes some fish. Villagers go regularly with their boats, nets, and other equipment to fish in the river, except during the most crucial periods of rice growing or other crop production, when labour needs to be devoted to the crops. The fishing equipment consists of fishing nets, cast nets, fishing baskets, and fishing rods, and fishing spears. Stationary gill nets of 2-3 cm mesh and cast nets are the most popular fishing gear of the villagers. Fishing is almost exclusively done by men.
860. Table 100 below presents the location of fisheries surveys taken along the Nam Ngiep River.

One of the most productive fishing habitats called “Kengxang” is located about 1 km north of Somseun village (station 9). Another fishing habitat is shared by villagers from Hat Gniun (station 8) and Hatsaykham (station 7): this particular habitat is located at the site where the dam will be constructed. Another important fishing habitat is located close to Sopphuane village, just above the village near the mouth of Sopphuane River.

861. Most families in these areas only catch enough fish for their own consumption, using rather simple fishing gear. Selecting their fishing gear depends on the condition of the particular fishing habitat: for most of the river, the bottom is quite rocky. Estimated catch in the area was about 1 kg/cast net/hour, with the maximum time spent daily on fishing 3 hours.
862. Another fishing area, located between Ban Houaypamom and Ban Pou, close to where the Nam Chaise flows into Nam Ngiep, is one of the most important fishing habitats, shared by people from several neighbouring village. Yet another fishing habitat where villagers mainly catch small cyprinids such as Pa Chad, Pa Mom, Pa Khang Lai and Pa Khiang is in the in Nam Ngiep near Ban Pou village. There is no aquaculture activity found in the project area.
863. Some surplus fish is sold. The sale price of the fish varies by species and sizes. The price for small cyprinids was 10,000 kips/kg. Larger cyprinids such as Pa Phao, Pa Va, Pa Deng that can reach weights of up to 2 kg can fetch higher prices of up to 15,000 kips/kg. Bigger and scale-less fish are considered even more valuable and were sold for up to 60,000 kips/kg.

Station	Location			Coordinate	
	Village	District	Province	N	E
1	Piengta	Thathom	Xaysomboun	19o01'33.6"	103o25'09.6"
2	Hatsamkhone	Thathom	Xaysomboun	19o00'46.0"	103o26'40.3"
3	Pou	Thathom	Xaysomboun	19o00'52.5"	103o27'37.7"
4	Houaypamom	Hom	Xaysomboun	18o59'32.6"	103o30'10.5"
5	Sopphuane	Hom	Xaysomboun	18o50'01.9"	103o26'19.9"
6	Sopyouak	Hom	Xaysomboun	18o42'53.7"	103o26'40.9"
7	Hatsaykham	Bolikhan	Bolikhamxay	18o38'41.1"	103o33'17.4"
8	Hat Gniun	Bolikhan	Bolikhamxay	18o39'23.6"	103o35'03.6"
9	Somseun	Bolikhan	Bolikhamxay	18o25'03.5"	103o36'22.6"
10	Pak Ngiep	Pakxan	Bolikhamxay	18o31'58.8"	103o38'48.3"

Table 100: Fish and Fisheries Survey Locations along the Nam Ngiep River

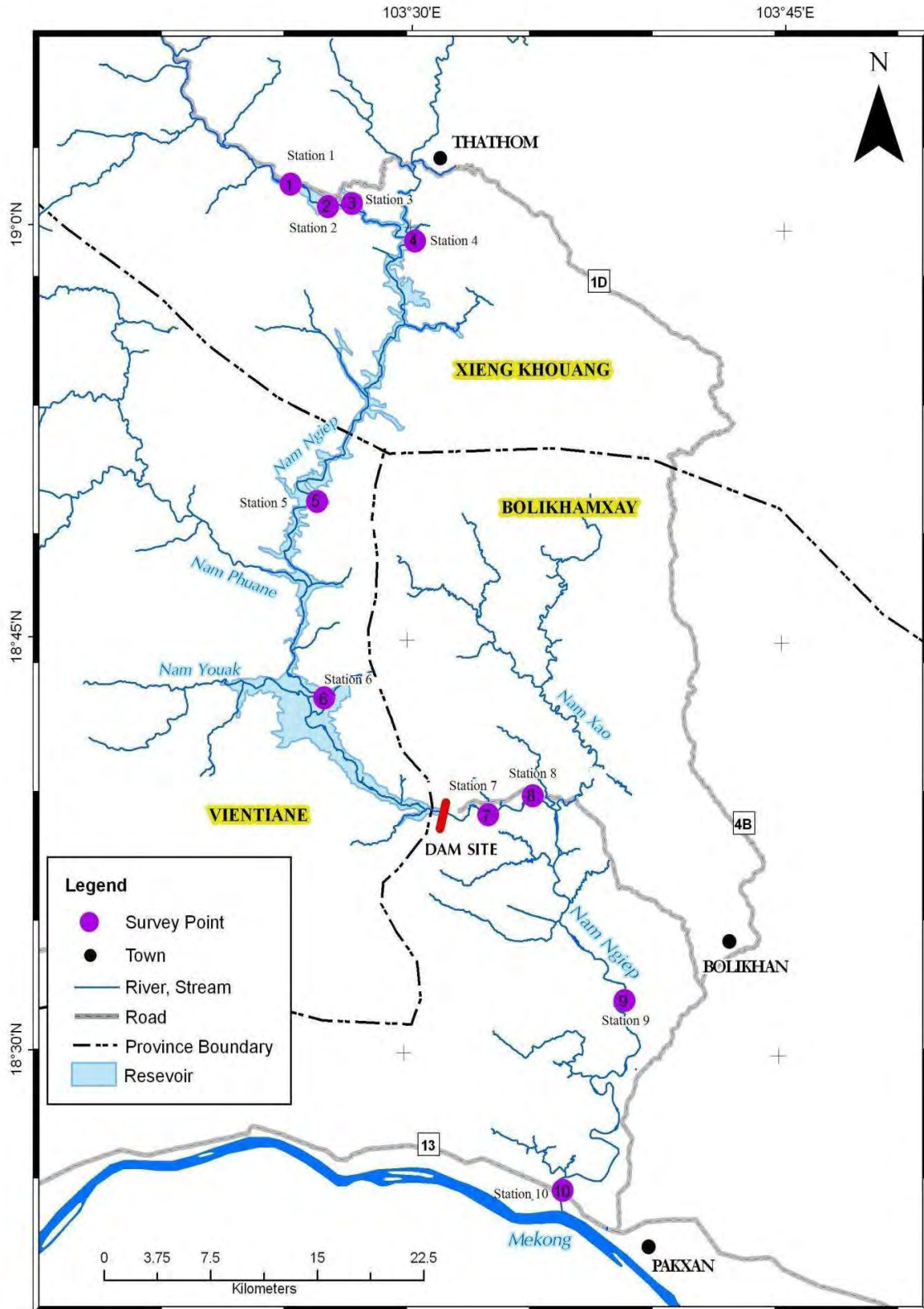


Figure 39: Fish and fisheries survey locations along the Nam Ngiep River

### 14.1.2.5.2 Fishery consumption

864. In terms of local dietary requirements, fish is the most important protein source in the diet for all communities within the proposed project area. Fish are caught mainly for household consumption with occasional surpluses being sold in local markets or sold to neighbours.
865. The catch is much higher during the rainy season, up to 5 kg per time. People tend to eat fresh fish throughout the rainy season. When more fish are caught than can be eaten fresh, the surplus catch is either sun-dried or brined to make Padek, a pickled fish. The preserved fish is eaten during the dry season, when catches are much lower.
866. A wide variety of fish species are caught for human consumption, with catfish and carp species being the most common. The village men fish in the mornings and evenings, before they leave for work in the fields and after they return from the fields. Most fish are caught by cast nets in the rapids along the rivers or by deep-water gill nets. To a lesser extent, bait and hooks are also used for fishing. Boys and women sometimes search the banks and shallows for frogs, aquatic insects, and small fish to supplement the family's diet.
867. According to the 2007/8 survey, fishing activities in the project area are not a key source of household income, but rather an important element for subsistence. Horticulture, livestock rearing, and handicraft production have been and will likely continue to be more important sources of cash income for villagers, while fishing is and will continue to be an important source of nutrition. Table 101 gives key information about fishing practices in the study area.

Fishing locations	Nam Ngiep River and its tributaries
Fishing tools	Fishing rod, fishing spear, stationary gill nets, fish net and cast net
Some of the main fish caught	Asian red-tail catfish ( <i>Hemibagrus wyckioides</i> ), <i>Micronema bleekeri</i> , Crystal-eyed Catfish ( <i>Hemibagrus wyckii</i> ), Wallago ( <i>Wallago attu</i> ), Glass Catfish ( <i>Kryptopterus bicirrhis</i> ), and <i>Garra fuliginosa</i> .
Boat type	Long tailed boat with motor and similar boats without motors
Frequency of fishing per month	10- 20 times per month
Maximum catch in one day	More than 10 kg.
Minimum catch in one day	1 - 5 kg.
Proportion of fish kept for home consumption in downstream villages	51%
Proportion of fish sold in downstream villages	49%
Fish markets	Villagers from Ban Hatsaykham and Hat Gniun take their catch to Pakxan and Ban Chomchuen markets. Other downstream villagers sell their fish in Huay Khun

Table 101: Summary of Fishing Practices (Source: Field Survey 2007/8)

868. The potential impact of the Project on fisheries, and in particular on fisheries downstream, is

one of the main concerns for the Project. These impacts can be divided into two periods: (1) pre-construction and construction and (2) operations phases:

#### **Pre-construction and construction phase**

869. Many of the pre-construction and construction activities will have direct impact on the quality and flow of water. Logging and clearing the reservoir area, clearing of main construction sites, building access roads, and other preparatory activities will release soil and other matter into the water. Construction work creates noise and vibrations. The flow of the river will need to be diverted during construction. All these will disturb riparian lives, especially in the reservoir and construction areas and potentially downstream.
870. Of particular concern for downstream communities is the potential impact of heavy rains. With large areas cleared of vegetative cover, much more soil and debris is expected to wash away into the river, leading to considerable turbidity downstream. Precautions have to be adequate, so that construction material including hazardous materials and waste will not be swept into the river, polluting the river.

#### **Operations phase**

871. In the first years of operation, when the reservoir is newly filled, the remaining vegetative biomass will degrade in the water, leading to reduced levels of oxygen. When this water is released downstream, it will also reduce the oxygen levels in the river. If greatly reduced, fish could die. Even if not as severe, the growth of the fish can be stunted. Because fish are such an important part of the diet of people, any reduction in their catch will have serious impacts on their quality of life.
872. These impacts will be discussed in greater detail in the impact analysis chapters.

#### **14.1.2.6 Gardening**

873. In addition to rice and fish, vegetables are central to the Lao diet and can be found in every meal. In times when nothing else is available, Lao families will eat rice with vegetables to dip in chilli sauce. Vegetables are eaten raw, boiled, stir fried, as medicine, as herbs, and spices. Among the common vegetables grown and eaten by people in the project area are: cucumbers, chillies, Chinese cabbage or bok choy, cabbage, raw papaya (used like a vegetable in Tam Som), string beans, yard-long beans, squash, bean sprouts, coriander, tomatoes, long eggplant, round eggplant, lettuce, sponge gourd, and morning glory.
874. **Spice trays:** Spices and herbs, such as spring onions, garlic, coriander, parsley, mint, basil, and chillies are often grown in large wooden trays.
875. **Gardens by the river:** Many of the leafy vegetables that require considerable water are grown near the river or streams. These garden plots are bounded with bamboo fences to keep animals out. These vegetable gardens are planted after the rice harvest, or during the cool dry season. During the rainy season, vegetables from the nearby forests or from their garden plots are more abundant, and the land along the rivers is converted to grow rice instead. These plots tend to be small, about 0.08 to 0.3 ha, but are a significant factor for



family nutrition. Qualitative data collection shows that in vegetable gardens are cultivated by most of the families in the Project zones with moderate to severe impact, even though steep river slopes restrict a broader usage of river bank gardens in many areas.

#### 14.1.2.7 Non-Timber Forest Products (NTFPs)

876. Forest and non-timber forest products (NTFPs) play an important role in the livelihoods of many local people, especially the poor. Most rural households depend heavily on forests not only for timber for house construction and other purposes but also for food, fodder, fencing materials, medicines and condiments. Villagers also often derive cash income from sale of NTFPs and, in many areas, harvesting of forest resources is one of the few available economic activities.
877. Some of the NTFP species include high value species which used as medicinal plants or herbs such as cardamom (*Amomum Xathioides Wallich*), Beberin (*Cosciniumfenestratum-Gagnepain*), Neolouryapierri Rod, *Ziziphusattopoensus Pierre*, and others; while other important sources of nutrition for local people are for example mushrooms, bamboo shoots, wild vegetables, and wild fruits.
878. Non-Timber Forest Products in the Project Impact Zone are collected by all families, mostly for their own use, but also some for sale. The collection of NTFPs is a traditional practice that has been passed along for generations. The main NTFPs used by the villages in the project area are:
- Vegetables and other edible plants, such as bamboo shoot, wild yam and other tubers, mushrooms, rattan shoots, and some herbs and spices
  - Herbal medicine
  - Honey
  - Animals as food, including forest rats, field rats, squirrel, monkeys, mouse deer, birds, and insects
  - Materials to build houses, including bamboo, banana leaf, and nipa leaf, in addition to timber from forest trees
  - Firewood, from small branches and pieces of wood that have fallen to the ground
  - Materials collected for sale, such as resins and gums, shellac, aromatic woods, rattan, and sugar palm
879. While NTFPs are important in daily life, they are not an important source of cash income for the villagers in most of the project area, accounting for up to only 0.5 to 1.4 % of the total cash income in Zone 2UR and 5 % in Zone 3 (according to 2011 Survey data). This is much less than the national average, in which sales of NTFPs account for up to 10% of cash income.
880. Sales of NTFP account for a much larger portion of the annual cash income of the people in Zone 2LR, on average 21 per cent of the total, though in total value, given their low cash incomes, this comes to about 1.75 million Kip per year, or about US\$ 220 per household; though the cash value is still rather small, in part due to the limited reach of market. Still, impact on these resources can have a significant impact on the livelihoods of PAPs,

particularly in terms of nutrition. Although there is no clear national guidance regarding compensation entitlement for village forests as well as lost NTFP sources within the village forest, in order to ensure that PAPs are compensated adequately to restore their forest land and assets livelihood, it may be necessary to provide compensation for forest land more broadly than only for village forest land. ADB's SPS provides for consideration of forest resources in planning mitigation measures. In cases where village forest land is lost, then new forest area will need to be allocated for community use. Accordingly, such area has to be provided in the resettlement site. It is recommended that security of tenure for community resources is ensured by providing Community Land Title (CLT) for community land and property for resettler and host households affected by the Project. This has been applied for resettler households in Nakai district under the Nam Theun 2 Hydropower Project, and the Project will provide for district and provincial authorities to visit Nam Theun 2 to see how such activities were conducted.

#### **14.1.2.8 Tourism**

881. There are no important tourist destinations in the project area. However, the Plain of Jars in Xieng Khouang, one of the most important world heritage sites and tourist destinations of the country, lies just north of the Nam Ngiep catchment area, about 50km from the villages of 2UR. This area also has remnants of the Secret War, the intensive bombing by the United States on Lao territory during the Vietnam War.
882. Other tourist destinations near the Project lie along Highway 13 from Vientiane, among them the ancient That Phonsan, and a number of scenic sites, trekking, and elephant tourism sites just south of the Phou Khao Khouay National Protected Area. The town of Pakxan in Bolikhamxay Province is important as a river town and gateway to Thailand.
883. While the project area is itself quite scenic, its relative inaccessibility does not make it a tourist destination at present. However, the newly constructed National Road 1D from Phonesavanh in Xieng Khouang Province and its intersection to Pakxan in Bolikhamxay Province, following the path of the Nam Ngiep River, opens opportunities for nature-based and scenic tourism in the area. There are numerous small waterfalls, caves, and traditional villages along the way. With links to Xieng Khouang, tourism in the area can offer historical, natural, and cultural attractions.

#### **14.1.2.9 Cash Income**

884. One of the main sources of cash income is the sale of livestock. Even though many households may have surplus crops to sell, the difficulty is to reach potential customers for communities living far from the markets, difficult to access via seasonal roads.
885. Table 102 and Table 103 present the main sources of cash income for households in the various zones. Data in Table 102 are of communities in zones 1, 4, and 5; and were derived from a survey of 10% of the households in these villages<sup>25</sup>. The information presented in

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<sup>25</sup> Zone 1: Report LEM, 2008; for Zones 4 and 5: HH interviews in 2011

Table 103 is from 2UR, 2LR, and Zone 3, where 100% of the households were surveyed. The information from these communities is much more detailed, because of the need to plan and implement appropriate social and economic development programs to mitigate the impacts of the Project. Updated data will be collected mid-2014 for detailed planning of livelihood restoration measures.

Activities	Upstream Area (Zone 1)		Downstream Area (Zone 4)		Resettlement Area (Zone 5)	
	<i>in Kip</i>	<i>in %</i>	<i>in Kip</i>	<i>in %</i>	<i>in Kip</i>	<i>in %</i>
<i>Crops</i>	4,815,823	59.0	8,451,239	19.9	3,894,564	22.0
<i>Livestock</i>	2,818,750	35.0	3,822,169	9.0	2,354,441	13.3
<i>Fishery</i>	322,813	4.0	509,622	1.2	725,805	4.1
<i>Off Farm</i>	160,000	2.0	29,685,509	69.9	10,727,752	60.6
<b>Total</b>	<b>8,115,388</b>	<b>100.0</b>	<b>42,468,539</b>	<b>100.0</b>	<b>17,702,562</b>	<b>100.0</b>

Table 102: Declared Cash Income per year of Communities in Zones 1, 4, and 5 (Source: For Zone 1: Report LEM, 2008; for Zones 4 and 5: HH interviews in 2011)

Activities	Upper Reservoir Area (Zone 2UR)		Lower Reservoir Area (Zone 2LR)		Construction Area (Zone 3)	
	<i>in Kip</i>	<i>in %</i>	<i>in Kip</i>	<i>in %</i>	<i>in Kip</i>	<i>in %</i>
<i>Rice production</i>	1,709,186	4.7	667,283	8.1	294,909	2.0
<i>Livestock</i>	2,204,250	6.1	2,729,747	33.3	3,244,848	24.7
<i>Cultivated Trees (including fruit trees)</i>	9,956,667	27.5	140,900	1.9	1,260,000	9.6
<i>Vegetables and other plant crops</i>	9,045,849	25.0	776,961	9.5	2,751,393	20.9
<i>Fishery</i>	506,713	1.4	635,104	7.7	1,330,909	10.1
<i>Hunting</i>	53,026	0.1	0	0.0	884,848	6.7
<i>NTFPs</i>	190,341	0.5	1,745,266	21.3	414,545	3.2
<i>Wages</i>	11,863,280	32.8	378,385	4.6	2,928,000	22.3
<i>Handicrafts</i>	N/A	N/A	N/A	N/A	N/A	N/A
<i>Other</i>	666,181	1.8	1,127,552	13.8	25,758	0.2
<b>Total</b>	<b>36,195,493</b>	<b>100</b>	<b>8,201,288</b>	<b>100</b>	<b>13,135,210</b>	<b>100</b>

Table 103: Declared Annual Cash Income of Communities in 2UR, 2LR, and Zone 3 (Source: Field Survey HH Interviews 2011)

### 14.1.3 Social Organization and Cultural Relations

886. PAPs are integrated into a diverse and complex network of social organizations and cultural relations. A key element is the public administration of Lao PDR. People are resident in villages, headed by a Village Chief. Villages are combined into districts, which again form provinces, finally resulting into the national community of the Lao PDR. Ministries on the national level have embodiments on the provincial and district level. Essential for this project are the Ministry of Energy and Mines, the Ministry of National Resources and Environment, and the Ministry of Agriculture and Forestry, but also the Ministry of Health, the Ministry of Education, and the Ministry of Information and Culture. These public institutions are supported by mass organizations with structures on all levels: the Front for National Construction, the Lao Women Union, and the Lao Youth Union.
887. Next to these public institutions, PAPs are integrated into further social and cultural relations within and between villages. These include on the village level informal elders councils, which have an essential say in the development of a community. Several villages may be amalgamated into one administrative unit, even though they are both culturally and geographically distinct, for example, Hatsaykham is a sub-village of Hat Gniun. Hmong people in the Project Impact Zone are identified and linked by clan systems, which connect villagers from the upper reservoir area with the lower reservoir area and the construction site. These linkages extend further to Hmong communities in the rest of the country as well as abroad, which allows them to mobilize cultural and social resources to support the communities in their communication with the Project. It also enables information about experiences in other hydropower projects to be widely shared and circulated.
888. Recent Lao history led to further social networks between local and central level, which have to be taken into account when addressing stakeholders. While for the older generation, the liberation war is an essential factor in the evolution of such networks, for the young generation, modern communication as well as work and education in urban areas have extended the social networks of villagers in the Project Impact Zone, providing them with additional social and cultural resources and influencing their development, preferences and life choices.

### 14.1.4 Poverty

889. A number of social and economic conditions are similar throughout the project area. These crosscutting issues, including livelihoods, ethnicity, gender issues, education, and health, are presented here before more detailed descriptions in each zone are presented in the next chapters.

#### 14.1.4.1 Millennium Development Goals

890. The Millennium Development Goals (MDGs) have been agreed upon internationally including GoL as indicators of basic social and economic conditions necessary for people to lead adequate lives, free of hunger, with good health, and with opportunities to improve their lives.

891. Following decades of war, Lao PDR is among the world's poorest countries and ranks on the UN Human Development Indicator list in the Least Developed Countries group. Aside from living in poverty, many people in the country lack educational opportunities and health care. GoL is committed to raise incomes and improve the standard of living of its citizens, with strong efforts to attain the MDG targets set for 2015.
892. For the purpose of this ESIA, the MDGs provide two benchmarks: first, the existing conditions in Lao PDR, the extent to which the country has met the MDGs, provides the context for understanding similar conditions in the project area. Second, the MDGs can be seen as goals for the social and economic development of the communities in the project area, at least for the short-term.
893. The first Millennium Development Goals is to eradicate Extreme Poverty and Hunger. To accomplish this, countries are urged to reduce the number of people living on less than US\$1 per day and to reduce the number of people living in hunger. According to the MDG Report for Lao PDR 2013, the national poverty rate in Lao has declined by 40 per cent over the period 1992/93 to 2007/08. The country has also seen a steady reduction in the poverty gap and poverty severity over time, i.e. poverty in relation to not poor people and the intensity of poverty. However, there are disparities in this development and the poverty rate in rural areas is still almost twice that of the urban areas, with mountainous areas and upland villages showing the highest incidence of poverty, i.e. the area where NNP1 has direct impact. According to the 2013 MDG report, growth had little effect on these communities. The report suggests that "tailored interventions are needed for the poorest groups, where the
- i. lack of access to infrastructure,
  - ii. markets and
  - iii. services
- remain a barrier to growth and poverty reduction. Policies for consolidating villages and stabilizing settlements and livelihoods should ensure not only adequate infrastructure provision, but also
- iv. capacity development and
  - v. access to productive land for resettled groups."
894. The NNP1 resettlement program will take this advice into account and directly integrate it into the resettlement and social development plans. This includes a focus on stunting in children; with an estimated 44 per cent of children less than five years of age stunted one of the key challenges for Lao PDR. The Project will integrate nutrition as a key component of resettlement and livelihood development support, including adding it as a key component to the health monitoring program. It, too, will take into account the analysis, that the most essential point is nutrition of pregnant woman and children in the first two years of their life.
895. The second Millennium Development Goal links to poverty, focusing on education. As the

report points out “Remoteness, exclusion, and lack of education are likely to characterize those living on less than 50 cents a day. The lack of education perpetuates the intergenerational cycle of poverty, since education has a significant positive impact on agricultural productivity, employment, access to credit, use of government services, health outcomes and can provide the poor with the means to move out of poverty”. Key indicators are findings of learning outcomes assessment, high repetition and drop-out rates, and low completion rates at both primary and lower secondary level. The Project will address this analysis by putting a strong focus on education. While the overall responsibility lies with GoL, the Project will support the PAPs with the development of modern infrastructure, the improvement of access to urban areas via road and communication infrastructure, and the provision of scholarship programs next to part-time offers like literacy classes and livelihood trainings.

896. The third Millennium Development Goal focuses on promotion of Gender Equality and Empower Women along the indicators of gender disparities in schooling, women in wage employment, and number of women in political decision making positions. The Project has to address this goal as a cross-cutting issue as outlined below.
897. The fourth to sixth Millennium Development Goal addresses health challenges: reduction of child mortality; improvement of maternal health; and combat HIV/Aids, Malaria, and other widespread severe diseases. The Project will invest in health infrastructure and support a broader community health program as outlined in the Social Development Plan.

The last two Millennium Development Goals, environmental sustainability and global partnerships for development will be kept in mind, for example during the development of the resettlement site, but are not directly addressed by specific programs of the Social Management Office.<sup>26</sup>

#### **14.1.4.2 Poverty in Lao PDR**

898. Most of the people of Lao PDR are primarily subsistence farmers who produce for their own consumption, even though urbanization as well as market-oriented reorientation is gathering pace. Furthermore, the current food production of these subsistence farmers is improvable by new planting techniques, facilitated by GoL and development organizations.
899. The average per capita income of the country was estimated in 2010 to be the equivalent of US\$1,050, or just under US\$3 per person per day.<sup>27</sup> In 2008, about 27.6 per cent of the population were estimated to live below the poverty line. While still rather high, this is a considerable decline from the 33.5 per cent living in poverty in 2002 and the 45 per cent in

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<sup>26</sup> All information derived from The Millennium Development Goals Progress Report for the Lao PDR 2013; Jointly prepared by the Government of the Lao PDR and the United Nations. Available from: [http://www.la.undp.org/content/lao\\_pdr/en/home/library/mdg/mdgs-progress-report-lao-pdr-2013/](http://www.la.undp.org/content/lao_pdr/en/home/library/mdg/mdgs-progress-report-lao-pdr-2013/)

<sup>27</sup> <http://data.worldbank.org/country/lao-pdr>

poverty in 1992.<sup>28</sup> GoL periodically revises thereby the poverty line to adapt it to consumer price developments. Further details can be found in the mentioned MDG Report 2013.

900. Thereby, the incidence of poverty is greater in the countryside than in cities. Table 104 provides the national poverty rates for the entire country, for rural areas, for urban areas, and the Gini Coefficient to indicate the distribution of wealth (or poverty) in the country. The official poverty rate for the Lao PDR is considered about US\$1.50 per person per day. Given the relatively lower cost of living in the countryside than the city, urban poverty was set in 2001 at 100,000 kip per person per month, and rural poverty at 82,000 kip per person per month, with 1 US dollar at that time equal to about 7,600 kip (in June 2001). In 2013, households were considered poor when they had an income (or the equivalent in kind) less than the defined threshold of around LAK 192,000 per person per month (LAK 240,000 for urban and LAK 180,000 for rural households). As noted earlier, there has been a significant decline in overall poverty between 1992 and 2008. Rural poverty remains much higher, with 1 in 3 rural residents living in poverty compared to 1 in 4.5 urban residents.



Figure 40: Gini-Index development in Lao PDR (Source: MDG Report 2013/Lao Expenditure and Consumption Surveys 1-4)

901. The Gini Coefficient shows that the distribution of wealth in Lao PDR is volatile, but the trend is towards an increase of disparity. The higher the value, the more unequal the spread of wealth. The MDG 2013 analyses that the share of consumption attributed to the richest quintile has largely driven the inequality trends, i.e. while consumption of rich people increases, consumption of poor people remains on the same level. As the report continues,

<sup>28</sup> Ibid

consumption growth amongst households below the poverty line has been slower than growth for the rest of the population. To qualify this assessment, the report notes that despite increases in inequality, most of the population experienced an improvement in material welfare.

	National Poverty	Urban Poverty	Rural Poverty	Rural Poverty without road	Rural poverty with road	Gini Coefficient
1992-93	46.0%	26.5%	51.8%	60.4%	42.8%	0.31
1997-98	39.1%	22.1%	42.5%	50.8%	31.7%	0.35
2002-03	33.5%	19.7%	37.6%	46.2%	31.3%	0.33
2007-2008	27.6%	17.4%	31.7%	42.6%	29.9%	35.4

Table 104: Poverty incidence and inequality in Lao PDR, 1992 to 2008 (Source: MDG Report 2013/Lao Expenditure and Consumption Surveys 1-4)

902. Poverty is widespread in Lao PDR, particularly in rural areas. The Department of Statistics of the GoL in 2003 classified 72 of the country's 142 districts ("Muang") as poor. In 2010, the focus of poverty eradication changed from poor districts to the poorest villages and households, in order to make interventions more effective and inclusive, following GoL's issued Decree 201. The factors used to assess poor communities in Lao PDR by the National Committee for Rural Development and Poverty Eradication are:

- *Income*: 50 per cent of households in the village have an income less than the defined poverty thresholds,
- *Education access*: within one hour's walking distance from a complete primary school,
- *Health access*: with two hours' walking distance from a health clinic,
- *Easy access to water*: the water source must be in the village or very close by,
- *All-weather road access*: it is possible to reach the village safely by car during all seasons.

903. It should be noted that the 3 districts in the project area upstream of the dam as well as the dam site itself are among the 47 priority poverty districts announced before 2010.<sup>29</sup> When communities are asked about their definitions of poverty, they often include lack of adult labour (particularly important for livelihoods development), large numbers of non-earning members (e.g. children, elderly or disabled) compared to numbers of earners, the quality of food that people eat, inability to generate surpluses (either in cash or kind), and those who have to borrow more frequently from family or friends.

904. Efforts under the 6th National Plan (2006 to 2010) saw considerable reduction in poverty levels throughout the country. It should be noted that the goal of increasing national income by an average of 7.2 under the 6th Plan was exceeded between 2006 and 2010, as seen in

<sup>29</sup><http://www.undplao.org/newsroom/publication/Ngpes/Lao%20PDR%20-%20NGPES%20-%20Map%20of%2072%20poor%20districts.pdf>



Table 105, with the recent worldwide recession slowing growth in Lao PDR only slightly.

Year	2006	2007	2008	2009	2010	2011	2012
Growth-Rate in %	8.1	7.9	7.2	7.3	7.5	7.8	7.9

Table 105: GDP Growth Rate of Lao PDR, 2006-2010 (Source: ADB Lao PDR Fact Sheet)

905. GoL policies to address poverty in the 7th National Plan (2011 to 2015) are to decrease the rate of poverty to below 19% of the total population and below 11% of total households, to increase the national per capita income from US\$986 in 2009/10 to US\$1,700 in 2015, to expand retail markets to over 80 per cent of the country, establish rural enterprise units in at least 30 per cent of the villages, expand food processing and handicrafts by over 12 per cent (handicrafts by 15 per cent) and to increase exports by about 18 per cent per year. The Project will connect to these targets and integrate efforts in livelihood development to these broader national development goals.

#### 14.1.4.3 Poverty in the Project Area

906. In the project area, it is always difficult to obtain precise data on household income. The following figures are therefore what affected households are willing to acknowledge. The average annual cash income reported by surveyed households ranged from 8,115,000 to 42,500,000 Kip (about US\$1,000 to \$5,300, at the current exchange rate of 8,000 Kip to US\$1) per household, a large percentage of this cash income largely coming from cultivation of rice, fruit trees, vegetables and other crops. With an average of 6 to 7 persons per household, the average annual per capita cash income spread over a wide range from about US\$140 to \$1,350.
907. The lowest reported average cash incomes belong to households in Zone 1, as well as in Zone 2LR, Zone 3, and Zone 5 – the upstream communities in the watershed and the communities that will need to be resettled along with the host communities. Their average annual cash incomes ranged from 8,115,000 (Zone 1) and 9,040,000 Kip (Zone 2LR) to 13,000,000 Kip (Zone 3) and 17,700,000 Kip (Zone 5), means an average annual cash incomes ranging from US\$1,000 to \$2,200 per household or about US\$150 to \$330 per person.
908. The average annual cash income of the villagers in Zone 2UR, which is also directly affected by the project, is 36,200,000 Kip, or about US\$4,525 per household and US\$730 per person.
909. The indirectly affected area of Zone 4 has the highest average annual household cash incomes: 42,500,000 Kip in Zone 4 (US\$5,300 per household or \$1,000 per person, with an average household size of 5.3 in this zone).
910. Taken together, while the communities of Zone 2UR, 4, and 5 are on average above the poverty lines described above, the communities to be resettled (2LR and Z3) are up to 30% under this benchmark and have to be considered poor along these criteria. Many of the households in these communities remain below the national poverty line, even when the imputed value of goods produced or gathered for household consumption would be added. It should be mentioned, too, that some households are socioeconomically much stronger

than others in these communities. Data on food security highlights these overall circumstances and the design of the updated baseline survey in 2014 will take care to assess poverty via reliable and viable indicators based on the lessons-learned from the Lao Expenditure and Consumption Surveys and Surveys in other large hydropower projects as Nam Theun 2.

911. Thus, food security and poverty alleviation is a key concern for the Project and via the poverty alleviation test outlined in the Concession Agreement, also a key benchmark.

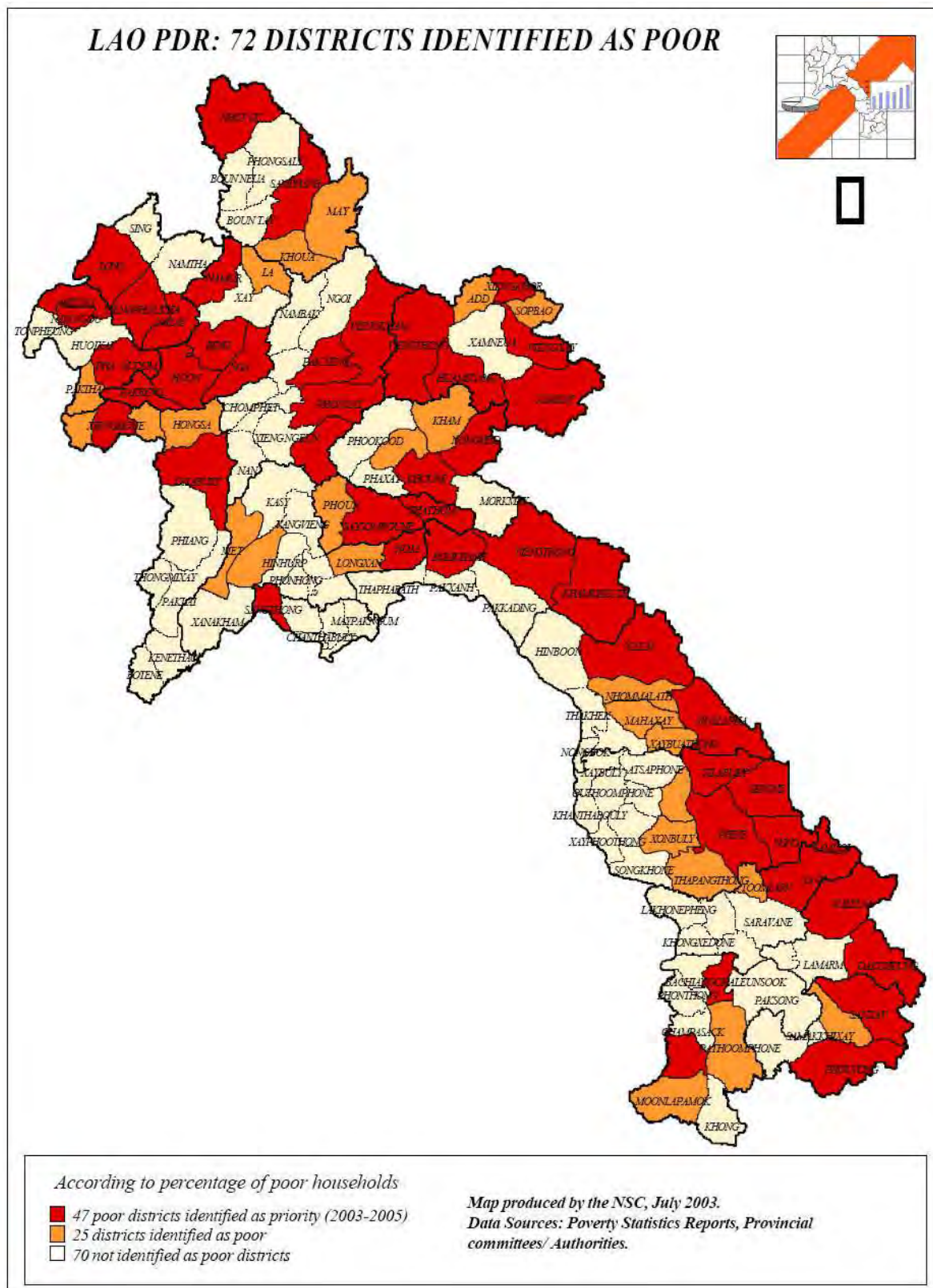


Figure 41: Map of Lao PDR: 72 District identified as poor

#### 14.1.4.4 Rice Sufficiency (Food Security)

912. In a fundamentally self-sufficient economy as found in much of rural Lao PDR, another way to measure relative poverty is through food security. As a study by the World Food Program<sup>30</sup> outlines, there is no single indicator that can easily identify food insecure households but rather it is necessary to assess a combination of several characteristics to differentiate food insecure from food secure households, including agricultural production, employment, fishing, hunting, and kitchen gardens. Rice consumption is a key feature, again related to rice production and production possibilities. Different nutrition characteristics of different ethnic communities will have to be assessed to understand the necessity to put different weights on these different food sources.
913. Vice versa, food insecurity is strongly related to the risks of external shocks: loss of access to natural resources, flood, drought, or due to a sudden increase in food prices.
914. In the case of Lao PDR, the main crop is rice, and food security is typically measured by the number of months people have rice to eat. For the impacted communities, which all have settled in their locations for several decades and practice rice cultivation, rice consumption can be a viable indicator, too. On average, about 70 per cent of the calorie and protein intake of the Lao people comes from rice.<sup>31</sup> Table 97 outlines rice sufficiency in the project area. Constant monitoring of social indicators of the impacted households will allow assessing the development of food security over the project period and necessary interventions in case of food insecure households, which form part of vulnerable households as outlined in the section below.

### 14.1.5 Education

#### 14.1.5.1 Education on the National Level

915. Education in Lao PDR is divided into primary, secondary, and tertiary or advanced levels. Primary education is compulsory. It is for 5 years, intended for children between ages 6 and 11 years old, though many rural and ethnic minority children start school much later. Secondary education is sub-divided into lower secondary schooling for 3 years and upper secondary schooling for another 3 years.
916. Students can further their studies in Technical School for 3 years, which provides a Diploma, or Higher Technical School, which is also for 3 years and provides a Higher Diploma. Entrance in these courses is through an entrance examination. The country has 2 universities with degree programs: The National University of Laos (NUOL) which has several faculties

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<sup>30</sup> World Food Programme: Lao PDR Comprehensive Food Security & Vulnerability Analysis (CFSVA), December 2007.

<sup>31</sup> Njoman George Bestari, Samjhana Shrestha and Caren Joy Mongcopa, "Lao PDR: an Evaluation Synthesis on Rice: A Case Study from the 2005 Sector Assistance Program Evaluation for the Agriculture and Natural Resources Sector in the Lao People's Democratic Republic" ADB, September 2006.

in Vientiane and a Campus in Champasak; and Souphanouvong University. In addition, there are 10 teacher training colleges. There are plans to transform the higher technical institutes and teacher training colleges into Regional Colleges. Furthermore, there are a series of private colleges, offering advanced diploma and bachelor courses; mostly in Vientiane, but as well in provincial capitals. Furthermore, a series of competitive international scholarships allow students to study bachelor, master, and PhD programs abroad, including in ASEAN countries, China, Japan, Australia, USA, France, Germany, etc.

While there are pre-school nurseries and kindergartens, these remain limited in number and are found mostly in the cities.

917. A study of school attendance in Lao PDR found that members of the country's ethnic minorities were less likely to enrol in or to attend school than ethnic Lao or other Lao-Tai groups. (Seel, 2003) At the same time, ethnicity and poverty are also linked. These findings were confirmed by the analyses in the MDG Report 2013 quoted above. Wealthier districts tend to lie along the Mekong River, and these are predominantly Lao Loum. The poorest districts have the largest populations of ethnic minorities who are non-Lao speakers. In part of the effort to develop the poorest groups in the country, the Ministry of Education of Lao PDR launched its policy to improve the social and scientific knowledge of the nation, increase solidarity among ethnic groups, increase community awareness of national benefits, and preserve the national heritage through expanded education, with particular emphasis among ethnic minority groups. (Ministry of Education, 2006)
918. An important component of the education policy of the country has been to expand universal primary education. In the GoL monitoring of the MDGs, it reported that primary school enrolment in 1991 was 58 per cent of the school-age population. By 2004, this had increased to 84 per cent. However, though more children are attending schools, their completion of primary schools remains rather low, with only about 49 per cent of those starting primary school completing the 5 years.<sup>32</sup> In the late 1990s, many rural children attended primary school for only 2 years.<sup>33</sup> More recently, this number has increased, with many children staying in school up to 4 years. The disparities are great, though, between urban and rural communities (urban residents more likely to stay in school longer), Lao-Tai and other ethnic groups (Lao-Tai likely to stay in school longer), and male and female (with the exception of urban Lao-Tai, males stay in school longer than females). The measure of female to male attendance in schools in the MDGs showed considerable progress at all levels. In 1991, there were 77 girls for every 100 boys in primary school. By 2006, this had increased to 86 girls for every 100 boys. In lower secondary schools, the numbers rose from 66 girls in 1991 to 74 girls in 2006 for every 100 boys, while in upper primary schools, the numbers rose from 49 girls in 1991 to 62 girls in 2006 for every 100 boys.<sup>34</sup> However, most of

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<sup>32</sup> GoL and UN, Millennium Development Goals, Progress Report, 2008.

<sup>33</sup> Yves Goudineau, "Basic needs for Resettled Communities in the Lao PDR: Resettlements and New Villages Characteristics in Six Provinces. Vol. 1, Main Report, Vientiane: UNDP, 1997.

<sup>34</sup> GoL and UN, Millennium Development Goals, Progress Report, 2008.

this increase in female attendance is among Lao-Tai ethnic groups and in urban communities. Females from rural non-Lao-Tai ethnic minorities are still likely to stay in school for only 1 or 2 years, while males from the same communities are likely to stay in school for up to 4 years.<sup>35</sup>

919. According to a 2003 report on education in Lao PDR, there were then around 7,500 primary schools. Only 35 per cent of those provided all 5 years of primary education. Another 35 per cent offered just the first 2 years of schooling. The remaining 30 per cent offered 3 or 4 years education.<sup>36</sup> More recently, the government reported over 12,000 primary schools.<sup>37</sup>
920. Secondary education has expanded considerably in recent years, but still remains relatively inaccessible for non-Lao-Tai ethnic minorities.<sup>38</sup> There are more than 950 secondary schools in the country, mostly in provincial and district centres. To encourage secondary education for ethnic minorities from remote communities, 3 boarding schools at the secondary level have been set up for ethnic minorities.<sup>39</sup>

#### **14.1.5.2 Education Plans of the Project Area**

921. With educational development a major pillar of GoL policy, it is not surprising that all the districts and provinces in the project area emphasize this component.
922. In its education plan, Xieng Khouang Province intended to eradicate illiteracy by 2010. The provincial plan also called for 95 to 98 per cent of the children to attend school, with 75 to 85 per cent to have the chance to continue to lower secondary school, and up to 60 per cent with a chance to study in upper secondary school.
923. Hom District, with a high population of non-Lao Loum ethnic groups, intended to expand the educational system into every village, and to adapt teaching methods suitable to local children. The district also proposed to build 2 new lower secondary schools and 1 new upper secondary school. Informal education was to be promoted to reduce illiteracy among those aged 15 to 45. The district vocational school was to expand its program to include business education.
924. Bolikhamxay Province emphasized the provision of permanent school structures in isolated areas. Educational campaigns were to be carried out to increase the number of children entering school. Tertiary education was to be expanded, with a vocational school and four technical schools providing education in business management, administration, agriculture, construction, and wood processing, and with new curricula added in law and medical care.

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<sup>35</sup> King and van den Walle, *op cit.*, p. 20.

<sup>36</sup> Amanda Seel, "Progress on Education for All (EFA) in Lao PDR" November 2003.

<sup>37</sup> [http://www.laoembassy.com/30 years of Lao PDR.htm](http://www.laoembassy.com/30%20years%20of%20Lao%20PDR.htm)

<sup>38</sup> Seel, *op cit.*

<sup>39</sup> [http://www.laoembassy.com/30 years of Lao PDR.htm](http://www.laoembassy.com/30%20years%20of%20Lao%20PDR.htm)



### 14.1.5.3 Education in the Project Area

925. The first study of 2007/8 revealed that many of the villages in the study area, especially the five villages in the inundation zone, did not have properly functioning schools. This situation resulted from at least two factors:
- i. attendance was low because the families needed the children to help harvest rice and other crops and forest products; and
  - ii. teachers did not conduct classes regularly.
926. During the field survey on February to April 2007, teachers who should have been conducting classes were often found at their homes, much to their embarrassment. The incentive for performing their duty is not great since the district only paid 200,000 Kip per month (approximately US\$21 in 2007), and they often had to find some other tasks to raise enough money to live on. Some schools are financed by the villagers themselves since the local government had neither the funds nor the resources to provide teachers. The situation had just little improved by the time of the 2011 surveys.



*A school in Ban Pou*



*Primary school in Ban Soppuane*



*Primary school in Ban Sopyouak*



*Primary school in Ban Namyouak*

Figure 42: Schools in the project area

927. Despite the best intentions of the district and provincial governments, it is extremely difficult for them to carry out their education policies and plans. Lack of funds and other resources makes it nearly impossible to build new schools, repair old ones, or hire enough teachers. It is also difficult to find people trained as teachers who are willing to work in

remote areas at low salaries.

#### 14.1.5.4 Education Levels of the Residents in the Project Area

928. The table below shows the education levels reported by people in the project area, whether they completed primary school, lower secondary school, higher secondary school or tertiary education. As expected, the numbers of people who have completed any formal education is still quite low, especially among more remote communities. It is only those communities downstream from the proposed dam site, near roads and larger towns that have higher rates of education.
929. It needs to be stressed as well that the data show the number of people who have completed each level of education, not the number of people who have attended any school at all. Until recently, there were no schools in many of the communities of the project area; so older residents were not likely to have attended schools. Even with primary schools now available in most of the villages, many of them do not yet have the capacity, neither the teachers nor the resources, to teach the full 5 years of compulsory education. As a result, even most of the younger residents in these communities will not have completed the full 5 years of primary education.
930. From the field surveys in 2007 and 2008, it was found that the primary schools in the villages in Zones 1 and 2UR, upstream and the upper reservoir, all of which are in Xaysomboune Province, are constructed mainly of bamboo with thatched roofing. The structures are not very sturdy. In the communities in the Zone 2LR, the lower reservoir that will be fully inundated, the construction of some of the primary schools was of wood. The secondary school in this zone was also of bamboo with thatched roof. All of the proposed host communities for the resettled households have single-story wooden primary schools with some basic water and sanitation facilities (see zone-specific SIAs).

Village Name	Total Population	Education Level (number of persons) n = 624 HH									
		No formal education		Primary School		Lower Secondary		Upper Secondary		College or University	
		People	%	People	%	People	%	People	%	People	%
<b>Upstream Area (Zone 1)</b>											
1. Dong	756	-	-	49	6.5	39	5.2	12	1.6	2	0.3
2. Phonngeng	589	-	-	37	6.3	31	5.3	9	1.5	1	0.2
3. Nasong	627	-	-	42	6.7	46	7.3	13	2.0	3	0.5
4. Viengthong	401	-	-	16	4.0	12	3.0	7	1.7	2	0.5
5. Nasay	246	-	-	13	5.3	11	4.8	4	1.6	0	0
6. Xiengkhone	378	-	-	16	4.2	9	2.4	5	1.3	3	0.8
7. Nahong	552	-	-	35	6.3	25	4.5	11	2.0	2	0.4
8. Phonhom	628	-	-	38	6.1	22	3.5	13	2.1	3	0.5
<b>Upper Section of the Reservoir Area (Zone 2UR)</b>											
1. Pou	1,129	342	37.8	376	41.5	129	14.3	55	6.1	3	0.3
2. Piengta	454	87	21.1	199	48.3	91	22.1	33	8.0	2	0.5



3.	453	56	12.5	230	51.6	116	26.1	43	9.6	1	0.2
<b>Lower section of the Reservoir Area (Zone 2LR)</b>											
1.	254	39	27.3	86	60.1	9	6.3	8	5.6	1	0.7
2. Sopphuane	416	102	35.1	120	41.2	51	17.5	14	4.8	4	1.4
3. Namyouak	1,149	145	19.0	388	51.0	142	18.7	57	7.5	29	3.8
4. Sopyouak	916	48	11.1	157	36.3	140	32.4	69	16.0	18	4.2
<b>Construction Area (Zone 3)</b>											
1. Hatsaykham	218	72	33.0	104	47.7	27	12.4	13	6.0	2	0.9
<b>Downstream Area (Zone 4)</b>											
1. Somseun	1,207	35	14.8	55	23.3	55	23.3	38	16.1	53	22.5
2. Ban	2,180	43	10.9	132	33.6	68	17.3	83	21.1	67	17.1
3. Ban Nampa	584	12	12.0	49	49.0	24	24.0	11	11.0	4	4.0
4. Ban Thong	839	15	12.8	59	50.4	30	25.7	8	6.8	5	4.3
5. Ban Thong	437	4	5.0	32	39.5	15	18.5	18	22.2	12	14.8
6. Ban Sanaxay	1,156	-	-	-	-	-	-	-	-	-	-
7. Phonsy	719	19	11.3	58	34.3	49	29.0	36	21.3	7	4.1
8. Ban Pak	659	16	11.5	33	23.7	34	24.5	27	19.4	29	20.9
<b>Host Communities (Zone 5)</b>											
1. Ban Hat	371	51	6.2	227	27.8	522	64.0	7	0.9	9	1.1
2. Thahuea	265	56	21.1	125	47.2	63	23.8	14	5.3	7	2.6

Table 106 Education Levels per Village and Project Zones

### 14.1.6 Health

931. As with education and other social services, provision of health care in Lao PDR was quite scarce after the decades of war and with so many remote communities. In recent decades, conditions have improved considerably, with provision of fundamental health care to all parts of the country a top priority of the government.
932. Great progress has been made in several areas. A concerted effort to control malaria has had dramatic results. Death rates from malaria have been reduced from 9 people in 100,000 in 1990 to only 0.4 people in 100,000 in 2006.<sup>40</sup> With many remote communities that are difficult to access, the GoL has implemented a policy to extend health care through village public health volunteers and village medical kits, now totalling over 16,000. In 2004, there were 12 provincial hospitals, 127 district hospitals, and several other regional and central hospitals. A number of local level dispensaries/health centres were also set up.<sup>41</sup>
933. The targets of the seventh national development plan for 2011 to 2015 give an indication of the main public health issues facing the country. These were to:
- To decrease maternal mortality ratio to not more than 260 per 100,000 live births;

<sup>40</sup> GoL and UN, Millennium Development Goals, Progress Report, 2008.

<sup>41</sup> [http://www.laoembassy.com/30 years of Lao PDR.htm](http://www.laoembassy.com/30%20years%20of%20Lao%20PDR.htm)

- To decrease the infant mortality to 45 per 1,000 live births;
- To decrease under-five child mortality ratio to 70 per 1,000 live births;
- 80% of total population to have access to potable water;
- 60% of total population to have and use latrines.
- To decrease the proportion of underweight children age under five years to 20%;
- To decrease the proportion of stunted children under five years to 34%;

934. For the 72 poor districts, the targets for 2010 include:

- 100 per cent of the population will have access to Provincial Health centres,
- 75 per cent will have access to clean water, and
- 55 per cent to will have access safe sanitation.<sup>42</sup>

935. Public health officials in Bolikhamxay and Vientiane Provinces provided information on the 10 top causes of illness in their provinces for 2005 to 2006, shown in Table 107. Similar information was not available at the time of the field survey from Xieng Khouang Province.

Rank	Bolikhamxay Province	Vientiane Province
1	Dengue Fever	Influenza
2	Diarrhoea	Diarrhoea
3	Dysentery	Respiratory infection (Pneumonia and Bronchitis)
4	Malaria	Malaria
5	Food Poisoning	Dengue Fever
6	Meningitis	Stomach-ache
7	Typhoid	Dysentery
8	Hepatitis B	Typhoid
9	Measles	Road Accidents
10	Neonatal Tetanus	Skin Diseases

Table 107: Top Ten Diseases and Causes of Illness in 2005-2006

936. As can be seen from these lists, there is considerable overlap in the top ranking diseases in the two provinces, in particular diseases spread by mosquitoes (dengue fever and malaria) and diseases of the digestive system (diarrhoea, dysentery, food poisoning and stomach ache).

937. The public health infrastructure and personnel of the three provinces of the project area are presented in Table 108 below. While these facilities can be reached from 2UR (to Xieng Khouang) on an all-weather-road in two hours by car and it is possible from Z3 and Z5 to reach Pakxan in 2 hours by boat, the current villages of 2LR during rainy season might not reach these facilities for a considerable amount of days during the year due to bad road

<sup>42</sup> United National, Health sector strategy Lao PDR, 2008.

<http://webapps01.un.org/nvp/frontend!policy.action?id=502&tab=analysis>

conditions. Data on medical personnel differed between Xieng Khouang and the two other provinces.

	Units	Bolikhamxay	Vientiane	Xieng Khouang
1. Provincial Hospitals	Sites	1	1	1
Capacity	Beds	80	90	75
2. District Hospitals	Sites	6	12	7
Capacity	Beds	70	120	85
3. Health Centres	Sites	5	44	48
Cs	Beds	80	88	113
Villages in revolving drug funds program	%	78	25	
4. Village Health Kits	Kits			381
5. Physicians, top level	People			18
6. Physicians, high level	People			49
7. Medical workers, medium level	People			138
8. Medical workers, elementary level	People			249
Total Health Care Workers	People	368	768	
Provincial Hospitals	People	77	89	
District Hospitals	People	41	562	
Health Centres	People	11	117	

Table 108: Public Health Facilities and Public Health Personnel in the NNP1 Project Area (Source: Report NCC, 2008)

938. The public health situation in the project area is similar to that found elsewhere in rural communities of Bolikhamxay, Vientiane, Xieng Khouang, and Xaysomboune Provinces, as well as in other provinces of the Lao PDR with similar levels of development. There is 1 health centre in Zone 2LR that covers 4 villages and 1 health centre in Zone 4 (downstream area) covering 7 villages. These are poorly stocked and the health care facilities and services remain inadequate. Most villages have a designated village health volunteer, but the volunteer seldom has the necessary medicine and has only limited technical knowledge or skills.
939. According to the records of local health centres, the main health problems are Malaria, Diarrhoea, Dysentery, Acute respiratory disease, Infections, and Influenza. Basic hygienic practices of most villagers are considered low. Most of the households do not have a closed latrine and village drainage may be poor, particularly during the rainy season. Livestock are allowed in some communities to roam freely and may contaminate domestic water sources. Overall hygiene and sanitation in the communities requires considerable improvement, both in structures as well as in social knowledge and awareness.
940. Contributing factors to these health problems could be a lack of support by district health offices to villages such as the provision of regular courses dealing with health education, including the prevention of communicable diseases, infectious diseases, hygiene, nutrition,

immunization, as well as raising awareness on public health problems such as tuberculosis and HIV/AIDS. This of course is directly related to the limited funding and personnel available to the health offices.

### 14.1.7 Summary of Project-Independent Livelihood Changes

941. Over the last decades, ways of life changed considerably, as have the social and economic conditions in Lao PDR, as the country chose to integrate stronger into international structures. Villages have to adjust to these new conditions as well as to the adapted national social and economic development policies and programs.
942. Environmental concerns also necessitate major changes in traditional agricultural practices. As the population increases and government policies and widespread award of concessions have restricted land availability, current agricultural land allocation is no longer sufficient to support shifting cultivation. The cycle between crops has been reduced, from seven down to four or even three years. With only two years left in fallow, the land in the reduced cycle does not have enough time to recover its fertility. The growing population of Lao PDR combined with the need to protect the remaining natural forests and wildlife makes it no longer possible to continue traditional practice of moving to clear new lands when existing fields lose fertility, as traditionally practiced by a series of upland ethnic groups.
943. GoL policy of consolidating smaller villages into larger ones to provide easier access to transportation, communications, and other physical and social services, and of moving communities from the more environmentally vulnerable highlands to lower elevations near roads and other facilities, is also changing the face of the Lao countryside. The provision of infrastructure, of roads and electricity, health and educational services, is consequently changing the nature of village life. This village consolidation program has been implemented in the project area, with the smaller village of Nakang (a village originally in Zone 2UR) being moved to the larger community of Phonhom some 10 kilometres away, as well as further village concentration in the upstream area.

## 14.2 Summary of Land Acquisition and Resettlement Asset Impacts

### 14.2.1 Overview

944. The expected losses in each zone of the Project are different, and they depend on the level of inundation and water level during different seasons of the year. These losses are summarized by zone in Table 109.

Type of losses	Unit	2UR	2LR	Zone 3	Zone 5	T.-line	Access Road
1. Loss of agriculture land	√	√	√	√	√	√	√
2. Loss of residential, commercial, industrial or institutional land	√	√	√	√	-	√	-

3. Loss of trade/livelihood/occupation or business incomes	-	-	√	√	-	-	-
4. Loss of standing crops	√	√	√	√	√	√	√
5. Loss of perennial crops	√	√	√	√	√	√	√
6. Loss of public infrastructure	-	-	√	-	-	-	-

Table 109: Overview of Project Impacts on Properties

945. As indicated in the table, the impacts in the various zones will be:

- Zone 2UR: located at the upper-end of the reservoir, the inundation will affect only a portion of the agricultural and residential lands; only some will be permanently submerged. Most of the affected lands will be submerged only seasonally, when the water level in the reservoir reaches its maximum level. For most of the year, those lands will remain above water.
- Zone 2LR: the present settlements are about 50-70 meters below the 320 m MSL of the reservoir, so all 4 villages have to be resettled to a new site.
- Zone 3: this is the construction area, which includes the two dams, the powerhouses and other facilities in the vicinity. It also includes the area that will be inundated by the re-regulating reservoir between the main dam and the re-regulating dam. All the main lands of one sub-village will be inundated, and the people will need to be resettled. To avoid a long period of impact from constructions, Hatsaykham will be resettled already in early 2015.
- Zone 5: A thorough land survey and participatory land use planning will be needed to be conducted before allocation to the resettled households can take place. Basic infrastructure will be shared among the existing households and the resettled households. Most of the agricultural land given to the resettled households will be from areas where the land has not yet been used.
- Transmission line: the area along the right of way of the transmission line route will be temporarily and permanently affected. Especially, those areas required for the feet of the transmission towers and restricted access to cultivation during stringing.
- Access road: the standing crops and perennial plants and trees along the right of ways will be affected. However, the Project plans to renovate existing roads, so there will be minimal impact on the communities.

### 14.2.2 Loss of Land

946. The Project needs to acquire the land for each of its components: for the main dam and the re-regulating dam, project offices, the area covered by reservoir and re-regulation pond, and lands for the transmission lines and access roads. Land will also be needed for temporary use during construction, such as for the workers' camp and storage areas. This study is mostly concerned with the privately owned or privately used lands or the lands used by the communities.

947. Table 110 presents the total area of land expected to be used by the Project or covered by the reservoirs that is owned or used by the local residents and communities according to the Field Survey 2011 and the Field Survey 2007/8 (for minor impacted areas).

Type of losses	Unit	2UR	2LR	Zone 3	Zone 5	T.-line	Access road
<i>1.1 Agricultural land</i>	ha	309.30*	1,260.07	133.04	20+	0.58	12.54
<i>1.2 Residential land</i>	ha	1.87	44.11	5.48	-	-	9.38
<i>1.3 Forest land</i>	ha	-	4,494.0	-	-	2.17	53.39
<i>1.4 Other land use</i>	ha	30.0	1,709.0	68.90	-	0.62	15.63
<b>Total</b>		<b>341.17</b>	<b>7507.18</b>	<b>207.42</b>	<b>20+</b>	<b>3.37</b>	<b>90.94</b>

Table 110: Summary of Loss of Land (Source: Field Survey 2011 and Field Survey 2007/8)

\*Includes land that will be lost only seasonally, when the reservoir is at maximum level

+During these surveys, land has been considered as government/not privately owned land and therefore not impacted. Data comes from a survey 2013 assessing the maximum impact; effective impact will be much lower.

### 14.2.3 Loss of Structures

948. Houses and structures in the inundated area of the reservoir and in the construction area will be affected by the Project. There will be 15 households of Zone 2UR whose houses will need to be relocated within their community, and 378 households of Zone 2LR and 33 households of Zone 3 who will need to be resettled.
949. The procedure of compensation for houses and structures are outlined in the REDP. Beside the houses, other structures such as granaries and silos or corrals also have to be compensated.

Type of losses	Unit	Zone 2UR	Zone 2LR	Zone 3	Zone 5	T.-line	Access road
1. House	Unit	15	384	33	-	-	42 max. (effectively all avoided)
2. Granary	Unit	12	149	11	-	-	2
3. Toilet	Unit	12	*	*	-	-	1
4. Field hut	Unit	83	-	-	-	-	5
5. Animal Pen	Unit	12	247	12	-	-	6
6. Fence	Meters	10,990	*	*	-	-	7,633
7. Water well	Unit	1	-	-	-	-	-

Table 111: Summary of Impact on Houses and Structures (Source: Field Survey 2011; AR 2013)

\* This data is currently missing and will be registered during the Confirmation Survey to be conducted after Cut-Off-Date and together with all other assets compensated accordingly.

### 14.2.4 Loss of Trees

950. The privately owned trees affected by the Project are mainly in the reservoir area and construction area. Some are along the right of way of the transmission line. For the loss of trees along the transmission line and the access road, the actual numbers will be determined after the final alignments have been decided. As mentioned in the introduction, just the Confirmation Survey after Cut-Off-Date will provide the determining numbers for compensation in all zones and the Project has to adjust budgets accordingly.

Type of losses	Unit	Zone 2UR	Zone 2LR	Zone 3	Zone 5	T.-line	Access road
1.1 Fruit Trees	#	800	33,478	435	-	-	177
1.2 Economical Trees	#	355	44,519	2,521	-	-	17,928
1.3 Rubber	#	-	111,000	4,494.0	-	-	1,802
1.4 Bamboo	#	48	-	-	-	-	-
<b>Total</b>		<b>341.17</b>	<b>1,335.7</b>	<b>113,956</b>	<b>-</b>	<b>-</b>	<b>19,907</b>

Table 112: Impact on Fruit Trees and Economical Trees (Source: Field Survey 2011; AR 2013)

### 14.2.5 Loss of Public Infrastructure

951. The inundation by the reservoir will lead to loss of public infrastructure in the 4 communities of Sub-Zone 2LR. As PAPs from 2UR will not resettle, they will have continuingly access to the existing infrastructure. The Project will, however, support the repair and upgrade of this infrastructure as outlined below.

Type of losses	Unit	Zone 2UR	Zone 2LR	Zone 3	Zone 5	T.-line	Access road
Community structure							
• School	Unit	-	4	1	-	-	-
• Health centre	Unit	-	1	-	-	-	-

Table 113: List of Public Infrastructure to be Affected by the Project (Field Survey 2011)

## 14.3 Social Impacts on Livelihood Activities

952. Compensation payments and livelihood programs allow the development of alternative livelihoods. Above all young people and their mothers have expressed their support for such developments, being already integrated into national and regional cultural networks via television, internet, and mobile phones. Access roads allow easier transport and it is expected that the transition to a more market-oriented economy will occur even faster than it has thus far. Crops will be grown in part for commercial sale. Other activities will expand (such as handicrafts) or be introduced (new livelihood opportunities) that depend on a more market-oriented economy. Electrification and access to improved public infrastructure will reduce the risks related to subsistence farming and allow an increase of productivity and safety. This should not hide alternative risks of more market-oriented livelihood activities:

any decades-long experience as with agricultural production; the need of understanding market processes and structures; and the volatility of market economies which villagers cannot influence.

### **14.3.1 Agriculture**

953. Rice is the most common crop in the villages of the PIZ. Other crops include maize, cassava, and chilli. Most of the agriculture crops are for household consumption, and the surplus is sold to nearby markets or to merchants coming into the villages. This varies between the different villages. Above all the villages in the lower reservoir area lack easy access to markets, reducing market-related income possibilities. Rice sufficiency is therefore not currently present for all households, again with a higher incidence of rice insufficiency in the villages to be resettled. Project impact on agriculture encompasses several aspects: LAR will reduce current agricultural land, while land development and soil improvement will increase productive agricultural land in the upper reservoir area and in the designated resettlement site. Productivity of land will be increased via the development of irrigation systems as well as improved agricultural techniques. Improved access to markets will provide higher profits from cash crops and increase its share on agricultural production. The Project will start livelihood activities from current production patterns and develop improvements together with the PAPs via trainings, trials, and coaching to enhance ownership and consequently sustainability.

### **14.3.2 Livestock and Poultry**

954. Animal raising is common and in the Hmong communities additionally a status symbol. Nonetheless, numbers of large livestock vary considerably not just between villages, but between households. Livestock raising is a preferred livelihood option for many households throughout the project zones. Similar to crop cultivation improvements, the Project will work together with PAPs on an improvement of livestock raising. Consequently, an increase of livestock is expected; requiring an increasing amount of fodder. The Project will therefore develop pasture in the designated resettlement site and potentially in 2UR; it will also look at possibilities of value chains linking to crop cultivation. Furthermore, intensified livestock increases the risk of diseases; the Project will support veterinary services including an initial vaccination program for large livestock.

### **14.3.3 Forest Utilization**

955. Households rely on collection of non-timber forest products (NTFPs) for daily food, household utilization, and for cash income above all in the lower reservoir area. However, over-usage throughout past years has reduced income possibilities. In the broader Project Impact Zone, a key aspect is the watershed management area. Impacts from the establishment of watershed management areas will on the one hand benefit from the protection of the watershed and related resources as part of a watershed management program, but on the other hand face constraints in traditional socioeconomic activities, for



example swidden cultivation. Meanwhile, collection of NTFPs will become more sustainable, with the forests protected. This requires an adaptation of the livelihood activities of people living in the watershed management area.

956. Logging is increasing in the area independently from the Project; nonetheless, the Project's name gets falsely used by third parties as an excuse for illegal logging activities. The Project will support public authorities in measures against illegal logging and the Project's biomass clearance will be done in a transparent way.
957. In the designated resettlement site, forest management might be necessary to resolve resource conflicts between resettlers and host communities, even though the Nam Ngiep marks a clear boundary on entitlements to forest utilization between resettlers on the right-bank river side and host communities on the left-bank river side.

#### **14.3.4 Fisheries**

958. None of the households in the project area fish as the primary activity for household income, however all households mention fish as an addition to their diet. Some households, above all in the upper reservoir area, are going on fishing trips and sell their catch to local restaurants. Impoundment of the reservoir will lead to an adaptation process for fish populations. The reservoir itself can become a rich source of fisheries, if managed properly. New opportunities for fish populations and fish catch will above all develop in the impounded plain at the upper edge of the reservoir. This will attract outsiders and accordingly, as with the watershed management area, fisheries have to be managed as well. Changing from river to reservoir fishing requires furthermore different fishing techniques.
959. A fisheries co-management program will be necessary for the river downstream of the re-regulation dam to regulate resource share between host communities and resettlers and for the villages in 2UR. In the whole catchment area, a fish-catch monitoring program will monitor any unexpected impacts on fisheries from this Project; it will also help differentiate eventual impacts from hydropower projects upstream.

#### **14.3.5 Other Livelihood Activities**

960. Increased access to urban areas, improvement of educational levels, and skill trainings will lead to new business and employment opportunities for PAPs. Project implementation itself will provide further opportunities for skilled PAPs along community activities and later on operation and maintenance; for labourers at the construction site; and for small-scale supply and service businesses at the construction site.

#### **14.3.6 Tenure Security**

961. In Laos, all land officially belongs to the state, which has the right to compulsory acquire or dispose of land as it sees fit. The Constitution (Article 5) also confirms the State's responsibility to protect the legal interests of land use rights holders. The amended Land Law specifies that a Land Title is now the only legal document "considered as main evidence

for permanent land use rights" (Article 49). This means that until eligible land is titled, all other documents may not provide permanent tenure security. In the past ten years or so, individual land and property tenure rights have been recognised by the state, and land title for housing and agricultural land is now accessible. However, land titling is typically confined to urban, semi-urban, and accessible villages, and the more remote villages do not have individual land titles.

962. Community land is an even more difficult issue in Laos, and while rural villages usually have substantial community lands including grazing, forestry and public use (e.g. schools, meeting halls, etc.), forest and land legislation are quite generalised and do not provide categories which reflect ethnic groups' indigenous knowledge of different land types, nor soil and environmental differences, nor local land management systems. "Communal" land, over which a village community may have a customary or collective claim, is not recognised in law, and all land not registered to an individual or organisation is classified as belonging to the state<sup>43</sup>.
963. Tenure security in the Project varies between urban and rural areas as well as between different ethnic groups. In general, tenure security is just guaranteed at village level due to social pressure, but weak on a higher level, as many households cannot provide legal documents for their lands (including missing tax receipts due to no tax registration). The Project will address this issue via four measures:
- i. The outlined meaningful consultations with the PAPs will assure that people are integrated into the project development regardless of their legal and institutional status
  - ii. Customary land claims will be accepted even if no formal land tenure can be presented by households
  - iii. The Project will support and ensure the provision of land titles for all replacement land in 2UR and the designated resettlement site, including community properties by working closely together with PAPs and GoL, with the latter providing land tenure documents.
  - iv. For Hmong households where the male household has more than one wife, there will be an option for separate homes to be registered in the names of each wife.
964. This will directly increase tenure security for PAPs.
965. Furthermore, these large-scale activities will increase the capacity for GoL staff, leading to a positive impact on tenure security in the districts.
966. The location of the designated resettlement site close to the dam site will prevent future involuntary resettlement, as the development of a second project in this area is unlikely; also increasing tenure security.

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<sup>43</sup> Mann & Luanghot, op cit

### **14.3.7 Income**

967. The total annual income (cash and imputed) varies strongly between the different project villages; again with higher incomes for the villages downstream, but with increasing opportunities for the villages upstream and the upper reservoir area due to their location at a new interregional road. Villagers in the lower reservoir area report the lowest income, with, however, again with differentiations between households inside the village. With the implementation of livelihood programs, the Project will have a positive impact, increasing PAPs' income levels. The Project commits to a doubling of incomes for all communities impacted by LAR as well as to bring poor PAPs at least above the national poverty line. Cash income will increase its share in total income due to an increasing important of cash crops, livestock raising, and employment as outlined above.

### **14.3.8 Expenditures**

968. Parallel to an increase of incomes, expenditures will increase as well. Family financial trainings will prevent large-scale consumption of cash compensation values and highlight the need for savings and investments. Increase of cash income and services available will also change expenditure patterns, increasing purchases of market products and services, leading to new local business opportunities.

## ***14.4 Social Impacts on Social Structures***

### **14.4.1 Population profiles and influx of outsiders**

969. The Project is expected to lead to an increase of population in the project zones due to better income opportunities and health and education services, reducing the trend of out-migration to urban areas and attract villagers moving in from other areas. The Project's cut-off-date will reduce the risk of short-term influx of squatters trying to gain from Project opportunities. The self-resettlement option might reduce the number of PAPs moving to the designated resettlement site.
970. During the construction period, a strong population increase is expected in the construction site, encompassing workers as well as camp-followers. In-migration into the project area will change the demographic balance between the indigenous people on the one hand and lowland peoples who are often more educated and have more resources and knowledge. There are also risks that improved access to outsiders will increase possibilities of activities such as illegal mining, logging, trafficking and smuggling. The Project will mitigate these risks via its social management and mitigation program outlined in the SDP, including code of conducts, health check-ups, zoning for camp-followers, etc.
971. On the long run, tourism might enhance in the area; expected is above all an influx of people from urban areas close by, enjoying picnics at the dam site or on the reservoir during weekends and holidays, as can be seen for example at a reservoir close to Vientiane Capital.

### 14.4.2 Social Relations

972. Social relations in the project area encompass neighbourhood relations in the villages, administrative structures, and mass organizations; the clan-system has a strong influence on local, but as well national and international social relations of Hmong communities. Access to urban areas and telecommunication will alter these social relations and intensify them towards the national and international level. Resettlement of five communities to the resettlement site, close to two host communities, will form new social relations. Allocation of residential land plots will be conducted in consultations among PAPs to allow maintaining positive social relations between neighbours and relatives.

### 14.4.3 Social Disturbances

973. A social management and mitigation program will be implemented by the Project to avoid social disturbances due to influx of workers and camp followers. Hatsaykham will resettle early to reduce the period of impacts from the construction site. Family financial trainings and joint bank accounts between husband and wife will reduce the risk of misuse of cash compensation values for alcohol, tobacco or gambling. Cultural and health awareness programs should reduce the risk of social disturbances due to access to urban areas.

### 14.4.4 Local Authorities

974. The Project will within the framework of the GoL administrative system. It will thereby closely cooperate with local authorities during the implementation of its resettlement and livelihood programs. Increasing demands on local authorities due to the Project will be balanced by Project support. Day-to-day cooperation will increase the capacities of local authorities. Trainings will be conducted with local public health staff. The Project's scholarship program will allow recruitment of qualified, local civil servants, for example as teachers or health staff. Grievance institutions will be implemented or strengthened where already existing.

### 14.4.5 Health

975. Most villages potentially affected by NNP1 have health services within 2 hours of travelling. However, the four villages to be resettled from the lower reservoir area have just access to one village health centre, with the next district hospital difficult to access during the rainy season. The most common causes of illness are respiratory diseases, intestinal infections, and malaria.
976. Potential impacts of the Project are:
- Short-term, possible increase of some communicable diseases throughout communities living close to the project area and resettlement sites, such as Malaria, Dengue, Diarrhoea, and other endemic diseases, and a possible increase in STDs and HIV/AIDS with the influx of workers and camp followers influx to the Project's construction site.

- Possible decrease in the availability of food sources, resulting in inadequate nutrition (at least temporarily) for the local residents. This would be due to the requisition of land for the project activities. However, this is to be prevented by adequate compensation, which has to ensure that the residents who lose all or part of their lands will have at least the same if not better standards of living, including improved knowledge of nutrition, than before the Project.
977. The Project will mitigate risks and improve the overall health situation by implementing the Public Health Action Plan (see SDP), with provision of a village clinic in the resettlement site, repair of the health centre in Ban Piengta, training of public health officers, health awareness and immunization campaigns as well as monitoring of the development of community health status in the different villages, with a focus on resettlers; increasing the health situation of households.

#### **14.4.6 Education**

978. All villages have a primary school, but of variable qualities. Some teach up to Grade 2, while others have classes up to Grade 8. The number of teachers per student varies considerably and above all in the remote villages of the lower reservoir area, education facilities lack quality because of remoteness of villages. The numbers of people who have completed any formal education is still quite low, especially among more remote communities and particularly among girls. It is only those communities downstream from the proposed dam site, near roads and larger towns that have higher educational rates. Project impacts will be positive, with provision of improved educational facilities, in the resettlement site up to high school, a scholarship program, emphasis on girls' education, and an adult literacy program.

#### **14.4.7 Safety**

979. The Project will cooperate closely with public authorities to mitigate risks of decreased safety; implement cultural awareness campaigns; enforce strict regulations for Project workers; and constantly monitoring social developments around the dam site. This will mitigate theft risks, resulting on the one hand from an increase of population numbers in the resettlement site as well as the construction site and on the other hand from an increase of cash and movable assets in the communities. A traffic safety campaign as well as speed bumps in the villages should reduce the risk of traffic accidents along the upgraded access road.

#### **14.4.8 Youth**

980. The majority of people in the project zones are younger than 20 years. Several of the above outlined developments and impacts target specifically this young generation. Changes in livelihoods are an opportunity as well as a risk for young people, which the Project addressed with its livelihoods, awareness, and education programs. Urbanization might lead to changes of aspirations and role models. Employment opportunities for motivated and qualified young people will increase their economic status within families, which will

lead to changes in the overall social family structures, which will be addressed by specific awareness campaigns and the Project's constant community engagement.

## 14.5 Social Impacts on Access

### 14.5.1 Access to Public Infrastructure

981. The Project will repair or upgrade public infrastructure in the upper reservoir area, where it has no direct impact on existing infrastructure. Restricted access over the top edge of the reservoir to the other river side will be restored by the construction of two suspension bridges. In the resettlement site, new infrastructure will be built on national standards, improving access to infrastructure for PAPs from 2LR, Zone 3 and the host communities. Upgrade of the access road allows easier access to public infrastructure in the urban areas of Bolikhan and Pakxan.

### 14.5.2 Access to Information and Services

982. Increasing access to information and services is on-going, above all in 2UR and close to the dam site. Improved access to services around the construction site and the resettlement site will derive from the Project's broad livelihood programs. Resettlement of 2LR will strongly improve access to electricity and telecommunication as well as to markets, health, and education.

### 14.5.3 Access to Urban Areas

983. As mentioned above, Project activities will strongly improve access to urban areas: by resettlement of communities to places closer to urban areas, but also by improving public infrastructure like bus stops and roads, reducing travel times for PAPs from 2LR, Zone 3, and Zone 5 to urban areas from several hours to less than an hour.

## 14.6 Summary of Socioeconomic Impacts

Impact Categories	Impact	Key Measures	Described in...
Crop Cultivation	<ul style="list-style-type: none"> <li>• Adaptation of cultivation to geographic and soil condition of resettlement site for 2LR</li> <li>• Adaptation to irrigated paddy</li> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Cash crops more important due to market access</li> <li>• Usage of Drawdown-Zone for 2UR</li> <li>• Potential of irrigation and land re-allocation in 2UR</li> </ul>	Appropriate, community-driven LIRP Program including trails and trainings based on existing agricultural techniques	LIRP/REDP

Impact Categories	Impact	Key Measures	Described in...
	<ul style="list-style-type: none"> <li>• Limitation on use of chemical inputs in the Watershed</li> </ul>		
Livestock	<ul style="list-style-type: none"> <li>• Livestock a preferential livelihood option</li> <li>• New pasture development</li> <li>• Livelihood programs with trials on type of livestock and techniques of raising and breeding</li> <li>• Vaccination program for livestock</li> <li>• Transport of livestock for 2LR</li> </ul>		LIRP/REDP
Forest Utilization	<ul style="list-style-type: none"> <li>• New forestry areas / loss of access for resettlers</li> <li>• Limitation/management on forest use on left-bank side of Nam Ngiep</li> <li>• Limitation/management of existing plantations in the watershed</li> <li>• Risk of illegal logging</li> <li>• Sustainable use of Watershed Management Area</li> </ul>	<p>Appropriate, community-driven LIRP Program</p> <p>WMP</p>	<p>LIRP/REDP</p> <p>EMP</p>
Fisheries	<ul style="list-style-type: none"> <li>• Potential of increased fish populations in the flooded plain at the upper edge of the reservoir;</li> <li>• Access to reservoir</li> <li>• Risk of opening of the reservoir for outsiders</li> <li>• Change from river to reservoir fishing</li> <li>• Sharing of fish resources with host communities necessary</li> </ul>	<p>Appropriate, community-driven LIRP Program</p>	LIRP/REDP
Other Livelihood Activities including Business and Employment	<ul style="list-style-type: none"> <li>• Increasing importance of business and employment</li> <li>• Livelihood programs incl. skill development, microfinance, and marketing support</li> <li>• Project employment opportunities</li> </ul>	<p>Appropriate, community-driven LIRP Program</p> <p>Education Program</p> <p>Employment of PAPs</p>	<p>LIRP/REDP</p> <p>Education/SDP</p> <p>LMP/SDP</p>
Tenure Security	<ul style="list-style-type: none"> <li>• Provision of land titles for replacement land</li> <li>• Provision of land titles for community land</li> <li>• Lower risk of future involuntary resettlement as resettlement site close to dam site</li> </ul>	<p>Ensuring land titles for replacement land</p>	<p>Entitlement Policy / REDP</p>
Expenditure patterns	<ul style="list-style-type: none"> <li>• Change of livelihoods with increased cash income lead to more market-related expenditures</li> <li>• Integration into Market economy</li> <li>• Cash compensation values used for</li> </ul>	<p>Appropriate, community-driven LIRP Program</p> <p>Awareness Programs</p>	<p>LIRP/REDP</p> <p>Community Development / SDP</p>

Impact Categories	Impact	Key Measures	Described in...
	investment and consumption		
Population profile	<ul style="list-style-type: none"> <li>Population growth through reduction of out-migration and in-migration to due new opportunities</li> <li>Population reduction due to self-resettlement option</li> </ul>	Appropriate, community-driven LIRP Program	LIRP/REDP
Influx of Outsiders, including tourism	<ul style="list-style-type: none"> <li>Project employees will live in the area</li> <li>In-migration of workers and camp-followers</li> <li>Tourists might explore the dam site and reservoir, which might be used as a picnic-site (see Nam Ngum 1)</li> </ul>	Social Management and Mitigation Program to regulate influx together with communities and GoL	SDP
Social Relations	<ul style="list-style-type: none"> <li>Stronger integration of 5 villages</li> <li>Market economy strengthens younger generation</li> <li>Market economy changes social strata and necessary skills</li> <li>Access to urban areas and stronger integration into national community changes social relations</li> </ul>	Consultations among PAPs  Focus Group Discussions  Awareness trainings	EDP/REDP  Community Development / SDP
Social Disturbances	<ul style="list-style-type: none"> <li>Construction site and camp followers risk social disturbance</li> <li>Closer access to urban area might lead to social disturbances</li> <li>Cash compensation risky for gamblers and increased expenditures on alcohol, tobacco &amp; leisure activities</li> </ul>	Social Management and Mitigation Program  Awareness trainings	EDP/REDP PHAP/SDP Community Development / SDP
Local authorities	<ul style="list-style-type: none"> <li>Provision of land titles for replacement land</li> <li>Provision of land titles for community land</li> <li>Lower risk of future involuntary resettlement as resettlement site close to dam site</li> </ul>	Scholarships, Trainings, and Coordination with GoL via the RMU, DCC, and VCC	PHAP/SDP Community Development / SDP
Health including Nutrition	<ul style="list-style-type: none"> <li>Adaptation of cultivation to geographic and soil condition of resettlement site for 2LR</li> <li>Adaptation to irrigated paddy</li> <li>Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>Cash crops more important due to market access</li> <li>Usage of Drawdown-Zone for 2UR</li> <li>Potential of irrigation and land re-allocation in 2UR</li> </ul>	Health Program and health monitoring	PHAP/SDP



Impact Categories	Impact	Key Measures	Described in...
	<ul style="list-style-type: none"> <li>Limitation on use of chemical inputs in the Watershed</li> </ul>		
Education	<ul style="list-style-type: none"> <li>Education Program including scholarships</li> <li>Provision of new school facilities and equipment</li> </ul>	Infrastructure Development Education Program	REDP Community Development / SDP
Safety	<ul style="list-style-type: none"> <li>Risk of theft increases with Market economy and urbanization</li> </ul>	Awareness Trainings Social Management and Mitigation Program	LMP / SDP Community Development / SDP
Access to Public Infrastructure	<ul style="list-style-type: none"> <li>New public infrastructure including school, health centre, village hall, bus station, market in the resettlement site</li> </ul>	Construction of new infrastructure in resettlement site  Repair of infrastructure and upgrade to national standards in 2UR and Z5	REDP
Access to Information and Services	<ul style="list-style-type: none"> <li>Strong improvement of access to information and services in the resettlement site</li> <li>Increasing communication via technical means</li> </ul>	Provision of infrastructure in Resettlement Site Awareness trainings	REDP Community Development / SDP
Access to Urban Areas	<ul style="list-style-type: none"> <li>Reduction of travel time to next urban area from several hours to 30-45 minutes</li> <li>All-weather and all-season access to urban areas</li> <li>Regular bus services</li> </ul>		
Youth	<ul style="list-style-type: none"> <li>Livelihood opportunities via livelihood program</li> <li>Cultural and health awareness</li> <li>Education Program</li> <li>Urbanization might lead to changes of aspirations and role models</li> <li>Strengthened role within the families</li> </ul>	Focus-Group Discussions Awareness Trainings  Appropriate, community-driven LIRP Program Scholarships	REDP Community Development / SDP

Table 114: Summary of Socioeconomic Impacts and Mitigation Measures

984. Additionally to measures addressing these expected impacts, the Project implements a broad range of monitoring activities to identify unforeseen impacts and develop programs according to the adaptive management principle followed by NNP1. A list of monitoring activities can be found in Chapter 19. It should be once more noted that the Project's mitigation measures against adverse impacts are limited by scope.

## CHAPTER 15 - Transitional Impacts of Constructions

### 15.1 Introduction

985. Construction of the Project will mainly take place at the dam site in Zone 3, and influencing areas close by: Zone 5 and the resettlement site. This does not just encompass the immediate construction, but includes workers camps, quarries, disposal areas, etc. Additional construction work will be going on along the access road and along the planned transmission line. Details on mitigation measures can be found in the REDP and SDP, above all in the relevant Labour Management Plan (LMP) and the Public Health Action Plan (PHAP) in the SDP. The latter also includes the social management and mitigation plan, focusing on camp follower impacts.

#### 15.1.1 Construction activities

986. The following construction activities will thereby be carried out:

- Construction of access road
- Establish the worker camps
- Handling construction material, fuel and other hazardous material transportation
- Storage of hazardous substances, i.e. flammable fuel (diesel, LPG)
- Creating diversion canals
- Building of the main dam and the re-regulating dam
- Building of the power house

### 15.2 Location of the Construction Sites and Nearby Communities

987. The basic specifications of the main features and their locations are shown in Chapter 2.

#### 15.2.1 The Administration Office of the Main Contractor

988. An administration office of the main contractor and an owners' office are to be located in the construction area. Management staff of both the main contractor and the owner will be stationed within the construction areas. Heavy equipment such as bulldozers, dump trucks, excavator, truck cranes, and drilling machines, would be brought in and temporary facilities such as the crushing plant, batching plant and base camp would be constructed.

#### 15.2.2 Labour and Labour Camp

989. The amount of labour required is estimated at 1,000 workers/day in the first 2 years - 1,800 workers/day in the third and fourth years and 1,000 workers/day for the remaining construction period.

990. The developer has set the labour/worker camp to be located in an area of 12 ha which is about 3-4 km southward from the construction site of the main dam, quarry site and stockpile/plant yard. In order to reduce potential conflicts or social disturbance of the

workers' camp on the nearby communities, the camp will be located as far and separate from the nearby villages as possible.

991. The settlement generally requires basic living needs, among them housing, amenities including water supply, sanitation, health services, and fuel, to be provided by the developer and/or contractor at the camp site. Because of the rather dense settlement, there is increased risk of diseases and hazards, which require putting in place preventive measures and procedures and will also require specific health, safety and social responsibility clauses in sub-contractual contracts as demanded in the CA, Annex C.

### **15.2.3 The Communities in the Vicinity of the Construction Area**

992. There are three communities located near the construction area: Ban Hatsaykham, Ban Hat Gniun and Ban Thahuea. The new resettlement area is also proximate to the re-regulating dam and reservoir. All three of the existing communities are situated on the left bank of Nam Ngiep River or, in the case of Ban Thahuea, along a tributary that flows into the left side of the river. The new resettlement area for the villages of Zone 2LR and also Ban Hatsaykham is located on the right bank of the river.
993. Ban Hatsaykham is located between the sites for the main dam and the re-regulating dam (1 kilometre downstream from the main dam and 1.3 kilometres upstream from the re-regulating dam). The reservoir of the re-regulating dam will inundate Ban Hatsaykham. The entire village will be resettled to the new resettlement area south of the re-regulating dam early 2015.
994. The other two villages, Ban Hat Gniun and Ban Thahuea, are located 3.2 kilometres and 6 kilometres downstream, respectively, of the re-regulating dam. These two villages will not require any resettlement, and the people in the communities will be able to continue their daily lives as usual. However, the main access road from Pakxan will pass through these two villages and other construction activities might also cause some impacts on these communities. The main adverse impacts of the access road passing through these communities are an increase in traffic, including large loads, with associated dust and noise, and the possible loss of use of lands in the right of way (see previous chapter). The improved road will provide considerable benefits to these communities as well, with greater access to markets and social services. A more detailed discussion of the impacts of the access road is presented in 12 of this report and in the IEE of the access roads in the main ESIA report.

## ***15.3 Social Impact and Risks Assessment***

### **15.3.1 Social Conditions in the Campsite**

995. It is estimated that there would be about 1,000 to 1,800 workers/day, depending on the stage during construction. The developer has set the worker campsite to be located on 12 ha about 3-4 km south of the construction site of the main dam, quarry site and stock yard, around the

current location of Ban Hatsaykham, which again is a similar amount of km north of Hat Gniun. The worker campsite will require basic needs for living – housing, amenities including water supply, sanitation, health services, fuel, etc. – to be provided at the camp site.

996. There will be people from various backgrounds and from many different places. Diseases and other hazards could arise because of the dense settlement. Preventive measures have to be taken and preventative procedures put in place. Conflicts might also arise, especially when the workers are under the influence of alcohol after work. Conflicts because of cultural differences, between workers of different cultural backgrounds or between workers from outside the region and local residents, might also occur. Measures have to be taken to prevent such conflicts. Camp followers and sex workers are likely to follow to the site, thereby increasing the population as well as elevating health risks. According measures of the respective social management and mitigation program are described in the SDP.

### **15.3.2 Socio-economic changes upon the development in the area**

997. Because they are located closest to the dam and power generation sites, it is certain that the lives of the people in the three villages will change because of the Project. Ban Hatsaykham will have to resettle. The Project will introduce a new all-weather access road. Power lines and electricity, improved water supply, improved education facilities and health facilities provided under the Project will all affect the people of these communities. Given their proximity to construction, (1km across the river from Houaysoup; 4km from Hat Gniun; 8km from Thahuea) a number of people from the villages will be able to find work in many of the semi-skilled positions, if a program of skill training is introduced in time, contractors assigned, and according priority lists for PAPs prepared. Other skill training programs and livelihood restoration or improvement programs will be introduced, and these will improve the socio-economic conditions of the people in the villages.
998. With the influx of so many workers and then later with the continued presence of the operations staff, a number of services and commercial establishments will come into the area, among them groceries, restaurants (from noodle stalls to more permanent seated facilities), and entertainment places. The influx of workers and introduction of these services and establishments will bring more money and with it more opportunities. Villagers could be among those who set up some of the new businesses or adapt their existing businesses (such as the small groceries, food and services provision) to the new conditions.

### **15.3.3 Impacts from Workers' Behaviour**

999. Generally, work camps do not include only the workers but also the families of some of the workers. Even if the project owner or contractor establishes regulations that family members are not allowed, there will still be many non-working family members in the camp, because it is the custom and practice of construction workers in this region. Therefore, the number of people staying in the workers' camp will be assumed to be much more than just the number of workers, and sufficient facilities provided for all, including the ability to address health

and sanitation issues that may arise.

1000. With so many people coming into the area, many from other parts of Lao PDR, others likely from abroad, and it would be easy for conflicts to arise between different groups. The large number of people in the camp, staying for only a short time in the area, also provides opportunities for thieves to mix among the workers and to steal from those in the camp or to go out from the camp and steal from nearby residents.
1001. Measures need to be taken, firm rules established and enforced, and security provided to assure safety of life and property in the camp and the nearby communities, and to prevent conflicts among those in the camp and between those at the camp and nearby villages. These are described in the SDP.
1002. As mentioned above, the camp will be located so as to reduce potential conflicts or social disturbance of the workers' camp on the nearby communities. Because the access road runs through Hat Gniun and Thahuea, it will not be possible to limit accessibility to these communities. It will be necessary to conduct timely and regular public consultations among the affected people, the workers, the contractors, local GOL authorities and developers concerning the safety measures and rules, and to find out if any problems are emerging so they can be solved before becoming more serious. Local communities will need to be made aware of the grievance mechanisms to lodge a complaint which they may have on issues related to the Project workforce.

#### **15.3.4 Health issues**

1003. The influx of workers and followers into the area raises concerns regarding public health of both the workers and the local residents. Facilities and services arranged for the workers and their followers – housing, latrines, first aid or health units, water supply, waste disposal facilities – will be sufficient and well distributed so they are easily accessible. Moreover, assuming there will be around 1,800 workers, they alone will produce at least 1.5 tons of solid waste<sup>44</sup> and about 90,000 litres of wastewater<sup>45</sup> each day. Their followers will produce more on top of this amount.
1004. With the influx of up to 1,800 workers and some of their families, the potential for widespread use of alcohol and illegal drugs, for prostitution, and the spread of AIDS and social transmitted disease, will increase considerably.
1005. Aside from these social health problems, there are also health hazards from construction, both to workers and those living in nearby communities, with potential hazards from dust, noise, solid waste, and waste from construction materials (such as oil, petrol, and other

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<sup>44</sup> The Vientiane Urban Development Administrative Authority estimated in 2002 about 0.8 kg/person/day of waste generated in Vientiane.

<sup>45</sup> Average wastewater 140 L/day/person were designed for the rural areas in Mahasarakham Province, Thailand. The average water use of rural Thai people was 45 liters/person/day. ([www.spo.moph.go.th/](http://www.spo.moph.go.th/)). Water use of Nam Ngum 2 Hydroelectric Power Project was designed at 50-60 L/person/day.

chemicals).

### 15.3.5 Gender and Youth Labour

1006. Development in the area could create jobs not just for men in the nearby villages and elsewhere in the vicinity, but also for women or youth. It will be kept in mind that the Labour Law of the GOL requires workers to be at least 14 years old. If women or youth are hired by the Project or work in the associated services and facilities, it will be necessary to assure that the laws are adhered to and that women and youth or children are not taken advantage of nor education compromised.
1007. Because of the influx of so many outsiders, there is also risk of increased illegal activities, including the risk of people coming in for women or children trafficking. People in the communities affected by the project, and especially in those closest to the construction site and workers' camp, will be made well aware of these risks during the public consultations, and informed of what actions they should take, and who is responsible for law enforcement, if such illegal activities are found to take place.
1008. Furthermore, cooperation procedures between GOL law enforcement agencies and the Project will be established to mitigate illegal behaviour and enforce public regulations and order.

### 15.3.6 Summary of Social Impacts of the Construction Area

Social Impacts	Positive/ Negative	Degree of Impact	Measures described in...
<i>1. Social</i>			
Ban Hatsaykham will be resettled to Houaysoup, across the river opposite the current village location with an access road connecting the resettlement site to Hat Gniun	Negative	Minor	EDP/REDP
<ul style="list-style-type: none"> <li>Potential conflict of culture, Lao Loum (Hat Gniun) and Hmong (Houaysoup)</li> <li>Constraint on resources; land, water, forest.</li> </ul> Influx of workers and followers		Moderate	PHAP/SDP
<i>2. Economics</i>			
<i>More economic activities in the area, because of the influx of workers and project staff.</i>			
<ul style="list-style-type: none"> <li>Opportunities for food stalls, restaurants, lodges or hotels, groceries, and other services.</li> </ul>	Positive	Moderate	LIRP/REDP

Social Impacts	Positive/ Negative	Degree of Impact	Measures described in...
<ul style="list-style-type: none"> <li>• Opportunities for jobs.</li> <li>• After the construction, the dam and the development could bring more tourists and traffic into the area.</li> <li>• Pressure on resources; land, forest, river, other water resources</li> </ul>	Positive	Moderate	LIRP/REDP
	Negative	Moderate	LIRP/REDP
<b>3. Health</b>			
Health issues related to worker camp and nearby villages			
<ul style="list-style-type: none"> <li>• Noise from the traffic, explosions (at the quarry site)</li> <li>• Dust from the transportation of the construction materials</li> <li>• Traffic accidents</li> <li>• Newly introduced diseases brought in by workers and other new comers</li> <li>• Spread of locally prevalent contagious diseases via inhalation, ingestion, and skin contact</li> <li>• Exposure of the locals to diseases that do not exist in their original habitat.</li> <li>• Diseases via vectors (i.e., mosquito, amoeba) such as outbreak of malaria in labour force.</li> <li>• Increase in sexually transmitted diseases among workers and to nearby communities</li> </ul>	Negative	Moderate	ESMMP-CP
	Negative	Moderate	ESMMP-CP
	Negative	Minor	PHAP/SDP
	Negative	Moderate	PHAP/SDP
<b>4. Culture</b>			
<ul style="list-style-type: none"> <li>• Cultural conflicts between the newcomers and the local residents</li> <li>• Cultural conflicts among the workers</li> </ul>	Negative	Minor	Cultural Awareness + LMP / SDP
<b>5. Women and youth</b>			
<ul style="list-style-type: none"> <li>• Job and training opportunities</li> <li>• Vulnerable to sexual exploitation</li> </ul>	Positive	Moderate	LMP/SDP
	Negative	Moderate	PHAP+LMP/SDP
<b>6. Requirement of resettlement</b>			
<ul style="list-style-type: none"> <li>• Population of Ban Hatsaykham</li> </ul>	Negative	Major	EDP/REDP

Table 115: Summary of Social Impacts of Construction

## CHAPTER 16 - Ethnicity

1009. This section deals with the overall issue of ethnicity in Lao PDR. More specific ethnic issues of each of the zones are covered in the descriptions of each zone and the consequent mitigation and development plans.

### *16.1 Conditions of Ethnic Groups*

#### **16.1.1 Ethnic Groups in Lao PDR**

1010. In the most recent national census (2005), the government of Laos recognizes 49 ethnic groups within 47 main ethnicities and 4 ethno-linguistic families<sup>46</sup>. The Lao Front for National Construction (LFNC) recently revised the list to include 49 ethnicities and increasing to over 160 ethnic groups, which speak a total of 82 distinct living languages.
1011. The term “ethnic minorities” is used by some to classify the non-Lao Tai ethnic groups, while the term “indigenous peoples” is not used by the Lao PDR as all ethnicities are considered indigenous to the country. For ADB Indigenous Peoples (IP) Policy purposes, the IP Policy refers to non-Lao Thai ethnic groups in the project area.<sup>47</sup>
1012. The 4 ethno-linguistic families in Lao PDR are categorized in: (i) Lao-Tai, (ii) Mon-Khmer, (iii) Hmong-Mien, and (iv) Sino-Tibetan.
1013. Lao-Tai groups reside primarily in the lowland regions of the country and for the most part cultivate paddy, practice Buddhism and are integrated into the national economy (referred to as Lowland Lao or Lao Loum). This group includes the Lao, the dominant group, and various related ethnic groups such as the Tai Dam, Tai Lüë, Phouan and other Tai-speaking groups, representing approximately 65% of the population.
1014. Mon-Khmer groups (often called Upland Lao or Lao Theung) live in the middle hills, practice swidden agriculture, are reliant on forest products and are relatively isolated from the dominant lowland culture, although there has been assimilation and integration for centuries. The Khmu, Makong, Kata, Loven and other smaller groups are the original inhabitants of mainland SE Asia and presently make up approximately 24% of the population.

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<sup>46</sup> These are Lao Tai (Tai K'dai); Mon-Khmer; Sino-Tibetan; and Hmong-Mien (also known as Hmong-Yao or Hmong-Iu Mien. Language

mapping has not taken place in Laos.

<sup>47</sup> From a summary of the 2005 Population Census, on the website of the Lao Department of Statistics [http://www.nsc.gov.la/Products/Populationcensus2005/PopulationCensus2005\\_chapter1.htm](http://www.nsc.gov.la/Products/Populationcensus2005/PopulationCensus2005_chapter1.htm), viewed on 21 September 2009.



1015. Hmong-Mien groups, including Hmong and Yao, are also often referred to as Lao Soung since they tend to inhabit highland areas in northern and central provinces and practice swidden agriculture. These groups are more recent arrivals from Southern China and form about 8% of the population.
1016. Sino-Tibetan groups (referred to as Highland Lao or Lao Soung) dwell for the most part in highland areas and practice swidden agriculture. These groups, Akha, Lahu, Lisu and Pounoy among others, are also arrivals from Southern China and form about 3% of the population and found mainly in the north of the country.
1017. The designations of "Lao Theung" or "Lao Soung", though still used in provinces and districts, are not used in this REDP as the elevation distribution of ethnic groups is no longer relevant in Lao PDR. This is primarily due to GoL's compulsory relocation policy to move ethnic minorities down from remote hilly areas and to resettle them near roads and water ways. The REDP instead refers to ethnic groups in the project area by their ethnic identity.

Ethno-Linguistic	Language Family	No. of Ethnic Groups	Proportion of Population
Tai Kadai	Lao Phoutai	8	66.20%
Austroasiatic	Mon Khmer	32	23.00%
Hmong - lu Mien	Hmong Yao	2	7.40%
Sino - Tibetan	Tibeto Burman	7	2.50%
Sino - Tibetan	Hor Han	1	0.20%

Table 116: Ethnicity of Population (Source: ADB, Lao PDR: Northern Region Sustainable Livelihoods Development Project, August 2006.)

### 16.1.2 Distribution of population in the project area by ethnicity

1018. The population distribution by ethnicity (Table 117) shows that the 3 main ethnic groups in the project area are Lao Loum, Hmong, and Khmu. As discussed in the section on Broad Community Support, the Hmong in the reservoir and construction area qualify as Indigenous People according to ADB SPS 2009 definition.
1019. The distribution of ethnic groups tends to vary by zone. The villages of Zone 1 tend to be either predominantly Lao (Nasay, Thaviengxay, Nasong, Viengthong, Xiengkong) or predominantly Khmu (Nahong, Phonhom). Only 1 village, Phonngeng is predominantly Hmong.
1020. The three villages in the upper part of the reservoir (sub-zone 2UR) are more ethnically diverse. The largest community, Pou, has about 29% Lao Loum, 69% Hmong, and the rest Khmu. Piengta and Hatsamkhone are predominantly Lao Loum.
1021. The four villages in the lower part of the reservoir (sub-zone 2LR) and the one village in the construction area (zone 3) are almost all Hmong. Although Hmong are traditionally highland

residents, these communities live in the river valley. Their settlements are quite recent, as outlined in the impact assessment on 2LR, with the oldest of the four villages having been established about 30 years ago. The lands were given to these villagers after the civil war, in gratitude for their support for the Pathet Lao. Many of the villagers moved from higher, mountainous areas, the traditional area where Hmong live, with some having moved from the Phu Katha region, one of the sites first considered as a resettlement area. The section on Broad Community Support discusses further the assessment of ethnic groups in 2LR as Indigenous People along ADB SPS 2009 definition.

1022. The host communities are ethnic Lao Loum. However, it should be noted that Ban Hat Gniun and Ban Hatsaykham (the Hmong community in Zone 3) have been linked as a single administrative entity for some time (Hatsaykham is considered a sub-village of Hat Gniun).

1023. Most of the downstream villages (Zone 4) are entirely or predominantly Lao Loum, with the exception of Nampa, which is split between Lao Loum and Khmu.

Village	HH	Population		Ethnic Groups					
		Total	Fem.	Lao	%	Hmong	%	Khmu	%
Thaviengxay	267	1,646	981	1,179	71.6	467	28.4	-	-
Phonngeng	95	771	371	18	2.3	753	97.7	-	-
Nasong	111	681	240	565	83.0	-	-	116	17.0
Viangthong	107	617	252	438	71.0	-	-	179	29.0
Nasay	51	270	170	257	95.2	-	-	13	4.8
Xiengkhang	102	546	266	366	67.0	131	24.0	49	9.0
Nahong	92	543	273	55	10.1	-	-	488	89.9
Phonhom	180	1,200	557	164	13.7	97	8.1	939	78.2
<b>Subtotal Zone 1</b>	<b>1,005</b>	<b>6,274</b>	<b>3,110</b>	<b>3042</b>	<b>48.5</b>	<b>1,448</b>	<b>23.1</b>	<b>1,784</b>	<b>28.4</b>
Pou	172	1,129	557	330	29.2	773	68.5	26	2.3
Piengta	82	454	210	436	96.0	10	2.2	8	1.8
Hatsamkhone	74	453	233	453	100	-	-	-	-
Houaypamom	37	254	122	-	-	254	100	-	-
Sopphuane	58	416	206	-	-	416	100	-	-
Sopyouak	126	916	439	19	2.1	897	97.0	-	-
Namyouak	163	1,149	564	-	-	1,149	100	-	-
<b>Subtotal Zone 2</b>	<b>712</b>	<b>4,771</b>	<b>2,331</b>	<b>1,238</b>	<b>26.0</b>	<b>3,499</b>	<b>73.3</b>	<b>34</b>	<b>0.7</b>
Hatsaykham	33	218	110	-	-	218	100	-	-
<b>Subtotal Zone 3</b>	<b>33</b>	<b>218</b>	<b>108</b>	<b>-</b>	<b>-</b>	<b>218</b>	<b>100</b>	<b>-</b>	<b>-</b>
Somseun	221	1,207	602	1,207	100	-	-	0	0

Nampa	84	584	329	293	50.2	-	-	291	49.8
Houykhoun	358	2,180	1,076	2,171	99.6	-	-	9	0.4
Thong Noi	165	839	410	839	100	-	-	-	-
Thong Yai	86	437	218	437	100	-	-	-	-
Sanaxay	274	1,156	582	1,156	100	-	-	-	-
Phonsy	137	719	369	719	100	-	-	-	-
Pak Ngiep	137	659	430	659	100	-	-	-	-
Sanoudom	94	457	221	457	100	-	-	-	-
<b>Subtotal Zone 4</b>	<b>1,556</b>	<b>8,238</b>	<b>4,237</b>	<b>7,938</b>	<b>96.4</b>	<b>-</b>	<b>-</b>	<b>331</b>	<b>3.7</b>
Hat Gniun	67	371	157	371	100	-	-	-	-
Thahuea	50	265	122	234	88.3	-	-	31	11.7
<b>Subtotal Zone 5</b>	<b>117</b>	<b>636</b>	<b>279</b>	<b>605</b>	<b>95.1</b>	<b>-</b>	<b>-</b>	<b>31</b>	<b>4.9</b>
<b>Total</b>	<b>3,423</b>	<b>20,137</b>	<b>10,065</b>	<b>12,823</b>	<b>63.7</b>	<b>5,165</b>	<b>25.6</b>	<b>2,149</b>	<b>10.7</b>

Table 117: Population of Ethnic Groups in the Project Area (Source: Zone 1, Report NCC, 2008; all other zones: Field Survey, 2011)

1024. Given that all of the communities facing resettlement impacts from the Project (Zones 2LR and 3) are ethnic Hmong, any particular social, economic, or cultural development issues for ethnic minorities in the project area would be for the same communities that will receive social, economic, and cultural assistance under the Resettlement Action Plan (RAP). For this reason, it has been decided that the Ethnic Development Plan (EDP) for this project is included as part of a combined Resettlement and Ethnic Development Plan (REDP). Specific impacts regarding ethnicity will be discussed along the Impact Assessments of each Zone.

### 16.1.3 Cultural Practices of Hmong, Khmu, and Lao Loum

1025. Cultural practices directly follow the groups' ethnicity, and are evident in daily life as well as in rituals and festivals. Some of the key cultural characteristics of the main ethnic groups in the project area - Hmong, Khmu, and Lao Loum - are presented in Table 118.

<i>Charac- teristics</i>	<i>Hmong</i>	<i>Khmu</i>	<i>Lao Loum</i>
<i>Language</i>	Hmong-Mien Language Family; no specific letters;	Austroasiatic Language Family. no specific letters;	Tai-Kadai Language Family. specific letters;
<i>Usual diet</i>	non-glutinous rice, vegetables, fish, domesticated animals, and food foraged or hunted	non-glutinous rice, vegetables, fish, and food foraged or hunted from fields, waters, and forests	glutinous rice, vegetables, fish, domesticated animals, and food foraged or hunted from fields, waters, and

<i>Charac- teristics</i>	<i>Hmong</i>	<i>Khmu</i>	<i>Lao Loum</i>
	from fields, waters, and forests		forests
<i>Location of Village</i>	Near waterways in highlands with forests nearby	Near waterways in middle elevations with forests nearby	Near waterways in lowland or valleys, preferably with forests nearby
<i>Housing</i>	Houses are constructed directly on the ground; One room without window; Walls made of vertical wood planks, wood and bamboo beam and thatch roof; 1 main upstream door and 1 optional lateral door; There is a fireplace in the corner or the middle of the house for cooking and heating;	Rectangular house supported by 1.5m high wooden piles; Small windows Bamboo or wood walls, bamboo or plank floor and roof in thatch, bamboo or wood tiles; A single room with 1 fireplace and 1 private dormitory;	Houses are built on wooden piles with the floor from 1 to 2.5 meters above the ground; Floor and walls in wood or bamboo; Frame in hard wood; Roofing in thatch and bamboo tiles, locally in leaves and wood tiles; Large public dining room and private bedrooms separated with wooden or bamboo wall;
<i>Main occupation</i>	Rice growing, vegetable gardens, animal husbandry; fish in local waterways and forage and hunt in forests for supplementary food and other resources; traditionally practiced shifting cultivation;	Rice growing, vegetable gardens, animal husbandry; fish in local waterways and forage and hunt in forests for supplementary food and other resources; traditionally practiced shifting cultivation;	Rice growing, vegetable gardens, animal husbandry; fish in local waterways and forage and hunt in forests for supplementary food and other resources; traditionally practiced sedentary, rice-based cultivation;
<i>Traditional handicrafts</i>	Weaving Bamboo basket	Weaving Bamboo basket	Textile Rattan Wood carving Bamboo furniture Silk carpet Paper making Pottery silver and Gold work
<i>Education</i>	In basic statistics, Hmong have lower rates of achieved levels of formal	Similar than for Hmong, achieved levels of formal education of Khmu are	Lao Loum show higher rates of school attendance and completed formal educational

<i>Charac- teristics</i>	<i>Hmong</i>	<i>Khmu</i>	<i>Lao Loum</i>
	education; however, this is strongly linked to remoteness and overall public education in Lao language; consultations with the PAPs showed a strong engagement by families in using education as a strategy to improve livelihoods of their children	statistically lower than for Lao Loum. As with Hmong this is strongly related to remoteness and Lao Loum language capabilities.	levels, linked to better access to formal education in regard to distance as well as language capabilities.
<i>Health</i>	While traditional medicine has been in use for many generations, in recent times in the Project area, the village health centres have become an essential reference for health support	Traditional medicine plays an important role, but with increased access to urban areas, public health centres are of increasing importance.	Public health facilities and pharmacies in urban areas are the core references for health support. Traditional medicine has just a subordinate role.
<i>Spiritual beliefs</i>	Spirits inhabit animals and other natural object.	They believe in the house spirit (hrooy gang), the spirits of water (horn), the spirit of the forest (hrooy phi), and others. Among the most feared are the hrooy poop and the hrooy suu;	Belief in spirits: Phi Phô, Phi Mê, Phi Ban, Phi Pop, Phi Muang, Phi Nam, Phi Pa
<i>Major festivals</i>	New year (Kinh Tiang). Marriage by kidnapping Healing, exorcism, rice cycle and spirit return ceremonies	New year (Kinh Tiang). Wedding and death ceremonies. Healing ceremonies	Lao new year (Pi May), boat festivity (Suang Hua), Rocket festival (Bang Fay), welcoming festivity (Baci), ancestor remembrance (Bun), weddings (Dong)
<i>Marriage</i>	Marriage traditionally has been initiated by “bride stealing” Consent-marriage has mostly replaced this custom. Afterwards, their parents negotiate a bride-price. Women may not marry within the same clan	Marriage traditionally arranged by go-betweenes from boy’s family to girl’s parents. Consent-marriage has mostly replaced this custom. Basically patrilineal. However, after marriage, the	Marriage traditionally arranged by go-betweenes from boy’s family to girl’s parents. Consent-marriage has mostly replaced this custom. Once a couple agrees to marry, their parents negotiate

<i>Charac- teristics</i>	<i>Hmong</i>	<i>Khmu</i>	<i>Lao Loum</i>
	in which they are born. Strong patrilineal social systems.	new couple lives with and assists the wife's family until the birth of their first child, when they then move in with the husband's family. They then continue to stay with the husband's family and the wife serves the husband's parents	a bride-price.
<i>Village leaders and other influential villagers</i>	village headman heads of lineages elders local administrative organizations and groups	village headman local administrative elders organizations and groups, such as community forest group	village headman local administrative elders organizations and groups, such as community forest group

Table 118: Key traditional cultural characteristics of ethnic groups in the project area

1026. During the field survey, the study team found there was some inter-marriage between ethnic groups, but rarely. Where villages are composed of different ethnic groups, they are able to live well together and share public spaces and resources, as well as public facilities and services. An example of this is the close relations between the ethnic Lao and Hmong in Pou Village.

*House of Lao Loum of zone 2UR**House of Hmong of zone 2UR*



*House of Khmu of zone 2UR*

Figure 43: Typical Houses of each Ethnicity in the project area

#### 16.1.4 Hmong

1027. Hmong arrived in SE Asia from the end of the 19th Century and have traditionally occupied highland areas. Most Hmong now live in northern and central provinces, but smaller Hmong communities are found throughout the country. In total the Hmong constitute about 8% of the population in Lao PDR.
1028. Hmong culture differs significantly from the majority Lao culture, both in terms of social organization and religious beliefs, as well as historically and ecologically. Hmong groups normally occupy the highest areas and are known for practicing pioneer-swidden cultivation that clear-fells forest areas. Strict clan allegiance and marriage rules and self-contained, independent economic systems are characteristics of the group. The Hmong have their own language (several dialects) which is a part of the Hmong-Mien Language family, and which has written form, unlike many other ethnic group languages in Laos.
1029. The Hmong house designs reflect a colder climate and higher land elevation not prone to flooding. The Hmong house is normally built on the ground (Figure 43) and comprises extended families of two or three generations. The siting of houses follows tradition, i.e. alignment from east to west, and the entrance of houses does not face the mountain. In villages of mixed ethnicity, Hmong typically stay in one part of the village, partly because their funerary rites are quite different from others, and other ethnic groups fear the ghosts these might generate.
1030. Of all ethnic groups in Lao PDR, the Hmong have retained the highest degree of cultural autonomy. The Hmong language, religion and clan structure still mark these groups off as unique despite good knowledge of Lao language, integration into the nation state and army to some extent and adaptation of lowland agricultural systems due to the moving out of mountainous areas.

1031. **Livelihood:** Hmong are heavily reliant on swidden cultivation due to their late arrival in Laos and lack of available land in lowland areas of the country. However, those in the PIZ have resettled in affected villages comparatively recently and have taken up paddy cultivation on land made available to them by GoL in recognition of their services to the state during the last war.
1032. The Hmong in the NNP1 project area are mainly found in the 5 villages of the construction site Zone 3 (Hatsaykham) and Zone 2LR (Namyouak, Sopyouak, Houaypamom and Sopphuane). All will be significantly impacted by the Project and require resettlement with the full compensation and mitigation entitlements. Another village in 2UR has a significant population of Hmong community in Ban Pou, some of whom will be affected.
1033. The Hmong in 2LR and 3 have relatively large swidden areas in relation to paddy land, but higher productivity from paddy than upland swidden. All Hmong villages do, however, have relatively large numbers of buffaloes, cattle and areas for vegetable gardens and orchards. Livestock raising is a particularly important component of the Hmong domestic economy.
1034. **Social Organization and Religion:** Hmong groups are divided into patrilineal clans (xeem) which are strictly exogamous, that is marriage between clans is compulsory. Polygyny is traditional but less observed nowadays than in the past. Loyalty to one's clan is central and clan solidarity is very important, linking members to villages throughout the country and even abroad. Elders represent village households in all discussions, particularly with outsiders, and it is unusual for any person or family to contradict elders in meetings. Hmong villages aim to be self-sufficient and autonomous with limited interaction with other ethnic groups.
1035. Hmong religion is characterized by traditional shamanistic practices, in which shamans (txiv neeb) enter into trances, journeying into the spirit world in order to obtain information, intervene on behalf of the living, or inquire about future events. Ancestor worship and a pantheon of household spirits (dab), spirits of deceased family members, spirits in nature, as well as gods inspired by Taoist beliefs are all integral parts of Hmong religion. Ancestor worship includes ritual obligations to deceased clan members.
1036. Hmong of the Project Area bury their dead. The ceremony includes offerings to the deceased, animal sacrifices, followed by a feast for the whole clan and village with copious amounts of food and alcohol and finally evocations for the commencement of the soul's journey to join the ancestral spirits. The funeral ceremony normally lasts from between two and seven days, depending on the status and age of the deceased. Cemeteries are typically located in elevated forest lands, on the outskirts of the village at the distance of 1-2 km. As is the case with most groups, Hmong are not permitted to hunt or extract forest products from this area. In fact, villagers generally avoid approaching the area for fear of disturbing the ancestral spirits.
1037. However, Hmong from PIZ affected villages have moved away from many of the customs and practices that mark them as ethnically separate from the larger Lao society, though death rituals



remain strictly observed. Men and women no longer wear distinctive Hmong dress except a very few older women or on festival days, and everyday clothes are now purchased from the market instead of made at home. Livelihoods have shifted in emphasis, with paddy rice field production now more important than swidden, and different housing construction practiced with the introduction of solid two-storey houses in 2LR. The Project's consultation process has identified inter-generational differences of opinion about the future, and some households in Zone 2LR, particularly poorer families, are defying elders and opting to make different choices concerning their entitlements from the Project.

1038. Hatsaykham (Zone 3) is closely related by kinship and clan membership to communities in 2LR and follows the same traditions and styles. Even though living close to a Lao Loum community and being administratively integrated into Lao-led village authority, no Lao Loum house styles can be observed and swidden cultivation remains the main form of agricultural production for domestic consumption with livestock being an important source of cash income, complemented by hunting and NTFP collection. There are still a few people playing “Kane” pipes, but there are no more people playing Hmong flute.
1039. The Hmong ethnic group in the PIZ meet three out of four criteria to be considered as indigenous people as outlined in the SPS 2009:
- i. self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
  - ii. customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
  - iii. a distinct language, often different from the official language of the country or region.
1040. However, the fourth criteria, “collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories” is more difficult to assess in the Lao context due to the old as well as more recent history of the country, i.e. large-scale population movements by a series of ethnic groups. As previously stated, the settlements of the Hmong community in Zone 2LR and Zone 3 are quite recent with the oldest having been established about 30 years ago, these lands were given to these villagers after the civil war, in gratitude for their support for the Pathet Lao. The Hmong’s, therefore, identify closely with these lands which they consider as their reward for fighting for their country. The Project, therefore, assessed in the REDP that they fulfil the criteria of ADB’s definition of indigenous people based on national discussions of customary land use rights and ethnic groups together with the criteria outlined in the ADB Social Policy Statement (SPS) 2009.

### **16.1.1 Khmu and Lao Loum**

1041. Villages in Zones 2UR and Zone 4 are mainly Lao Loum, with a few Khmu. Upstream of the

reservoir, 2 Khmu and one Hmong community are located with no impact from the Project other than participation in its health program. These populations are well integrated into the wider Lao society and economy, and have a history of good relations with other ethnic groups in the area.

## ***16.1 Social Impact and Risks Assessment***

1042. According to the assessment of population distribution by ethnicity outlined before, there are 3 main ethnic groups in the project area: lowland Lao, Hmong, and Khmu.
1043. The 3 villages in the upper part of the reservoir (sub-zone 2UR) are more diverse. The largest community, Ban Pou, has about 34% Lao Loum, 62% Hmong, and the rest Khmu. Piengta and Hatsamkhone are predominantly Lao Loum with some Hmong and Khmu households in the first of the two villages.
1044. The 4 villages in the lower part of the reservoir (sub-zone 2LR) and the 1 village in the construction area (zone 3), all of which will have to resettle, are nearly entirely Hmong, with just a few Lao Loum families living there. The host communities are primarily Lao Loum, though there are some Khmu living in Ban Thahuea.

### **16.1.1 Cultural Beliefs and Practices**

1045. As the Hmong in the PIZ have already started the process of change in their cultural and livelihoods practices for many years, Project impacts on affected families may be less than expected. Nonetheless, there are impacts on cultural beliefs and practices, particularly on loss of correctly sited housing, loss of graveyards, and loss of lands that enable them to pursue customary livelihood choices. Additionally, literacy and fluency in the Lao language is limited, particularly among girls and women. Even for those Hmong fluent in Lao, interpretation of concepts and ideas from Lao to Hmong often present a challenge.
1046. Based on the public consultations, a major concern of the affected people is the loss of their graves. The only cemeteries and gravesites which are affected by the Project are in Sub-zone 2LR, the lower section of the reservoir area. These will be submerged under the reservoir, and so a religious ceremony and other traditional practices are required in addition to compensation. Possible impacts of the access road or transmission line on graves or cemeteries will be determined after the final alignment of these constructions are completed; however, it has been recommended that the alignments take into consideration the existence of cemeteries and be set to avoid them.

Type of losses	Unit	Zone 2UR	Zone 2LR	Zone 3	Zone 5	T.-line	Access road
Grave >18 years	Unit	-	326	-		-	-
Grave <18 years	Unit	-	82	-		-	-

Table 119: Impact on Graves (Source: Field Visit 2011)

1047. As requested by the communities, a traditional ceremony will be performed for each grave. They also requested that compensation be made for those graves that are less than 5 years old, with a different rate of compensation paid depending upon the age of the person, whether he or she was less than 18 years old or 18 and above at the time of death. Further details regarding necessary ceremonies and related costs will be discussed with the villagers and included in the updated EDP chapter of the REDP.

### 16.1.2 Social Relations

1048. In the Hmong communities in the project area, the key informal leaders are the lineage elders. They are usually the oldest members of a lineage, and in the past the elders made decisions and settled disputes in the communities. The elders remain important in decision-making, and their role is often being incorporated into the formal village leadership.

1049. The official village leadership – the village head and deputy village head – in all the communities to be resettled are selected by consensus, with the most important voices being those of the village elders. The elders also maintain an important role in settling village disputes. This is not unique to the Hmong communities: similar informal leadership patterns can be found in communities of other ethnic backgrounds, and the role of the elders remains strong and influential.

1050. The role of the elders in settling disputes has been recognized by the government and included in the official GOL guidelines to settle grievances under major development projects: village elders are among those to be included in the village level grievance committees. The project has recognized the important role of the village elders throughout the consultation process, and will continue to work with them through the resettlement and social development programs next to consultations with formal GOL authorities and villagers.

### 16.1.3 Land Use Systems

1051. A study on women's land tenure rights<sup>48</sup> noted that "within upland land use and resource management systems, men and women have developed different concepts of gender-specific

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<sup>48</sup> Elizabeth Mann & Ny Luangkhot, *Women's Land and Property Rights under Customary or Traditional Tenure Systems in Five Ethnic Groups in Lao PDR*, Land Policy Study No. 13 under LLTP II, GTZ Lao-German Land Policy Development Project, 2008

rights and responsibilities as a method of ensuring sustainability of their livelihoods, of their communities, and of their cultural identities. Among animist communities, the relationship of people to land accessed by an identified group for individual or joint purposes and over which that group might have a collective claim, has an important spiritual dimension which regulates access, gender use, and seasonality of use. These lands have been used by such communities for centuries and the inheritable right to use them is well understood in villages. However, these rights are not recognised in law under the modern Lao state."

1052. The Government of Lao (GoL) has taken a position where the Land Law applies to all citizens of Lao PDR. Differences among and between ethnic minorities in Lao PDR are too great for statutory law and policies to accommodate. However some traditions and practices are in line with the Land Law, while others are not.
1053. The fragility of different systems is demonstrated by their ability to respond to external influences. Where these can be absorbed and cushioned, land use practices are maintained and gender-specific customary use observed. Where they cannot, the focus of custom and practice shifts as do perceptions of land and property rights. Sometimes this provides more customary and gender equity over land and property resources.
1054. Impacts on land use systems will be total in Zones 2 and 2LR, and to some extent in Ban Pou in Zone 2UR. In shifting to the resettlement site of Houaysoup, the land use system will change with increase in irrigated sedentary agriculture and decrease in shifting cultivation. Because of severe constraints in the country at large on available land, forests and other natural resources due to population growth, pioneering slash-and-burn, and widespread award of land concessions to foreign investors, national policy is to limit swidden agriculture. Agricultural activities promoted in the NNP1 resettlement communities will be based on rice paddy, environmentally sustainable, multi-cropping in settled upland agricultural plots, and sustainable livestock management.
1055. Participatory Land Use Planning and a community-driven livelihood program will allow livelihood adaptations according to the aspirations and needs of the PAPs (see LIRP/REDP).
1056. A major change on customary practices will be the promotion of statutory gender equity over tenure rights and responsibilities in the resettlement area.
1057. Further constraints on the usage of the watershed area in the reservoir area will be experienced via the environmental programs of the Project. This will mainly affect the limitation of extension of existing rubber plantations and usage of chemicals in these plantations. In the resettlement site, alternative forest areas are available and at the same time a sustainable usage of the watershed management area will be promoted. Details of activities and programs in the watershed are included in the Project's Watershed Management Plan.

### 16.1.4 Forest Use and Hunting

1058. As outlined above, the impoundment of the reservoir will impact forest use for PAPs of Zone 3 and 2LR. Forest land has been identified at the resettlement site and has been designated for resettlers exclusive use. Some forest area above full supply level will still be accessible after impoundment across the reservoir. Forest use in the watershed will comply with the national framework on watershed areas and the Project's Watershed Management Plan, which includes prevention of illegal hunting and logging activities. Forest use in Houaysoup will be managed under agreements with PAPs arrived at as an output of PLUP.
1059. A further risk to current and future land resources of resettlers are illegal activities by labourers belonging to the Contractor and sub-contractors' workforce. Collection of NTFPs and hunting, i.e. the usage of community resources, is prohibited under the Code of Conduct which every worker is required to sign. The Project is also strengthening its internal monitoring as well as that of public authorities, to prevent illegal activities in and around the construction site.

### 16.1.5 Resettlement

1060. The affected people who will be resettled will face drastic changes in their lives as a result of being resettled to new places. The geography and location of basic resources will not be the same as in their original villages. They will need to adapt to new homes, new land, and a new environment.
1061. The affected people of Zone 3 all live in Ban Hatsaykham sub-village, which is administratively part of Ban Hat Gniun village. They will join the other four villages in moving to Houay Soup. Of all the people being resettled in the project, people from Hatsaykham will face the least changes in terms of geography and resources. The people still can use much of the same forests, rivers, and other resources.
1062. The affected people in the 4 villages of Sub-zone 2LR will be resettled downstream from their current homes, because the entire area will be inundated by the main reservoir. They will resettle to Houay Soup Area, just south of the re-regulation dam, where there is sufficient land and other resources for all households.
1063. At the new resettlement site, the affected people will be allocated agricultural land of equal productive value in compensation for the land they lost. Even so, as outlined in Chapter 14, they may have to adjust to additional forms of non-land based livelihoods, in order to achieve a standard of living better than in their original communities. The project will support this process with a large livelihood program, starting already in the current villages and continued in the resettlement site during the stabilization phase.
1064. The new resettlement site will have better infrastructure and facilities than is available in the existing villages. There will be an all-season access road, access to electricity, water supply, primary and lower secondary schools, a health centre, and other facilities such as a market area,

bus stop, and community centre, most of which are not available in the current villages of the affected people. In addition, a number of development activities are planned, which will involve the affected households as priority beneficiaries. The combination of improved infrastructure and development activities will provide the villagers in the resettlement area with new opportunities for a broader range of livelihoods, with greater access to markets and to resources.

1065. If there would be no project, the villages are more likely to become part of the development program of the GoL, which integrates small villages, like those they now live in, into larger communities. At times, this integration of villages involves physical resettlement to the large communities, for easier provision of basic physical and social infrastructure. Even without the project, the communities would feel the impact of a market economy and globalization, which tend to lead people away from subsistence agriculture to more commodity production and also to a greater variety of livelihoods, many of which are non-agricultural and non-land based. Many of the changes that will occur as part of the resettlement process would likely have taken place in any case, even without the Project.
1066. The Project enhances the speed of these developments, while at the same time provides livelihood development-, health-, education-, cultural awareness-, and other programs outlined in the REDP and SDP to support the PAPs to cope with these changes and make use of them for the development of an improved livelihood.

### **16.1.6 Traditions**

1067. With an increased mobility and thus spatial integration of remote communities with provincial and national centres, increased social and economic interaction between ethnic groups leads to new forms of hybrid cultures and a transformation of traditional practices of social life.
1068. This encompasses for example traditional health practices: Formal medical services gradually increase and cover greater areas of the country. Consequently, most ethnic groups practice a type of eclectic form of medicine, which is to combine natural herbal remedies with modern scientific approaches. This often involves decisions based on traditional belief in spirits, theories of causality and a partial understanding of the workings of Western medical practices. Improving health infrastructure and services does not always take into account traditional practices and working with traditional healers and local knowledge. Hence, the approach to solving some of the health problems has to connect rather than eliminate local knowledge and experience.
1069. House designs are a second example: There is a considerable range of house designs, both in terms of ethnic differences and general size and conditions. The general trend is for adaptation of mixed architecture, with two-storey houses replacing Lao Loum single-storey houses on columns as well as Hmong single-storey houses on the ground. Traditionally Lao Loum households keep animals such as pigs under stilt houses, with higher risk of associated diseases

such as encephalitis occurring.

1070. Clothing styles are becoming very similar throughout the area, including styles from different cultures, including neighbouring countries, but as well from Korea, Japan, or the US. Traditional clothing styles that once distinguished some ethnic groups are rare for most groups. Some notable exceptions are some of the Hmong older generations who still wear their traditional attire. However, most of the ethnic groups in the project area no longer make traditional clothes and are adapting manufactured materials to local needs or are buying clothes in markets. Nearly all the villagers in the project area now buy clothes in local markets that are produced locally or are cheap textiles from Thailand, China and Vietnam.
1071. Tools and other household equipment are readily available in local markets. In a few of the more remote villages there are still some local blacksmiths where metals are recast into tools, knives and weapons. Traditional weaving in bamboo and rattan is still practiced widely through the region, and provides some income for a number of indigenous people.
1072. The Project actively supports the preservation of traditions via its cultural program outlined in the SDP, focusing on enhancing the capabilities of villagers to record their own history. A small museum in the resettlement site will complement these recordings.

### **16.1.7 Customary Gender Patterns**

1073. Hmong culture traditionally follows a patriarchal and patrilocal social structure, with overall decision making powers, property and tenure rights remaining in the hands of men. The Project's principles of gender equity have to be reconciled with customary practice, while being consistent with both statutory national policy and law, as well as with international safeguards standards. Following separate discussions with Hmong women in affected villages, the Project will adopt a principle of gender equity where it may conflict with custom.
1074. Many Hmong adults, and especially women, have little or no formal education and are illiterate or functionally illiterate in Lao language. This presents barriers for effective interaction with government officials and other outsiders, including many groups who provide social and economic development services and the project itself. This potentially leaves Hmong women, at a disadvantage, unable to take full advantage of the social and economic development opportunities and often open to exploitation or being taken advantage of by outsiders. Project measures to overcome these barriers and to ensure women's full and informed participation in Project consultation processes and programs are more fully described in the EDP (REDP Chapter 7).

### **16.1.8 Tenure and Property Rights**

1075. The GoL has a number of a number of legal instruments governing land, property, inheritance and ethnic groups, as well as policies which have consequences on how men and women in

Laos make decisions over land, property and inheritance. These laws are presented in Chapter 3.

1076. For details on the overall situation in Laos, please refer to section 14.3.6, explaining the limited implementation of titling of private land and even less of community land in remote areas; with the overall basic principle that land belongs to the state.
1077. Both individual and community land tenure, land use and property rights in Hmong communities of the PIZ are mostly secured informally at village level. The Project acknowledges these customary rights and the responsibility to address impacts on these rights in a culturally appropriate way. As women do not have land or property ownership rights under patrilineal inheritance practices among Hmong, some adjustments will be made by the Project to ensure women will be able to understand and choose a more gender equitable approach to land and property tenure. The measures are described in the REDP as well as the GAP in the SDP.

### **16.1.9 Cultural differences**

1078. The host communities are mostly Lao Loum, with some Khmu in Ban Thahuea; while the resettled communities are predominantly Hmong. The new resettled will be across the river, some 2 to 3 km distant from Ban Hat Gniun. However, the issue of cultural difference between the communities is not considered of great concern, as currently villagers from Hatsaykham sub-village and villagers in the main village of Hat Gniun cooperate productively.
1079. Even so, while the villagers of the host communities and PAPs have expressed no serious reservations about hosting the resettled households, the Project needs to be well aware of the cultural differences and possible cultural conflicts, but even more so potential conflicts on communal resources between host villages and settlers (independent of their ethnicity). The Project will also be aware of cultural inhibitions between ethnic groups over the siting of housing, and take into account the sensitivities of cultural beliefs when planning the living and working space between host and settler households. The issue of having accepted processes of conflict resolution in place will be crucial to the success of the resettlement and development process.
1080. The main cultural differences are likely to be between workers and other migrants coming to the area during construction on the one hand and the local communities proximate to the construction area, the host communities and resettlement communities in Zone 5, on the other.



### 16.1.10 Ethnic Issues Where the Impacts from the Project are Minor

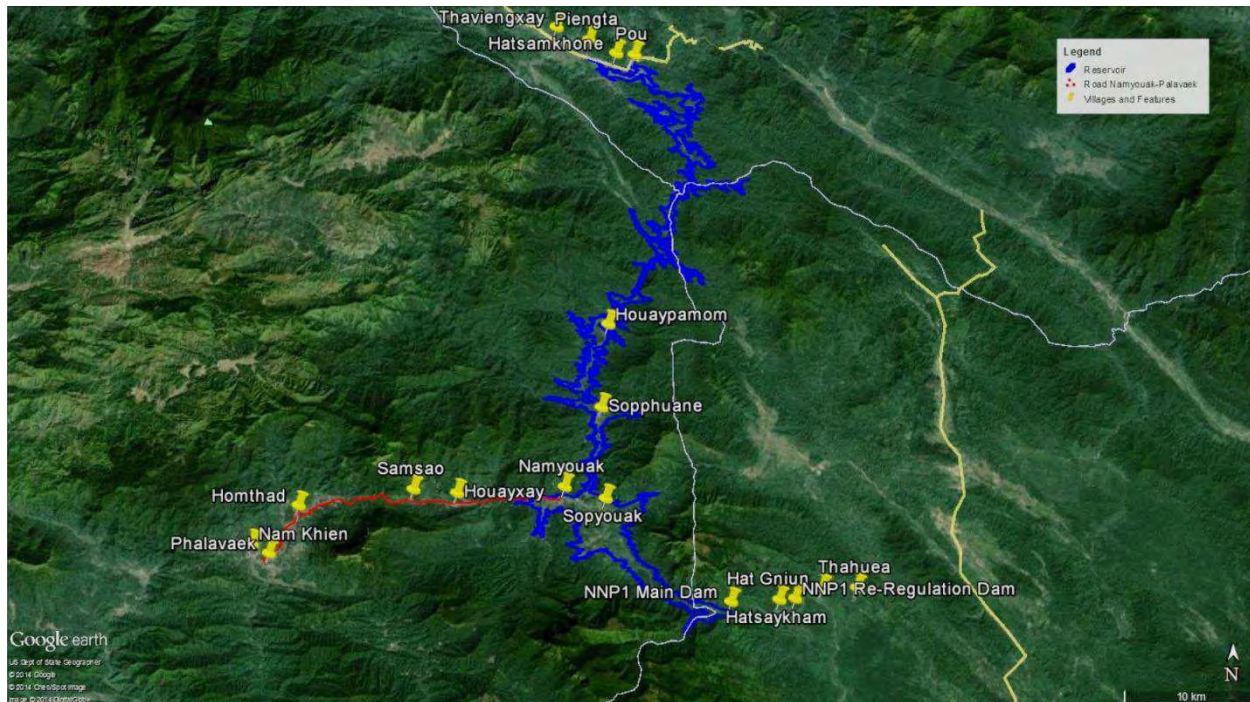


Figure 44: Geographic Conditions of the Reservoir Area

1081. As described in Chapter 2, the NNP1 reservoir is very long and narrow, impounding the steep Nam Ngiep river valley extending from the gorge close to Hatsaykham via a basin where the four villages of 2LR are located, continuing as a steep valley all the way to the edge of the reservoir along the plain of the three upper reservoir villages. Given this geographic shape, no access to this area is given from most sides. Mountain ranges in the east and west leave access to the reservoir only open via the river coming from Hatsaykham, via the mountainous road from the Hom district town of Phalavaek in the west and via the river from the three northern villages of 2UR. The 3D view in **Error! Reference source not found.** underlines the predominance of mountains in the area. Given this geographic characteristic, all impacted villages are located along the river as described for Zones 1 to 5. The five predominantly Hmong communities around the reservoir (Namyuak, Sopyuak, Sopphuane, Houaypamom, and Hatsaykham) are described in detail in this chapter as well as the Ethnic Development Plan in the REDP.
1082. Three other ethnic group communities (two Khmu and one Hmong) far upstream are divided from the reservoir by several Lao Loum villages of Zone 1 and the three villages of Zone 2UR. In these zones which are not affected by resettlement – that is, Zones 1, 2UR, and 4 – ethnic issues are considered to be minor, with no relevant impacts in Zones 1 and 4. The people in these areas are to stay in the same places, even the few households in Sub-zone 2UR, who need to relocate their houses elsewhere in their village. Their village structures, social relations, and cultures will not be altered or affected. While there are some social issues to consider and

development programs to be promoted in these areas with ethnic considerations integrated, this will be a less sensitive issue than in and around the resettlement area. The programs are outlined in the SDP and the Watershed Management Plan (see EIA). The related program of sustainable usage of the Watershed Management Area is further supporting a strengthening and protection of traditional usage of natural resources from external commercial impact.

1083. The only other villages with potential access, though very limited, to the river outside the immediate scope of the Project are located along the road to Phalavaek: Houayxay, Samsao, Homthad, Nam Khien, and finally Phalavaek, extending along a stretch of around 40km of mountainous road. All of these villages are predominantly Hmong. The first village, Houayxay, is located around 10km from the most western village of 2LR, Namyouak. As until recently motorbikes have not been available to most of the villagers, hence, with respect to natural resources in the Project influence zone, they did not access natural resources close to the Nam Ngiep River; making use of own large water and forest resources located around their communities rather than walking several hours to the Nam Ngiep area occupied by the four 2LR villages. It could be guessed that resources in the area may be abandoned after the resettlement of the villages of 2LR, and thus open for these other villages. However, villagers of 2LR requested, and the Project responded positively, that access to the areas not impacted by the impoundment of the reservoir will be restored and even after resettlement, villagers of 2LR will continually be able to use natural resources in the area. As the map provided above shows, access via the reservoir from the Houaysoup resettlement site to most of the areas of 2LR will be faster than for people travelling from the villages in the west, divided by several hills. Taken together, no change in the usage of natural resources is expected to result from the Project for the western villages.
1084. With respect to impacts on cultural ties, these villages have also limited cultural ties to the four villages of 2LR. The Hmong clan system extends throughout the country and beyond and accordingly families of 2LR are also related to families in these villages. With Phalavaek the capital of Hom District, administrative ties link the 4 villages of 2LR to the other villages in the west, too. However, these ties do not form a close bond. For example, during Hmong New Year (the most important and only broad communal Hmong festivity) the four villages of 2LR celebrate together; formal invitations get extended to public authorities and other villages in the district, but the broad majority of participants come from the four villages only. Accordingly, it is expected that no cultural systems and identities in the west of 2LR get impacted by resettlement of the four villages.
1085. Other project activities analyzed for potential impacts on these communities would be biomass removal from the reservoir. There could be increased traffic on public roads due to reservoir logging, however, the concession to log has not yet been awarded. It is therefore not known which roads might be used. Nevertheless, as per CA Appendix C Clause 71, and the EMP, NNP1PC will have the overall responsibility for the implementation of the Biomass Clearance Plan through the following: (i) provision of management, planning and control through EMO;

(ii) engaging a Contractor with appropriate technical and management expertise to clear the proposed reservoir area; and (iii) provide training for clearance team staff in operations methods, health and safety, UXO surveys and management, chance Find procedures for physical cultural resources, environmental awareness, etc. Hence, if existing roads which extends from Houayxay, Samsao, Homthad, Nam Khien to Phalavaek will be used or any activity related to biomass removal or influx of workers or camp followers will have potential impacts on communities, particularly issues related to community health and safety, cultural and ethnic impacts and sensitivities, physical and cultural resources etc., these will be mitigated through the various environmental and social management plans such as the Project's biomass clearance plan, traffic management plan, labor management plan and public health action plan under the SDP. Moreover, if there any direct or indirect impacts which might occur on other Hmong villages on account of the various Project activities, these will be assessed under the Project's commitment to address unanticipated impacts in accordance with the CA and in consultation with district and provincial authorities, and the Project will prepare updated safeguards plans as required consistent with SPS and the REDP. Measures to address unanticipated impacts are also covered in the REDP in the Policy Gap analysis (section 3.1.1) and Section 5.13

1086. Finally, the option of self-resettlement might lead to physical relocation of households from 2LR closer to the district town. However, an analysis has to be related to the choices of the individual PAPs, which will be due just in 2015. The condition of credible sustainability of their self-resettlement plans and approval by public authorities of self-resettlement based on such an assessment will prevent any disruption or adverse impacts on other communities; with the follow-up commitment by the Project being a further reassurance that the Project will closely monitor any potential changes in socioeconomic systems in the districts of the project area of influence to make self-resettlement a success.



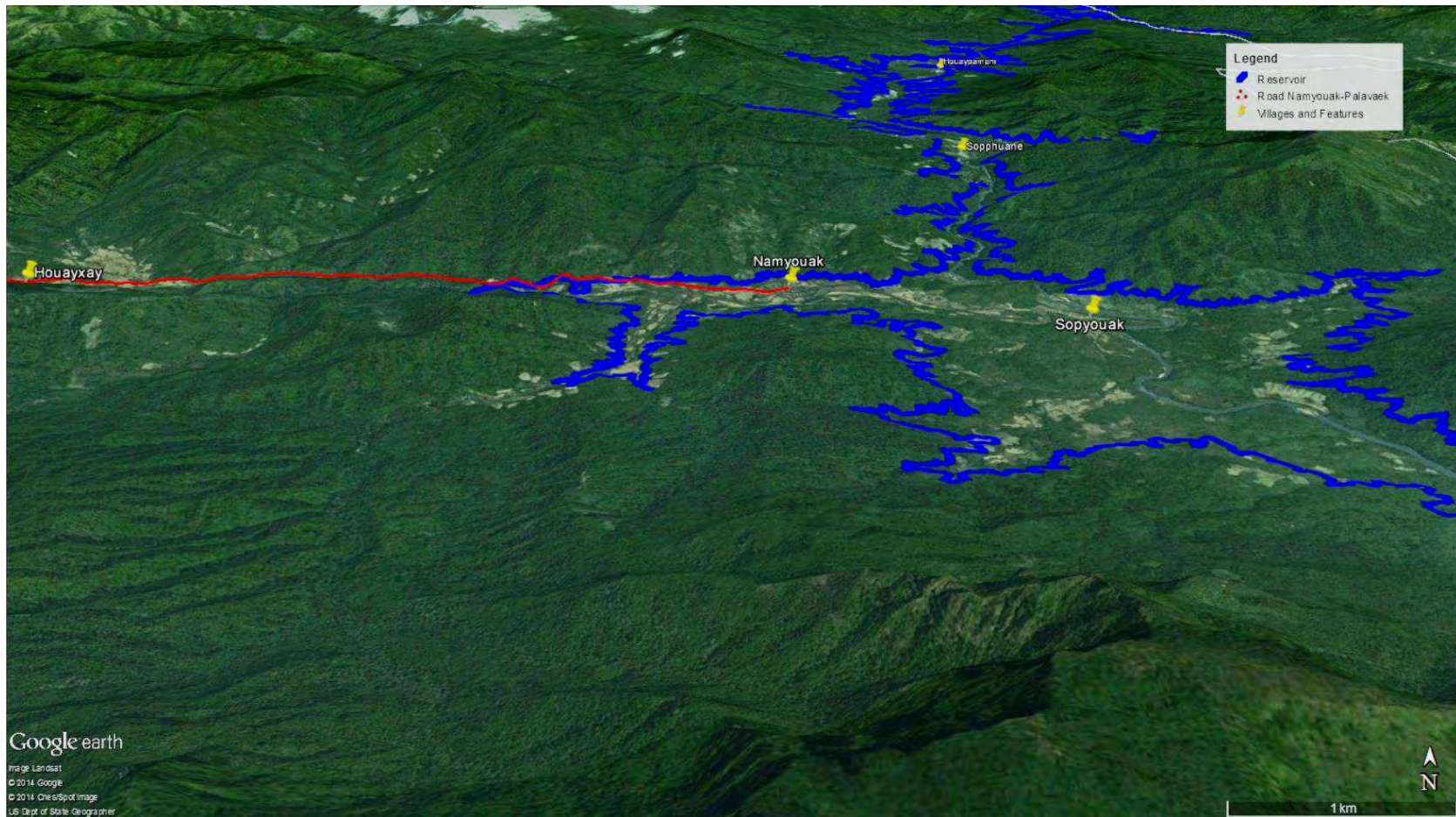


Figure 45: Surrounding Area of 2LR

1087. Further details and mitigation measures are outlined in the EDP (REDP Chapter 7).

## CHAPTER 17 - Gender

### 17.1 Introduction

1088. The Constitution of Lao PDR grants equal rights to women and GoL made gender equality a priority in its development plans and has achieved great progress in recent years. Despite the gains in education, health, economic participation, and decision-making (the Lao National Assembly has one of the highest rates of female representation among legislative bodies in the world), many women in the country continue to be disadvantaged, especially those in rural communities. The most significant gains in education and health have been among women in urban areas and among Lao Loum. Women in ethnic groups in remote rural areas face much greater disadvantages, with less education, poorer health care and higher maternal mortality, and fewer rights to assets, land and household property.
1089. Although women make up more than half the workforce in rural communities, high illiteracy rates keeps many women from being able to participate in development activities. Women from non-ethnic Lao communities who cannot speak Lao, much less read or write, will have fewer opportunities to join in development programs, whether handicraft training, health care, nutrition, or other activities that are intended to improve the conditions of women.
1090. The advancement of women's rights and development of their role in society is promoted actively through several organizations. Among the most important, with members throughout the country, even in the most remote communities, is the Lao Women's Union. The LWU often has a key role in development activities, and is one of the few mass organizations with an established presence reaching into every village.

#### 17.1.1 Lao Women's Union

1091. The role of the Lao Women's Union (LWU) is recognized in the constitution, as providing an information gathering and service delivery role. The LWU has over 600,000 members in Laos. This represents participation in the LWU by about 50% of all Lao females, 17 years and over, (Source: Country Gender Analysis, 2002). Any woman can apply for membership in the LWU. After doing so, the applicant must be nominated to the LWU by village and district women. Its network stretches from the central level to villages throughout the country.
1092. The LWU has forty years of experience in political mobilization. During the past ten years, it has added socio-economic development to its activities, particularly in rural areas. Training under the LWU is an important method to mobilize both men and women in improving livelihoods within Lao PDR households.

#### 17.1.2 Lao National Commission for the Advancement of Women

1093. The Lao National Commission for the Advancement of Women (LaoNCAW) was

established in 2002 under Prime Ministerial Decree No. 37. The role of the Commission, which consists of some of the highest government officials, is to assure gender concerns are addressed at the national, provincial, district and village levels. The roles and tasks of the LaoNCAW are:

1. To assist the Government in formulating national policy guidance and strategic plans of action to promote women's advancement and gender equality in all spheres and at all levels of society.
2. To act as the Focal Point and coordinate closely with local authorities and international organizations concerns for the implementation of the party and Government policy on the promotion of gender equality and the elimination of all forms of discrimination against women. LaoNCAW is planning to establish gender focal points in each ministry to promote the advancement of women in each sector.

### 17.1.3 Other Organizations

1094. For social mobilization that deal with gender issues, but not necessarily as their primary focus, include:

- The Lao Front for National Construction
- The Neo Lao Sang Sat (also sometimes translated as the Ethnic Organization or the fatherland front)
- The Lao People's Revolutionary Youth Organization
- The Lao Trade Union Federation

1095. Families in Zones 1, 2, 3 and 5 tend to produce most of their household goods. Those in Zone 4, especially those closest to the confluence of the Nam Ngiep with the Mekong River, are much more involved in the market economy.

## 17.2 Gender-Related Topics

### 17.2.1 Gender and Work

#### 17.2.1.1 Crops

1096. **Paddy Rice Production:** Members of the households in the project area do many of the tasks together in rice growing, though men are more likely to do some of the tasks, and women more likely to do others. Men are mainly responsible for ploughing and the preparation of seedbeds and fields. Men are generally responsible for handling the draught animals for these tasks. Women are mainly responsible for transplanting and weeding, while water control is men's work. Everyone joins in harvesting. Threshing is usually a male task while women are responsible for carrying the sheaves of rice to the threshing place.

1097. **Swidden Cultivation:** In swidden cultivation, cutting and clearing of fields are male tasks

while sowing and tending of fields until harvest is women's work. Weeding is done by both women and men, though women tend to dominate in this task.

1098. Gender division of labour is an important consideration for development of livelihoods programs under the Project. Typically agricultural extension, advice and inputs have been targeted at men, and care will be given to ensure that women's views and abilities are well reflected in livelihoods planning.

### **17.2.1.2 Animal Husbandry**

1099. Animals that are kept around the house – pigs, goats, chicken, ducks and other birds – are generally the responsibility of women and young girls in the family. Women are mostly responsible for feeding these animals, whether the scraps of food leftover from meals or gathering plants for animal feed.
1100. Larger animals – cattle, buffalo, and horses – are the responsibility of men and boys in the family. They are cared for in two main ways: either herded out to eat the stubble in the fields or nearby grasslands, or left free to roam and find food on their own.

### **17.2.1.3 Foraging / Hunting / Fishing**

1101. Aside from the food people raise, a considerable amount of food is also foraged or caught. Vegetables are collected from the forests, animals hunted, and fish caught. Women are largely responsible for foraging vegetables and other edible plants in the forests. This is in contrast to vegetable farming or home gardens, including herb and spice trays, which is much more a shared task between men and women in the family in all aspects, from preparation of the garden to watering and tending the vegetables. The most important food plants collected from the forests include various green-leaved plants, herbs, mushrooms and bamboo shoots.
1102. Hunting and fishing are male activities. Men also prepare special foods such as chickens, pork, beef, or goats, for special occasions. Fishing is of great importance for domestic consumption, but occasionally it can also bring some income to villagers. When more fish has been caught than consumed by the household, the remainder of the catch is either preserved or sold. It is usually the women who are responsible for taking the fish to the market or for preserving it.

### **17.2.1.4 Handicrafts**

1103. **Weaving:** Until fairly recently, people wove their own cloth and made their own clothing. This was mainly the work of women. They grew and harvested their own cotton, spun the thread, dyed and wove the cloth, and cut the clothing. In recent years, people depend less on making their own clothing, preferring instead to buy ready-made clothes for everyday wear. However, for special events, most people in the project area – especially the Hmong communities, and especially the older residents – still wear their traditional dress, and those outfits are always made by themselves, that is, by women in the household. More often than not, people will also buy cotton thread, rather than grow, harvest, and spin their own.

1104. **Sewing:** Despite people tending to buy more ready-made clothes, weaving and embroidery remain important activities in women's lives in the project area, as traditional handicrafts that they can sell. The cloth and thread for the embroidery are purchased in the markets, and the designs are those traditional to the particular ethnic group. Most of the women, though, cannot afford to buy high quality materials, so even if their traditional skills are quite good, the cloth and embroidery they produce is of lower quality, not revealing their full potential.
1105. **Basketry:** Households in much of the project area use baskets for a wide range of activities, from fishing to storage to threshing rice. Each type of activity requires different types of baskets. Labour is divided for basket-making, with men cutting and slicing the bamboo into strips and women weaving the baskets.
1106. There is ample supply of bamboo in the project area, which the villagers use for many purposes, among them as material for housing (walls and roofs), for fences, for animal enclosures, and for other daily household uses. Bamboo is the main material for baskets, and different types of baskets are made for a great variety of uses: as fishing equipment, for storing rice and other foods, threshing and husking rice, and for steaming foods, especially glutinous rice. Basketry is traditionally the work of both men and women, with women mainly responsible for collecting materials, men and women making the baskets. Men are mainly responsible for the uses of bamboo for house construction.
1107. **Woodworking:** Woodworking, whether for houses, other structures, or tools, or as a handicraft, is mainly the responsibility of men, though women help find the materials.

### 17.2.1.5 Child-rearing

1108. As with most of the country, the communities in the study area have a large number of children. Villagers marry at an early age, and with little or no family planning in the communities, they have children early and frequently. Women bear the major responsibility for raising children, from pregnancy to caring for the infants, to looking after their young children. Although other members of the family will sometimes join in caring for the children, the preeminent role of mothers is evident almost always, with their children at their side, hugging their legs, or on their backs as they cook, do housework, or whatever they may be doing or wherever they may be going.

### 17.2.1.6 Household tasks

1109. **Care of the House:** Women are responsible for looking after the house, for cleaning, sweeping, washing clothes, and cooking. Women share responsibility with men for house repairs: women will prepare the materials (such as collecting bamboo or thatch) while men will do the repairs.
1110. **Husking and milling rice:** In places where there is as yet no mechanical rice mill, the manual husking and milling of rice were, and continue to be, the responsibility mainly of the women of the households, once again no matter what ethnic group. This is an arduous, time consuming, and regular task. Rice must be stored with the husks still on: the milled rice does not keep as long. Only as much rice is husked or milled as is needed for the coming days.



Even now, when many of the communities have gas-powered or electric-powered mechanical rice mills, poorer families cannot afford to pay for the service, and so continue to husk and mill their rice manually.

1111. **Cooking:** Cooking is another responsibility of women. In the communities in the study area, at least two meals are cooked: the first in the morning, which is also when food is prepared for mid-day meals, and the second in the evening. Preparing the meals entails all aspects of the task, including collecting firewood, fetching water, and milling and husking rice, all activities that take considerable time and effort.
1112. **Collecting firewood:** Collecting firewood is almost entirely the responsibility of the females in the families, from young girls to older women, no matter what ethnic group. They collect the branches and other pieces of wood in evenings, carrying the wood on their backs for quite a distance to their homes. Each house has a pile of firewood stored beside it, to be used for fires for cooking and to help provide heat during the winter months.
1113. **Fetching water:** With very few villages in the project area as yet having a drinking water system, the task of fetching water from streams or wells or the river remains a heavy and tedious task, almost always the responsibility of the women in the households, again no matter what ethnic group. In most cases, the closest water sources are streams and rivers downhill from the village, which means that the filled (and quite heavy) water containers must be trudged uphill to the houses.

#### 17.2.1.7 Collecting Forest Products

1114. The collection of several types of forest products for household use has already been mentioned: plants and animals for food; wood for fuel, for carving, as parts of houses and other woodwork; and bamboo and rattan for basketry.
1115. In addition a number of products are collected for sale. These include herbs, rattan, tree oils, and resins. Most of these products are collected and then sold mainly by women. Women also tend to gather NTFPs for household consumption and use, including foods, medicines and materials for utility items. Men tend to gather more utilitarian products, such as wood for construction, as well as products for sale.

#### 17.2.1.8 Trade

1116. Many of the households will sell some of their surplus crops or their livestock when they need cash. As mentioned earlier, they also sell surplus fish and forest products, as well as handicrafts, especially cloth goods.
1117. Sales of crops and livestock are generally done in or near the village. Middlemen come to the villages to purchase the surplus crops. Large livestock are generally sold in or near the community, when families are in need of a large amount of cash, for example due to rice shortages at the end of rainy season. Above all in 2LR, due to the restriction of bad road conditions, these sales vary according to meteorological seasons; next to variations due to different harvest seasons.
1118. Women are the primary sellers to the markets, and they are also the main purchasers of

household products for use in the home.

1119. Women are also the main operators of the small shops that are found in nearly all the villages in the study area. These small shops, about two or three in each community, are generally a small corner or addition to the family house. They carry soaps, detergents, toothpaste, canned foods, and other small sundries and household goods.

### 17.2.1.9 Summary

1120. A summary of the most common or frequent tasks of work and households, according to gender, and comparing between the three major ethnic divisions of the project area is presented in the table below.. A “+” in the table indicates primary or shared responsibility. A “-” indicates a lesser or minor role.

Activities	Responsibility					
	Khmu		Hmong		Lao Loum	
	Men	Women	Men	Women	Men	Women
Swidden Cultivation	+	+	+	-	+	+
Cutting Tree	+	+	+	-	+	-
Cleaning Undergrowth	-	+	-	+	-	+
Burning Fields	+	-	+	-	+	-
Sowing, Planting	+	+	+	+	+	+
Weeding	-	+	+	+	-	+
Transporting the Harvest	+	-	+	-	+	+
Paddy Cultivation	+	-	+	-	+	+
Constructing and Maintaining Fields	+	-	+	-	+	-
Permanent Fields	+	+	+	+	+	+
Ploughing	+	-	+	-	+	-
Sowing	+	+	+	+	+	+
Transplanting	+	+	+	+	+	+
Harvesting	+	+	+	+	+	+
Raising Buffaloes	-	+	+	+	+	+
Hunting	+	-	+	-	+	-
Gathering Forest Products	-	+	-	+	+	+
Fishing	+	-	+	+	+	-
Raising Pigs and Chicken	-	+	-	+	-	+
Cultivation of Fruits and Vegetation	-	+	-	+	+	+
House Building	+	-	+	-	+	-
Constructing the Building	+	-	+	-	+	-
Finding Materials	+	+	+	-	+	+
Basketry	+	-	+	-	+	-
Carry Transportation	+	-	+	-	+	-
Collective firewood and Water	-	+	-	+	+	+

Activities	Responsibility					
	Khmu		Hmong		Lao Loum	
	Men	Women	Men	Women	Men	Women
Washing Clothes	-	+	-	+	-	+
Pounding Rice	-	+	-	+	-	+
Cooking	-	+	-	+	-	+
Taking Care of Small Children	-	+	-	+	-	+
Ritual Sacrifices	+	-	+	-	+	-
Shamanism	+	-	+	-	+	+
+ = Major Participation in the Activity						
- = Minor Participation in the Activity						

Table 120: Summary of Gender-Divided Activities

### 17.2.2 Women's Health

1121. The key women health-related issues concern reproductive and maternal health. Maternal mortality rates have decreased considerably, from 650 in 100,000 live births in 1995 to 405 in 100,000 live births in 2005.<sup>49</sup> The disparities between urban and rural areas are also great, with rural women facing over 3 times the maternal mortality rates in childbirth than their urban counterparts, mainly because of the continuing lack of access to adequate health care in the more remote communities.<sup>50</sup>
1122. The general lack of health care in many communities in the project area also means there is a lack of adequate reproductive and maternal health care for many of them. From discussions with villagers, it was confirmed that most births do not have skilled professionals such as trained midwives in attendance.
1123. There is a strong correlation in Lao PDR between mother's education and child and infant mortality, with much lower mortality rates for children of higher educated women.<sup>51</sup> This is attributed in part to women living in urban areas or other places with greater access to education will also have greater access to professional health services. It is also due to the knowledge and ability of the mothers: those with higher education will be more aware of the steps needed to protect their children from illness, such as vaccinations, and the treatments needed if their children fall ill. There is also a strong correlation between age at first marriage and the rates of infant and child mortality, with those marrying younger having higher mortality rates of their children.<sup>52</sup> This is because those who marry younger tend to have less education and also tend to be from more remote areas.

<sup>49</sup> Government of Lao PDR and the UN, "Millennium Development Goals: Progress Report Lao PDR 2008" Vientiane: UN.

<sup>50</sup> Gender Resource Information and Development Centre, "Lao PDR Gender Profile." Vientiane: Lao Women's Union, November 2005, p. 63

<sup>51</sup> Ibid, p. 65

<sup>52</sup> Ibid.

1124. Sexually transmitted diseases are also of concern. While HIV/AIDS is still not very prevalent in Lao PDR, its incidence is increasing. Infections of women are also increasing, with prostitutes particularly vulnerable. While the Lao government has been making efforts at educating the population on how to protect themselves from HIV/AIDS, ignorance, poverty forcing women into prostitution, lack of use of condoms, sexual exploitation and trafficking, migratory work patterns, all contribute to increased risk of HIV/AIDS among women.

“By June 2007, the official cumulative number of HIV infected notification was 2,400, of whom 1,523 were known to be AIDS cases and 775 had already died. 58% of reported HIV cases were male and 42% female. More than 50% of those infected are between 20 and 39 years old. The major mode of transmission of HIV infection in Lao PDR is through heterosexual intercourse (85%).<sup>53</sup>

1125. HIV/AIDS infections among female sex workers increased from 0.9% in 2001 to 2.2% in 2004, with some provinces showing rates of up to 4% infection.<sup>54</sup>

### 17.2.3 Women’s Education

Women are also disadvantaged in education. Fewer female than male children are enrolled in schools than males. This is because parents do not value their daughter’s education as much as their son’s, and when extra labour is needed in homes it is the daughters who are usually the first to be kept from school. Communities in remote areas are also less likely to send their children to school, because of the lack of functioning schools in these areas, the problems of learning a language other than one’s mother tongue, if from an ethnic minority group, and because many parents do not see the value of a formal education. Even when they do see the value of formal education, the lack of cash to buy clothing, books, and other materials keeps many poor rural households from sending their children to school. When parents need to choose which children attend school with their limited resources, most will send their boys to school rather than their girls.

Female literacy greatly lags male literacy among all ethnic groups in Lao PDR. At the same time, the literacy rate in remote areas falls far behind that of urban areas, with female literacy even lower. A recent study showed that nearly 70 per cent of Hmong-lu Mien women were illiterate, and nearly 80 per cent of Chinese-Tibet women were illiterate.<sup>55</sup>

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<sup>53</sup> NCCA, UNGASS Country Report, Reporting Period January 2006 to December 2007, p. 4.

Downloaded from website:

[http://data.unaids.org/pub/Report/2008/lao\\_2008\\_country\\_progress\\_report\\_en.pdf](http://data.unaids.org/pub/Report/2008/lao_2008_country_progress_report_en.pdf)

<sup>54</sup> Ibid

<sup>55</sup> Elizabeth M. King, and Dominique van de Walle. “Schooling, Poverty, and Disadvantage in the Lao People’s Democratic Republic,” in *Exclusion, Gender and Education: Case Studies from the Developing World*, eds. M. Lewis and M. Lockheed. Washington, DC: Centre for Global Development, 2007.

### 17.2.4 Ownership Rights

1126. Under the laws of Lao PDR, both men and women enjoy equal access to land. Nevertheless, customary practices – principally through inheritance – over-ride official laws. The actual patterns of ownership depend on the traditional practices of the different ethnic groups. A detailed study has been developed by Mann/Luangkhot, outlining different aspects of ownership rights and heritage in various ethnic communities (see Figure 46)
1127. Under the bilinear inheritance practices of most of the majority Lao-Tai groups, both daughters and sons are able to inherit land and other property, with the decision on who inherits what depending on the parents. However, it is customary for the youngest daughter to inherit a larger portion of the family land and also the home since she usually remains behind to care for the parents, even after she is married. Also, it is tradition for newlywed couples to move into the house of the bride’s parents. The groom’s parents will give livestock and other moveable property to the new couple. The new couple will help on the bride’s family’s farm for a few years, until they set up their own household, usually after the birth of their first child. Traditionally, the parents of the wife will give the young couple land when they set up their own household. Both these traditional practices mean that women in these ethnic groups often inherit more land and have more control over the land than the men.
1128. Most of the other ethnic groups, including the Hmong and Khmu in the project area and the resettlement host communities, follow mostly patrilineal inheritance (see Figure 46). Property is passed from father to son. Newlywed couples move in with the husband’s family, and they often will remain there as part of an extended family, even after their own children are born. The men own and make decisions concerning the land. Few of the women inherit any land from their families.

Ethnic Group	Fixed assets (house & land)			Moveable assets (e.g. livestock & )	
	Youngest girl	Youngest boy	Women's share via Brideprice	Male siblings	Both Male & Female siblings
Brao	✓	X	X	X	✓
Trieng	X	✓	✓	X	✓
Hmong	X	✓	✓	✓	X
Khmu	X	✓	✓	X	✓
Tai Dam	X	✓	✓	✓	X

X = not practised      ✓ = practised

Figure 46: Gender Differences in Traditional Inheritance Practices (Sources: Mann/Luangkhot 2008)

1129. Official land registration has been found biased toward males, even in the Lao-Tai communities where females have inherited much of the land. As reported by the Gender Resource and Information Development (GRID) Centre, in a study of women’s rights to land, although the wives inherited 40 per cent of the land, only about 16 per cent of that land

was registered in the wives' names. In contrast, only some 18 per cent of the land was inherited from the husbands' families, but fully 58 per cent of the land was registered solely in the husband's names. Less than 10 per cent was registered in both names.<sup>56</sup> Based on this evaluation, the land titling project adjusted its strategy, leading to much more equity in tenure registration. Tenure registration figures post-2005 are much more balanced.

1130. The Project is aware of this bias of the bureaucracy toward the males of the households, and so will assure that the women in the households, especially in the resettled communities, are given adequate recognition of their rights to the land and adequate protection of their access to the new lands. Thereby, the influence of language knowledge has to be taken into consideration: as non-Lao Loum ethnic group women tend to speak less Lao, they might get bypassed by staff, which does not speak local languages and therefore just can communicate with the male heads of households.

### **17.2.5 Women and Decision-Making**

1131. Though at the national level, Lao PDR has made great strides in increasing women's participation in decision-making, with nearly one-quarter female representation in the national assembly, women's roles in civil service and in provincial, local and village administrations tend to be quite limited.
1132. Women in Lao PDR have traditionally deferred to men in public decision-making. This is even more the case for remote communities, where the women have less education and only limited contact with outsiders. Men tend to deal with government officials, especially as most government officials are also men. Non-Lao Loum ethnic group men are more likely than ethnic minority women to be able to speak Lao, so communications and public decision-making tend to go through men.
1133. There is evidence to suggest that when new technologies are introduced such as tractors, fertilizers, rice mills, etc. men not only take over the use of such new technology but they also decide how, when and for what such products should be used. Women seem to have a subtler, indirect influence on decision-making within the household in the Laos family structure. Furthermore, care needs to be taken when considering gender distribution of labour in rural households. For example, in one instance of agricultural advice in a highland project, nitrogen-fixing plants were planted to improve soil fertility, but without consulting women who were responsible for weeding. This resulted in a higher labour burden for women being imposed without their consent.
1134. The Lao Women's Union has played a key role in getting women in rural communities to have a greater role in public decision-making. However, in many communities, the only formal female representation remains that of the LWU.
1135. Village governance consists of a Village Headman, Deputy Village Headman, and members of the Local Militia, the Local Police, the Lao Youth Union, the Lao Women's Union, and the Front for Construction. While women are of course active in the LWU and younger women

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<sup>56</sup> GRID, "Lao PDR Gender Profile" 2005, p. 41

also involved in the Lao Youth Union, their roles or involvement in the other positions or groups is very limited.

### ***17.3 Gender Specific Social Impact and Risks Assessment***

1136. The Project is not expected to have major gender-specific adverse impacts, with three exceptions: the possibility of inadequate nutrition during the first years of the project, while the newly resettled villagers are getting used to their new homes and fields; possible health and social impacts of the workers' camp and the largely young male migrant workers during project construction; and failure to consider gender divisions of labour when preparing and implementing livelihoods support programs.
1137. The possibility of inadequate nutrition during the first years of resettlement would be of particular concern for pregnant women, women with infants and children, and those infants and children. The Project will make sure that any pregnant or nursing women have adequate health care and are able to receive adequate nutrition, since these are critical to the health of the children.
1138. The other areas of potential concern, that will need to be monitored closely, are the effect of construction and of the large number of workers on the villages immediately downstream and closest the construction area: the host communities and the resettlement site. The large influx of mostly young male workers could lead to conflicts between local communities and the workers over women the nearby villages. There may also be attempts to recruit local women as prostitutes for the workers.
1139. The Project may also reduce water availability during construction and is likely to affect water quality in the river during the first years of operation. This could affect some domestic water uses, in particular for Ban Hat Gniun, where people use water from the Nam Ngiep River for domestic uses and where contamination of the groundwater could affect their drinking water.
1140. It will be important for the Project to assure that women are assured their statutory rights to land and other resources. Households headed by women will be assured equal rights to any other household. This has been initiated by the project with compensation paid for roads impacts into bank accounts jointly held by both husband and wife, which has resulted in positive feedback from PAPs. Furthermore, statutory ownership and inheritance rights of women need to be protected, with the gender-neutral law of the country super ceding the gender-biased practices of some of the ethnic minorities. An information and communication program will be important for this purpose.

No	Category of Impacts	Description of Impacts
1	Impacts requiring compensation (REDP)	Loss of lands and resources may lead to inadequate nutrition. This is of particular concern for pregnant women, for nursing women, and for their infants and children.
2	Impacts related to	There is no direct adverse impact of the Project on women of

	Ethnic Groups (REDP)	the ethnic minorities. The Project can offer considerable opportunities for the women to improve their lives and condition.
3	Other impacts (SDP)	There will also be many positive impacts from the improved road, including easier access to market and services, from improved education and health care, and from skill training. The Gender Action Plan (GAP) provides details.

Table 121: Project Impacts Regarding Gender Topics

1141. Aside from this possible adverse impact, women are expected to be among the principal beneficiaries of the Project due to their roles in household provision and management. Fetching water, rice de-husking activities are back breaking and time consuming chores, traditional burdens reserved for women and children. Many diseases associated with unclean drinking water sources, such as parasitical infections, are also common in highland villages. Manual activities would be replaced by providing accessible and clean drinking water supply systems, contributing to reduction of carrying water, as well as to improved health. The number of women and children attending the school will be increased by providing good primary and secondary educational facilities such as school, teachers etc., and increased care and health information for women and children through the improvement of village and district health facilities.
1142. The Project offers furthermore considerable opportunities for women, if adequate social and economic development programs are directly tailored to their benefit.
1143. Under the Project, wives will be given the opportunity to secure equal tenure rights to the housing and lands that are granted the households in the resettlement areas. This then abides by the law of the land, and might help begin to give women some voice in their productive resources and asset ownership.
1144. Girls will be enabled to attend school in the same numbers as boys. The Project will work with the villages to help parents understand the need for education and the benefits of education in the new, changing social and economic world they are facing. Even if girls marry and become mainly housewives and mothers, education will help them and their families have better health and nutrition, potentially help with new income-earning activities, and so improve the standard of living for all in the family.
1145. In addition, older women will be given skill training in handicrafts and other economic activities they can do in their homes or as a group; furthermore, and above all, according marketing opportunities will be assessed and supported via the livelihood activity programs. Older women will also be given training in health care and sanitation, to improve conditions in the home and for their families.
1146. The Project will make concerted efforts to help lift women from disadvantaged conditions, to get them involved in training and in implementing new economic activities, and to give them a greater voice in decision-making in their communities.



1147. Further details and mitigation measures are outlined in the Gender Action Plan (SDP)

## CHAPTER 18 - Vulnerable Households

1148. As outlined in Chapter 3 and reprinted here, a vulnerable group is defined in Decree 192/PM: "These are distinct groups of people who might suffer disproportionately from the loss of fixed and movable assets, other assets and production base or face the risk of being marginalized from the effects of resettlement and specifically include:

- divorced or widowed female headed households with dependents and low income;
- households with disabled or invalid persons;
- households with persons falling under the generally accepted indicator for poverty as defined by the Ministry of Labour and Social Welfare, or the landless;
- elderly households with no means of support." (Article 3i)

1149. ADB refers to potentially vulnerable groups in SPS SR2, listing "especially those below the poverty line, the landless, the elderly, women and children, and Indigenous Peoples, and those without legal title to land".

### *18.1 Vulnerable Households in the Project Area*

1150. In the project area, a series of vulnerable households have been identified. Furthermore, communities will constantly be monitored on vulnerable households and these households will be given special attention too.

1151. The Project follows both standards, putting them into the Project context. Four types of vulnerability are addressed by the overall design of the social programs: Indigenous People/Ethnic Groups, PAPs without legal titles to land or property, Women, and Households below the Poverty Line.

1152. Additionally to these categories of vulnerability, the Project uses the following context-adapted definition of vulnerable groups other than these groups, based on outlined national and international standards:

1153. Vulnerable Households are households who might suffer disproportionately from the loss of fixed and movable assets, other assets, and production base; or face the risk of being marginalized from the effects of resettlement; and specifically include:

- i. Single female headed households with dependents and low income;
- ii. Households whose members are socially stigmatized as a result of traditional or cultural bias inside the community
- iii. Households living in poverty with not enough labour to make use of general pro-poor activities outlined above;
- iv. Landless households with no alternative sustainable income from regular employment or businesses
- v. Elderly households with no means of support
- vi. Households with disabled or invalid persons;
- vii. Households with members with severe and long-term diseases having a

- substantial impact on the households productivity and/or expenditure
- viii. Households with members of households addicted to substance abuse.

Zone	3			5				2LR				2UR			Total
	HSK	HGN	THH	SPY	NYK	SPP	HPM	Pou	HSK	PHT					
1. Head of household is woman	2	1	0	5	1	1	0	6	0	4	20				
2. Head of household is over 60	0	0	1	15	14	3	2	0	4	5	44				
3. Head of household is under 16	1	0	1	0	0	0	0	0	0	0	2				
4. Head of household is disabled	0	1	0	3	8	3	5	6	2	0	28				
5. Household with disabled person	1	3	1	14	15	8	2		2	3	49				
6. Head of household is mentally disabled	1	0	0	4	0	1	2	0	0	0	8				
7. Household with mentally disabled person	1	1	1	8	1	1	0	0	2	1	16				
8. Household with only one member	1	0	1	0	1	0	0	0	0	1	4				
9. Households living below the poverty line	6	0	2	11	18	11	7	38	17	19	129				
10. Landless households with no alternative sustainable income	0	0	1	0	0	0	0	0	0	0	1				

Table 122: Vulnerable person profile of each village (Source: Field Visit 2013)

## 18.2 Youth and Children

1154. In the project area youths and children face challenging issues on health, education and vocational skills.
1155. Health: most of the youths and children are not aware of basic hygiene, such as personal cleanliness, cleanliness in the kitchen, or around the residence. Food hygiene and safety is furthermore important.
1156. Education: as discussed earlier, the project areas facing the most severe impacts (Sub Zone 2LR, Zone 3 and Zone 5) have just basic school facilities. Most education provided in the area is at the primary school level, with half of the schools providing only the first 2 to 3 years of education. Only one village in these areas has a lower secondary school. Drop-out-rates are high due to a variety of reasons; with economic reasons one of the most important ones.

1157. Vocational skills: in the past, youth and children learned livelihood skills from their parents or elders by helping with work in the fields or in the forests or on the river, or by helping around the house with housework, cooking, or handicrafts. However, in recent years, social and economic changes have led to a decline in traditional forms of subsistence agriculture and livelihoods, with new land-based and also non-land-based occupations and income generating activities. With few parents having skills for these new activities, the youth also face the new social and economic conditions without the skills they need to deal with the new situation.

### ***18.3 Social Impacts and Risks Assessment***

1158. Vulnerable households face the same impacts as other people in the Project Impact Zone. However, they are more sensitive for external shocks and therefore all the impacts described above can have a stronger impact on their live. Therefore, national and international standards as well as the Project Policy request special attention for vulnerable households.

1159. This is not necessarily just a quantitative increase of support, but also a qualitative adaptation of programs, reaching from different toilets in resettlement houses via alternative livelihood activity options to consultation specifically addressing vulnerable households.

1160. As discussed before, impacts and mitigation measures for potential vulnerability of ethnic groups and women are outlined in Chapters 16 and 17, with mitigation measures in the REDP and SDP.

1161. Indigenous People/Ethnic Groups form the majority of PAPs addressed in the REDP. Therefore, SPS SR3 standards have been integrated as cross-cutting principles and additionally a specific Ethnic Development Plan has been prepared with measures to address related vulnerabilities (see REDP Chapter 7).

1162. The issue of PAPs without legal title to land or property is addressed by acknowledging customary rights to lands with no request for legal titles for asset registration and compensation; furthermore, for replacement land, secure tenure will be ensured by supporting GoL in the provision of land titles for replacement land and housing – an entitlement of PAPs acknowledged by the Project.

1163. Women are among the most vulnerable in remote areas as outlined in the previous Chapter 17, and cultural characteristics as second and third wives further increases risks, such as regarding land tenure. Therefore, the Project has prepared a Gender Action Plan, which outlines specific measures, which are integrated in the REDP as well, for example cash compensation transfer into joint bank accounts for male and female heads of households.

1164. Households below poverty line will be brought above poverty line in compliance with the poverty elimination test outlined in the Concession Agreement and the REDP. A key measure is to allocate paddy field and cash crop land in the resettlement site of an appropriate minimum size to households with no paddy field and cash crop land in the original village. This does not reduce entitlements of rich households with land for compensation. Details can be found in the REDP.

1165. For the remaining vulnerable groups, specific activities will be developed on basis of the overall mitigation measures presented below. The Project’s vulnerability officer will assess the needs and potential activities together with each individual household and will coordinate with the education, health, and livelihood teams of the Project to provide sustainable and livelihood improving support.

Vulnerability	Impact	Key Measures	Described in...
Indigenous People (further details in Chapter 16)	Resettlement	Appropriate Consultation Measures; Broad Community Support Assessment	EDP / REDP
	Changed Livelihood Structures	Community-Driven Livelihood Activities	LIRP / EDP
	Access to Urban Areas / Integration into	Cultural Preservation measures	EDP / REDP SDP
	Construction	Early resettlement of Hatsaykham Social Management and Mitigation Program	RAP Zone 3 PHAP / SDP
Women (further details in Chapter 17)	Resettlement	Appropriate Consultation Measures including Focus-Group Discussions New infrastructure including water supply to each house Health Program	REDP GAP / SDP PHAP/SDP
	Changed Livelihood Structures	Community-Driven Livelihood Activities	LIRP / REDP GAP / SDP
	Construction	Early resettlement of Hatsaykham Social Management and Mitigation Program	RAP Zone 3 PHAP / SDP
PAPs without land titles	Land Acquisition	Customary land use rights will be acknowledged; no formal documentation necessary	Entitlement Principles / REDP
Households below poverty line	Land Acquisition and Resettlement	Provision of appropriate minimum paddy rice fields, garden land, and appropriate houses on national standard in the designated resettlement site	REDP
Single female headed households with dependents and low income;		Appropriate livelihood restoration programs Poverty Elimination Test Extended transitional support	LIRP / REDP
		Appropriate livelihood restoration programs acknowledging lack of labour	

Vulnerability	Impact	Key Measures	Described in...
Households whose members are socially stigmatized as a result of traditional or cultural bias inside the community		Extended transitional support	LIRP / REDP
		Cultural awareness program	SDP
Households living in poverty with not enough labour to make use of general pro-poor activities outlined above;		Extended transitional support	REDP
		Cooperation with relatives on finding sustainable solutions	
Landless households with no alternative sustainable income from regular employment or businesses		Provision of land in the resettlement site	REDP
		Appropriate livelihood restoration programs	
Elderly households with no means of support		Extended transitional support	LIRP / REDP
	Appropriate livelihood restoration programs		
	Cooperation with relatives on finding sustainable solutions		
Households with disabled or invalid persons;	Extended transitional support	LIRP / REDP	
	Appropriate livelihood restoration programs		
	Health support	PHAP/SDP	
	Adaptations of resettlement housing		
Households with members with severe and long-term diseases having a substantial impact on the households productivity and/or expenditure	Extended transitional support	LIRP / REDP	
	Appropriate livelihood restoration programs	PHAP/SDP	
Households with members of households addicted to substance abuse.	Health support	LIRP / REDP	
	Extended transitional support	PHAP/SDP	

Table 123: Impact on Vulnerability and Overall Mitigation Measures

## CHAPTER 19 - Summary

1166. Social impacts resulting from the Project have been discussed in this Report. This impact assessment provides the background for various mitigation plans, whether plans to compensate for losses or social and economic development plans for the affected people. It also includes the expected social impacts from other major activities related to the project: the transmission lines and the access roads. Any delays in construction, or alterations in road or transmission line alignments, may alter the scope of impacts.

1167. Table 125 and Table 126 provide a summary of the social impacts, which were assessed and described in detail in earlier chapters, based in large part on the zones where those impacts are to occur. Based on this information, the following table has been developed, providing a summary of social impacts of NNP1:

Impact Categories	Project Impacts	Measures in...
1. Ethnicity & Cultural Beliefs and Practices	<ul style="list-style-type: none"> <li>Loss of Graves in 2LR</li> <li>Closer access to urban areas due to resettlement and road construction</li> </ul>	EDP / REDP
2. Ethnicity & Resettlement	<ul style="list-style-type: none"> <li>Livelihood changes (details see below)</li> <li>Use of appropriate consultations methodology necessary for ethnic groups, women, and vulnerable groups</li> </ul>	EDP + LIRP /REDP
3. Ethnicity & Tenure and property rights	<ul style="list-style-type: none"> <li>Acknowledgement of customary land use rights for all land acquisition</li> <li>Land titling for all replacement land</li> </ul>	REDP
4. Ethnicity & Traditions	<ul style="list-style-type: none"> <li>Closer access to urban areas</li> <li>Livelihood Changes</li> <li>Changes of social structures (see below)</li> <li>Cultural awareness and preservation programs</li> </ul>	EDP/REDP SDP
5. Ethnicity & Cultural Differences	<ul style="list-style-type: none"> <li>5 villages joining in resettlement site</li> <li>Cooperation with host communities</li> <li>Independent administrative unit in the resettlement site</li> <li>Workers and camp followers in construction site</li> <li>Avoided resettlement reduces the risk of cultural conflicts in 2UR</li> </ul>	EDP/REDP PHAP/SDP
6. Gender & Work	<ul style="list-style-type: none"> <li>Improved infrastructure including water supply</li> <li>LIRP Programs for Women</li> </ul>	REDP GAP/SDP
7. Women's Health	<ul style="list-style-type: none"> <li>Improvement through Health Program</li> <li>Nutritional risks in transition period of resettlers</li> </ul>	PHAP/SDP GAP/SDP

Impact Categories	Project Impacts	Measures in...
8. Women's Education	<ul style="list-style-type: none"> <li>• Occupational Skill Training</li> <li>• Education Program with Gender-Quota</li> <li>• LIRP Programs</li> </ul>	GAP/SDP Community Development / SDP
9. Women's Ownership Rights	<ul style="list-style-type: none"> <li>• Joint Spousal Authorization and Receipt</li> <li>• Entitlements and ownership rights for second and third wives</li> <li>• Focus-Group Discussions and appropriate language use during consultations</li> </ul>	REDP
10. Women & Decision-Making	<ul style="list-style-type: none"> <li>• Active inclusion of women in consultations</li> <li>• Inclusion in local Project institutions (including grievance)</li> </ul>	REDP
11. Impact on Poverty	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> <li>• LIRP Programs</li> <li>• Poverty Elimination Test</li> <li>• Land Allocation in resettlement site for landless PAPs</li> </ul>	REDP
12. Impact on Vulnerable Households	<ul style="list-style-type: none"> <li>• LIRP Programs including transitional allowance</li> <li>• Improvement through Health Program</li> <li>• Adaptation of resettlement infrastructure</li> </ul>	LIRP / REDP PHAP/SDP
13. Impact on Crop Cultivation	<ul style="list-style-type: none"> <li>• Adaptation of cultivation to geographic and soil condition of resettlement site for 2LR</li> <li>• Adaptation to irrigated paddy</li> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Cash crops more important due to market access</li> <li>• Usage of Drawdown-Zone for 2UR</li> <li>• Potential of irrigation and land re-allocation in 2UR</li> <li>• Limitation on use of chemical inputs in the Watershed</li> </ul>	LIRP/REDP
14. Impact on Livestock	<ul style="list-style-type: none"> <li>• Livestock a preferential livelihood option</li> <li>• New pasture development</li> <li>• Livelihood programs with trials on type of livestock and techniques of raising and breeding</li> <li>• Vaccination program for livestock</li> <li>• Transport of livestock for 2LR</li> </ul>	LIRP/REDP
15. Impact on Forest Utilization	<ul style="list-style-type: none"> <li>• New forestry areas / loss of access for resettlers</li> <li>• Limitation/management on forest use on left-bank side of Nam Ngiep</li> <li>• Limitation/management of existing plantations in the watershed</li> <li>• Risk of illegal logging</li> <li>• Sustainable use of Watershed Management</li> </ul>	LIRP/REDP  EMP



Impact Categories	Project Impacts	Measures in...
	Area	
16. Impact on Fisheries	<ul style="list-style-type: none"> <li>• Potential of increased fish populations in the flooded plain at the upper edge of the reservoir;</li> <li>• Access to reservoir</li> <li>• Risk of opening of the reservoir for outsiders</li> <li>• Change from river to reservoir fishing</li> <li>• Sharing of fish resources with host communities necessary</li> </ul>	LIRP/REDP
17. Impact on Other Livelihood Activities including Business and Employment	<ul style="list-style-type: none"> <li>• Increasing importance of business and employment</li> <li>• Livelihood programs incl. skill development, microfinance, and marketing support</li> <li>• Project employment opportunities</li> </ul>	LIRP/REDP Education/SDP LMP/SDP
18. Impact on Tenure Security	<ul style="list-style-type: none"> <li>• Provision of land titles for replacement land</li> <li>• Provision of land titles for community land</li> <li>• Lower risk of future involuntary resettlement as resettlement site close to dam site</li> </ul>	Entitlement Policy /REDP
19. Impact on Expenditure patterns	<ul style="list-style-type: none"> <li>• Change of livelihoods with increased cash income lead to more market-related expenditures</li> <li>• Integration into Market economy</li> <li>• Cash compensation values used for investment and consumption</li> </ul>	LIRP/REDP Community Development / SDP
20. Impact on Population profile	<ul style="list-style-type: none"> <li>• Population growth through reduction of out-migration and in-migration to due new opportunities</li> <li>• Population reduction due to self-resettlement option</li> </ul>	LIRP/REDP
21. Impact on Influx of Outsiders, including tourism	<ul style="list-style-type: none"> <li>• Project employees will live in the area</li> <li>• In-migration of workers and camp-followers</li> <li>• Tourists might explore the dam site and reservoir, which might be used as a picnic-site (see Nam Ngum 1)</li> </ul>	SDP
22. Social Relations	<ul style="list-style-type: none"> <li>• Stronger integration of 5 villages</li> <li>• Market economy strengthens younger generation</li> <li>• Market economy changes social strata and necessary skills</li> <li>• Access to urban areas and stronger integration into national community changes social relations</li> </ul>	EDP/REDP Community Development / SDP

Impact Categories	Project Impacts	Measures in...
23. Social Disturbances	<ul style="list-style-type: none"> <li>• Construction site and camp followers risk social disturbance</li> <li>• Closer access to urban area might lead to social disturbances</li> <li>• Cash compensation risky for gamblers and increased expenditures on alcohol, tobacco &amp; leisure activities</li> </ul>	EDP/REDP PHAP/SDP Community Development / SDP
24. Local authorities	<ul style="list-style-type: none"> <li>• Strengthening of grievance institutions</li> <li>• Need for authorities to cooperate with the Project</li> <li>• Strengthening of capacities of police and health care personnel</li> <li>• Capacity improvement via cooperation in project activities, e.g. agriculture, and training for health staff</li> <li>• Scholarship program will allow hiring of qualified staff</li> </ul>	PHAP/SDP Community Development / SDP
25. Impact on Health including Nutrition	<ul style="list-style-type: none"> <li>• Changes of nutrition due to changes of fisheries</li> <li>• Health Program</li> <li>• Change of nutrition</li> <li>• Stress of resettlement</li> <li>• STD and camp followers issues</li> </ul>	PHAP/SDP
26. Impact on Education	<ul style="list-style-type: none"> <li>• Education Program including scholarships</li> <li>• Provision of new school facilities and equipment</li> </ul>	REDP  Community Development / SDP
27. Impact on Safety	<ul style="list-style-type: none"> <li>• Risk of theft increases with Market economy and urbanization</li> </ul>	LMP / SDP Community Development / SDP
28. Impact on Access to Public Infrastructure	<ul style="list-style-type: none"> <li>• New public infrastructure including school, health centre, village hall, bus station, market in the resettlement site</li> </ul>	REDP
29. Impact on Access to Information and Services	<ul style="list-style-type: none"> <li>• Strong improvement of access to information and services in the resettlement site</li> <li>• Increasing communication via technical means</li> </ul>	REDP  Community Development / SDP
30. Impact on Access to Urban Areas	<ul style="list-style-type: none"> <li>• Reduction of travel time to next urban area from several hours to 30-45 minutes</li> <li>• All-weather and all-season access to urban areas</li> <li>• Regular bus services</li> </ul>	REDP
31. Impact on Youth	<ul style="list-style-type: none"> <li>• Livelihood opportunities via livelihood program</li> <li>• Cultural and health awareness</li> </ul>	REDP  Community

Impact Categories	Project Impacts	Measures in...
	<ul style="list-style-type: none"> <li>• Education Program</li> <li>• Urbanization might lead to changes of aspirations and role models</li> <li>• Strengthened role within the families</li> </ul>	Development / SDP

Table 124: Overall social impacts of the NNP1 Hydropower Project

1168. Based on this Social Impact Assessment the Project has developed the Resettlement and Ethnic Development Plan as well as the Social Development Plan. These plans with their sub-plans use the information derived from this Social Impact Assessment to a) establish mitigation measures for adverse impacts of the Project and b) initiate and support communities towards a strong and sustainable development of their livelihoods.

1169. Additionally to measures addressing expected impacts, the Project implements a broad range of monitoring activities to identify unforeseen impacts and develop programs according to the adaptive management principle followed by NNP1. It should be once more noted that the Project's mitigation measures against adverse impacts are limited by scope.

1170. The following list provides a broad overview on monitoring activities starting in 2014:

- Socioeconomic monitoring including income monitoring
- Educational monitoring
- Health monitoring
- Fish-Catch-Monitoring
- Labour Monitoring
- Camp-followers monitoring
- Environmental monitoring (Details in the environmental documents)

1171. Further details are outlined in the REPD and SDP.

Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
1. Ethnicity & Cultural Beliefs and Practices	No Impact	No Impact	<ul style="list-style-type: none"> <li>• Loss of Graves</li> <li>• Closer access to urban areas</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of Graves</li> <li>• Closer access to urban areas</li> </ul>
2. Ethnicity & Resettlement			<ul style="list-style-type: none"> <li>• Livelihood changes (details see below)</li> <li>• Use of appropriate consultations methodology</li> </ul>	
3. Ethnicity & Tenure and property rights			<ul style="list-style-type: none"> <li>• Acknowledgement of customary land use rights</li> <li>• Land titling</li> </ul>	
4. Ethnicity & Traditions			<ul style="list-style-type: none"> <li>• Closer access to urban areas</li> <li>• Livelihood Changes</li> <li>• Changes of social structures</li> </ul>	
5. Ethnicity & Cultural Differences			<ul style="list-style-type: none"> <li>• Avoided resettlement reduces the risk of cultural conflicts</li> </ul>	<ul style="list-style-type: none"> <li>• 5 villages joining in resettlement site</li> <li>• Cooperation with host communities</li> <li>• Independent administrative unit</li> <li>• Workers and camp followers in construction site</li> </ul>
6. Gender & Work	No Impact	<ul style="list-style-type: none"> <li>• Improved infrastructure including water supply</li> <li>• LIRP Programs for Women</li> </ul>		
7. Women's Health	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> <li>• Nutritional risks in transition period</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>
8. Women's Education	No Impact	<ul style="list-style-type: none"> <li>• Occupational Skill Training</li> <li>• Education Program with Gender-Quota</li> <li>• LIRP Programs</li> </ul>		
9. Women's Ownership Rights	Focus-Group Discussions and appropriate language use during	<ul style="list-style-type: none"> <li>• Joint Spousal Authorization and Receipt</li> <li>• Entitlements and ownership rights for second and third wives</li> <li>• Focus-Group Discussions and appropriate language use during consultations</li> </ul>		

Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
	consultations			
<b>10. Women &amp; Decision-Making</b>	<ul style="list-style-type: none"> <li>• Active inclusion of women in Consultation</li> <li>• Inclusion in local Project institutions (including grievance)</li> </ul>			
<b>11. Impact on Poverty</b>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> <li>• LIRP Programs</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> <li>• LIRP Programs Land Allocation</li> </ul>	
<b>12. Impact on Vulnerable Households</b>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> <li>• Improvement through Health Program</li> <li>• Adaptation of resettlement infrastructure</li> </ul>	
<b>13. Impact on Crop Cultivation</b>	<ul style="list-style-type: none"> <li>• No major impact</li> <li>• Role Model of 2UR</li> <li>• Limitation on use of chemical inputs close to the Watershed</li> </ul>	<ul style="list-style-type: none"> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Usage of Drawdown-Zone</li> <li>• Potential of irrigation and land re-allocation</li> </ul>	<ul style="list-style-type: none"> <li>• Adaptation of cultivation to geographic and soil condition of resettlement site</li> <li>• Adaptation to irrigated paddy</li> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Cash crops more important due to market access</li> </ul>	<ul style="list-style-type: none"> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Cash crops more important due to market access</li> <li>• Adaptation to irrigated paddy</li> </ul>
<b>14. Impact on Livestock</b>	<ul style="list-style-type: none"> <li>• No impact</li> <li>• Role Model of 2UR</li> <li>• Sustainable use of Watershed Management Area</li> </ul>	<ul style="list-style-type: none"> <li>• Livelihood programs with trials on type of livestock and techniques of raising and breeding</li> <li>• Livestock a preferential livelihood option, i.e. increase in livestock and need of increased pasture areas</li> </ul>	<ul style="list-style-type: none"> <li>• New pasture development</li> <li>• Livelihood programs with trials on type of livestock and techniques of raising and breeding</li> <li>• Livestock a preferential livelihood option</li> <li>• Vaccination program for livestock</li> <li>• Transport of livestock</li> </ul>	<ul style="list-style-type: none"> <li>• New pasture development</li> <li>• Livelihood program on livestock development</li> <li>• Vaccination program for livestock</li> <li>• Livestock a preferential livelihood option</li> <li>• Vaccination program for livestock</li> </ul>

Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
<b>15. Impact on Forest Utilization</b>	<ul style="list-style-type: none"> <li>• No impact</li> <li>• Sustainable use of Watershed Management Area</li> </ul>	<ul style="list-style-type: none"> <li>• Minor impact due to land loss in the reservoir area</li> </ul>	<ul style="list-style-type: none"> <li>• New forestry areas / loss of access</li> <li>• Limitation/management on forest use on left-bank side of Nam Ngiep</li> <li>• Limitation/management of existing plantations in the watershed</li> <li>• Risk of illegal logging</li> </ul>	<ul style="list-style-type: none"> <li>• Limitation/management on forest utilization</li> </ul>
<b>16. Impact on Fisheries</b>	<ul style="list-style-type: none"> <li>• No immediate impact expected</li> <li>• Monitoring necessary</li> <li>• Impact from upstream hydropower projects possible</li> </ul>	<ul style="list-style-type: none"> <li>• Change from river to reservoir fishing</li> <li>• Potential of increased fish populations in the flooded plain at the upper edge of the reservoir;</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing of fish resources with host communities necessary</li> <li>• Access to reservoir</li> <li>• Change from river to reservoir fishing</li> <li>• Opening of the reservoir for outsiders</li> </ul>	<ul style="list-style-type: none"> <li>• Sharing of fish resources with new resettlers necessary</li> <li>• Access to reservoir</li> <li>• Change from river to reservoir fishing</li> </ul>
<b>17. Impact on Other Livelihood Activities including Business and Employment</b>	<ul style="list-style-type: none"> <li>• Eventually opportunities from WSA activities</li> <li>• Increased activities in 2UR will provide business opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing importance due to livelihood adaptation</li> <li>• Livelihood programs incl. skill development, microfinance, and marketing support</li> <li>• Project employment opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing importance due to market access</li> <li>• Livelihood programs incl. skill development, microfinance, and marketing support</li> <li>• Project employment opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing importance due to market access</li> <li>• Livelihood programs incl. skill development, microfinance, and marketing support</li> <li>• Project employment opportunities</li> <li>• Business opportunities at construction site</li> </ul>
<b>18. Impact on Tenure Security</b>	<ul style="list-style-type: none"> <li>• No impact</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of land titles for replacement land</li> <li>• Indirect impact on other owners by strengthening titling process in the area</li> <li>• Enhancement of land market</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of land titles for replacement land</li> <li>• Provision of land titles for community land</li> <li>• Low risk of future involuntary resettlement as resettlement site close to dam site</li> </ul>	<ul style="list-style-type: none"> <li>• Provision of land titles for replacement land</li> <li>• Provision of land titles for community land</li> </ul>
<b>19. Impact on Expenditure patterns</b>	<ul style="list-style-type: none"> <li>• No impact</li> </ul>	<ul style="list-style-type: none"> <li>• Integration into Market economy</li> <li>• Change of livelihoods with increased cash income lead to more market-related expenditures</li> <li>• Cash compensation values used for investment and</li> </ul>	<ul style="list-style-type: none"> <li>• Change of livelihoods with increased cash income lead to more market-related expenditures</li> <li>• Integration into Market economy</li> <li>• Cash compensation values used for investment and consumption</li> </ul>	<ul style="list-style-type: none"> <li>• Change of livelihoods with increased cash income lead to more market-related expenditures</li> <li>• Integration into Market economy</li> <li>• Cash compensation values used for investment and consumption</li> </ul>

Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
		consumption		
20. Impact on Population profile	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Potential increase of squatters</li> <li>Population growth through reduction of out-migration</li> </ul>	<ul style="list-style-type: none"> <li>Potential increase of squatters</li> <li>Population growth through reduction of out-migration</li> <li>Population reduction due to self-resettlement option</li> </ul>	<ul style="list-style-type: none"> <li>Potential increase of squatters</li> <li>Population growth through reduction of out-migration</li> <li>Population reduction due to self-resettlement option</li> </ul>
21. Impact on Influx of Outsiders, including tourism	<ul style="list-style-type: none"> <li>Project employees will live in the area</li> <li>Limited influx of labourers</li> </ul>	<ul style="list-style-type: none"> <li>Project employees will live in the area</li> <li>Limited influx of labourers</li> </ul>	<ul style="list-style-type: none"> <li>Project employees will live in the area</li> <li>Tourists might explore the dam site and reservoir, which might be used as a picnic-site (see Nam Ngum 1)</li> <li>In-migration of workers and camp-followers</li> </ul>	<ul style="list-style-type: none"> <li>Project employees will live in the area</li> <li>In-migration of workers and camp-followers</li> <li>Tourists might explore the dam site and reservoir, which might be used as a picnic-site (see Nam Ngum 1)</li> </ul>
22. Social Relations	No impact	<ul style="list-style-type: none"> <li>Limited due to the avoidance of resettlement</li> </ul>	<ul style="list-style-type: none"> <li>Stronger integration of 5 villages, while potential changes of relations to neighbours</li> <li>Market economy strengthens younger generation and changes social strata and necessary skills</li> <li>Change of geographic boundaries of social network</li> </ul>	<ul style="list-style-type: none"> <li>Stronger integration of 5 villages</li> <li>Market economy strengthens younger generation</li> <li>Cash-economy changes social strata and necessary skills</li> <li>Access to urban areas and stronger integration into national community changes social relations</li> </ul>
23. Social Disturbances		<ul style="list-style-type: none"> <li>Cash compensation risky for gamblers, more spending on alcohol, tobacco &amp; leisure activities</li> </ul>	<ul style="list-style-type: none"> <li>Closer access to urban area might lead to social disturbances</li> <li>Cash compensation risky for gamblers, more spending on alcohol, tobacco &amp; leisure activities</li> </ul>	<ul style="list-style-type: none"> <li>Construction site and camp followers risk social disturbance</li> <li>Closer access to urban area might lead to social disturbances</li> <li>Cash compensation risky for gamblers, more spending on alcohol, tobacco &amp; leisure activities</li> </ul>
24. Local authorities	<ul style="list-style-type: none"> <li>Improved capacities of district staff trained via 2UR programs</li> </ul>	<ul style="list-style-type: none"> <li>Capacity improvement via cooperation in project activities, e.g. agriculture, and training for health staff</li> <li>Scholarship program will</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of grievance institutions</li> <li>Share of power between integrated villages</li> <li>Capacity improvement via</li> </ul>	<ul style="list-style-type: none"> <li>Strengthening of grievance institutions</li> <li>Need for authorities to cooperate with the Project</li> <li>Strengthening of capacities of police and health care personnel</li> </ul>

Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
		allow hiring of qualified staff	cooperation in project activities, e.g. agriculture, and training for health staff • Scholarship program will allow hiring of qualified staff	• Capacity improvement via cooperation in project activities, e.g. agriculture, and training for health staff • Scholarship program will allow hiring of qualified staff
25. Impact on Health including Nutrition	<ul style="list-style-type: none"> <li>• Health Program</li> <li>• Changes of nutrition due to changes of fisheries</li> </ul>	<ul style="list-style-type: none"> <li>• Changes of nutrition due to changes of fisheries</li> <li>• Health Program</li> <li>• Unexpected impact on rice sufficiency</li> </ul>	<ul style="list-style-type: none"> <li>• Changes of nutrition due to changes of fisheries</li> <li>• Health Program</li> <li>• Change of nutrition</li> <li>• Stress of resettlement</li> </ul>	<ul style="list-style-type: none"> <li>• Changes of nutrition due to changes of fisheries</li> <li>• Health Program</li> <li>• Change of nutrition</li> <li>• Stress of resettlement</li> <li>• STD and camp followers issues</li> </ul>
26. Impact on Education	<ul style="list-style-type: none"> <li>• Skill development and cultural awareness programs enhance knowledge</li> <li>• Learning from studying 2UR livelihood programs</li> </ul>	<ul style="list-style-type: none"> <li>• Education Program including scholarships</li> <li>• Provision of repaired/upgraded school facilities and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Education Program including scholarships</li> <li>• Provision of new school facilities and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Education Program including scholarships</li> <li>• Provision of new school facilities and equipment</li> </ul>
27. Impact on Safety		<ul style="list-style-type: none"> <li>• Risk of theft increases with Market economy</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of theft increases with Market economy and urbanization</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of theft increases with Market economy and urbanization</li> <li>• Risk of drug abuse due to access to camp followers</li> </ul>
28. Impact on Access to Public Infrastructure		<ul style="list-style-type: none"> <li>• Improved public infrastructure</li> <li>• Easier access to the right bank side</li> </ul>	<ul style="list-style-type: none"> <li>• New public infrastructure including school, health centre, village hall, bus station, market in the resettlement site</li> </ul>	<ul style="list-style-type: none"> <li>• New public infrastructure including school, health centre, village hall, bus station, market in the resettlement site</li> </ul>
29. Impact on Access to Information and Services	No impact	<ul style="list-style-type: none"> <li>• Improved services due to activities out of the livelihood programs</li> </ul>	<ul style="list-style-type: none"> <li>• Strong improvement of access to information and services in the resettlement site</li> <li>• Increasing communication via technical means</li> </ul>	<ul style="list-style-type: none"> <li>• Improved services due to activities out of the livelihood programs and development of small-town-sized resettlement site</li> </ul>
30. Impact on Access to Urban Areas		<ul style="list-style-type: none"> <li>• Bus stops</li> <li>• Market stalls along the road</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of travel time to next urban area from several hours to 30-45 minutes</li> <li>• All-weather and all-season access to</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction of travel time to next urban area from two hours to 30-45 minutes</li> <li>• All-weather and all-season access to urban areas</li> </ul>



Project Impact	Zone 1	Zone 2UR	Zone 2LR	Zone 3
			urban areas • Regular bus services	
31. Impact on Youth	• Improved health • Cultural awareness	• Livelihood opportunities via livelihood program • Cultural and health awareness • Education Program	• Livelihood opportunities via livelihood program • Cultural and health awareness • Education Program • Urbanization might lead to changes of aspirations and role models • Strengthened role within the families	• Livelihood opportunities via livelihood program • Cultural and health awareness • Education Program • Urbanization might lead to changes of aspirations and role models • Strengthened role within the families

Table 125: Summary of Social Impacts Zones 1, 2UR, 2LR, and 3

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
1. Ethnicity & Cultural Beliefs and Practices	No Impact	No Impact	No Impact	No Impact
2. Ethnicity & Resettlement				
3. Ethnicity & Tenure and property rights			• Acknowledgement of customary land use rights • Land titling	
4. Ethnicity & Traditions			No Impact	

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
5. Ethnicity & Cultural Differences		<ul style="list-style-type: none"> <li>• New resettlers at the right bank site of the river</li> <li>• Share of public infrastructure</li> <li>• Share of fisheries</li> </ul>	<ul style="list-style-type: none"> <li>• Workers and camp followers in construction site</li> </ul>	
6. Gender & Work	<ul style="list-style-type: none"> <li>• Improved water supply</li> </ul>	<ul style="list-style-type: none"> <li>• Improved infrastructure including water supply</li> <li>• LIRP Programs for Women</li> </ul>	No Impact	No Impact
7. Women's Health	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>		
8. Women's Education	No Impact	<ul style="list-style-type: none"> <li>• Occupational Skill Training</li> <li>• Education Program with Gender-Quota</li> <li>• LIRP Programs</li> </ul>		
9. Women's Ownership Rights	<ul style="list-style-type: none"> <li>• Focus-Group Discussions and appropriate language use during consultations</li> </ul>	<ul style="list-style-type: none"> <li>• Joint Spousal Authorization and Receipt</li> <li>• Focus-Group Discussions and appropriate language use during consultations</li> </ul>		
10. Women & Decision-Making	<ul style="list-style-type: none"> <li>• Active inclusion of women in Consultation</li> <li>• Inclusion in local Project institutions (including grievance)</li> </ul>			
11. Impact on Poverty	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> </ul>
12. Impact on Vulnerable Households	<ul style="list-style-type: none"> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> <li>• Improvement through Health Program</li> </ul>	<ul style="list-style-type: none"> <li>• LIRP Programs</li> </ul>
13. Impact on Crop Cultivation	<ul style="list-style-type: none"> <li>• If Nam Ngiep used for irrigation, adaptation to different water levels necessary; potentially more water during dry season</li> </ul>	<ul style="list-style-type: none"> <li>• Livelihood programs with trials on type of crop and techniques of cultivation</li> <li>• Cash crops more important due to</li> </ul>	<ul style="list-style-type: none"> <li>• Cash crops more important due to market access</li> </ul>	<ul style="list-style-type: none"> <li>• Temporary impact during slinging</li> </ul>

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
	for irrigation • Riverbank gardens potentially impacted due to water level changes	market access		
14. Impact on Livestock	No impact	• Livelihood program on livestock development	• No major impacts	No impact
15. Impact on Forest Utilization		• Limitation/management on forest use on right bank side of Nam Ngiep	• Easier access to forests via upgraded access road	• No tree cultivation above a certain tree height under TL
16. Impact on Fisheries	• Risk of fisheries reduction in the first year after impoundment	• Sharing of fish resources with resettlers necessary • Risk of fisheries reduction in the first year after impoundment	No impact	No impact
17. Impact on Other Livelihood Activities including Business and Employment	No impact	• Increasing importance due to market access • Livelihood programs incl. skill development, microfinance, and marketing support • Project employment opportunities • Business opportunities at construction site	• Increasing importance due to market access	• Project employment
18. Impact on Tenure Security		• Provision of land titles for replacement land • Indirect impact on other owners by strengthening titling process in the area • Enhancement of land market	• Provision of land titles for impacted land	No impact
19. Impact on Expenditure patterns		• Change of livelihoods with increased cash income lead to more market-related expenditures • Integration into Market economy • Cash compensation values used for	• Change of livelihoods with increased cash income lead to more market-related expenditures • Integration into Market economy • Cash compensation values used for	• Cash compensation values used for investment and consumption

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
		investment and consumption	investment and consumption	
20. Impact on Population profile		<ul style="list-style-type: none"> <li>• Population growth due to decreased out-migration and/or return of younger generation</li> <li>• Population growth due to newcomers</li> </ul>	<ul style="list-style-type: none"> <li>• Population growth due to decreased out-migration and/or return of younger generation</li> </ul>	No impact
21. Impact on Influx of Outsiders, including tourism		<ul style="list-style-type: none"> <li>• Project employees will live in the area</li> <li>• Influx of squatters into villages of 2LR</li> <li>• In-migration of workers and camp-followers</li> <li>• Tourists might explore the dam site and reservoir, which might be used as a picnic-site (see Nam Ngum 1)</li> </ul>	<ul style="list-style-type: none"> <li>• In-migration of workers and camp-followers</li> </ul>	
22. Social Relations		<ul style="list-style-type: none"> <li>• Access to urban areas and stronger integration into national community changes social relations</li> </ul>	No impact	
23. Social Disturbances		<ul style="list-style-type: none"> <li>• Construction site and camp followers risk social disturbance</li> <li>• Closer access to urban area might lead to social disturbances</li> <li>• Cash compensation risky for gamblers, more spending on alcohol, tobacco &amp; leisure activities</li> </ul>	<ul style="list-style-type: none"> <li>• Minor construction site risk of social disturbance</li> <li>• Closer access to urban area might lead to social disturbances</li> <li>• Cash compensation risky for gamblers, more spending on alcohol, tobacco &amp; leisure activities more spending on alcohol, tobacco &amp; leisure activities</li> </ul>	
24. Local authorities	<ul style="list-style-type: none"> <li>• Strengthening of grievance institutions</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthening of grievance institutions</li> <li>• Need for authorities to cooperate with the Project</li> <li>• Strengthening of capacities of police and health care personnel</li> <li>• Capacity improvement via</li> </ul>	<ul style="list-style-type: none"> <li>• Need for authorities to cooperate with the Project</li> <li>• Strengthening of grievance institutions</li> </ul>	

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
		<ul style="list-style-type: none"> <li>cooperation in project activities, e.g. agriculture, and training for health staff</li> <li>Scholarship program will allow hiring of qualified staff</li> </ul>		
25. Impact on Health including Nutrition	<ul style="list-style-type: none"> <li>Health Program</li> <li>Repair/upgrade water supply</li> </ul>	<ul style="list-style-type: none"> <li>Health Program</li> <li>Change of nutrition</li> <li>STD and camp followers issues</li> </ul>	<ul style="list-style-type: none"> <li>Increased Traffic</li> <li>STD and camp followers issues</li> </ul>	No impact
26. Impact on Education	No Impact	<ul style="list-style-type: none"> <li>Education Program including scholarships</li> <li>Provision of new school facilities and equipment</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	
27. Impact on Safety		<ul style="list-style-type: none"> <li>Risk of theft increases with Market economy and urbanization</li> <li>Risk of drug abuse due to access to urban areas and camp followers</li> </ul>	<ul style="list-style-type: none"> <li>Risk of theft increases with Market economy and urbanization</li> <li>Risk of drug abuse due to access to urban areas and camp followers</li> <li>Risk of serious accident due to speedy traffic</li> </ul>	
28. Impact on Access to Public Infrastructure	<ul style="list-style-type: none"> <li>Repair/upgrade of water supply</li> </ul>	<ul style="list-style-type: none"> <li>New public infrastructure including school, health centre, town hall, bus station, market at the resettlement site</li> </ul>	<ul style="list-style-type: none"> <li>Construction of all-year Access Road</li> </ul>	
29. Impact on Access to Information and Services	No impact	<ul style="list-style-type: none"> <li>Improved services due to activities out of the livelihood programs and development of small-town-sized resettlement site</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	
30. Impact on Access to Urban Areas		<ul style="list-style-type: none"> <li>Reduction of travel time to next urban area from two hours to 30-45 minutes</li> <li>All-weather and all-season access to urban areas</li> </ul>	<ul style="list-style-type: none"> <li>Reduction of travel time to next urban area from two hours to 30-45 minutes</li> <li>All-weather and all-season access to urban areas</li> </ul>	

Project Impact	Zone 4	Zone 5	Access Road	Transmission Line
31. Impact on Youth		<ul style="list-style-type: none"> <li>• Livelihood opportunities via livelihood program</li> <li>• Cultural and health awareness</li> <li>• Education Program</li> <li>• Urbanization might lead to changes of aspirations and role models</li> <li>• Strengthened role within the families</li> </ul>	<ul style="list-style-type: none"> <li>• Urbanization might lead to changes of idols/role models</li> <li>• Strengthened role within the families</li> </ul>	

Table 126: Summary of Social Impacts Zones 4 and 5, Access Road, and Transmission Line

This version of the SIA has been published in June 2014.

This SIA will be revised whenever major mile stones have been reached and/or new information is available to integrate.