SFG2499 REV

KINGDOM OF CAMBODIA
Livelihood Enhancement and Association of the Poor (LEAP - P153591)

Environmental and Social Management Framework (ESMF)

November 14, 2016

PREFACE

1. The LEAP project will be implemented in the two distinct contextual and institutional environments of the mostly rural Siem Reap Province and the rapidly urbanizing Phnom Penh Capital. The core project activities will be separated into rural and urban components with specific geographical scope and implementation arrangements customized to each unique setting while maintaining consistency and continuity across the project. The key beneficiaries of the project will be IDPoor[1] and vulnerable households in the target 47 communes and 13 Sangkats in Siem Reap Province and Phnom Penh Capital, respectively.

2. As most of the project activities for the Livelihood Enhancement & Association of the Poor (LEAP) project are to be determined during project implementation based on community demand, it is not possible to develop a firm Plan as to how to address the environmental and social risks that may arise. As such, two safeguards instruments have been prepared; the Environmental and Social Management Framework (ESMF or Framework) and the Resettlement Policy Framework (RPF)[2] in accordance with the World Bank Safeguard Policies. The ESMF lays out the environment and social risk assessment requirements for activities financed, the Project actions to mitigate risks and potential negative impacts on local people and the environment, and the institutional arrangements to execute the ESMF during project implementation.

3. The Project is assessed as EA category "B" provided that LEAP's investment activities will only cause minor, temporary and self-contained environmental and social risks that can be managed through this ESMF and the RPF. In the unlikely case that the results of project screening or assessment determine that an activity to be supported under the project is of high risk, the Ministry of Interior (MOI) will contact the World Bank to determine whether such an activity is eligible based upon the significance of potential impacts, risks and the capacity of the implementing agencies to manage such risks.

4. This ESMF is informed by environmental and social analysis conducted under the LEAP pilot phase which was implemented from 2010-2012. In preparation for the pilot project and eventual project expansion, an Environmental Assessment and a Social Assessment were prepared covering the target areas in Siem Reap Province. An Environmental Management Framework (EMF) was developed and applied during the pilot phase and the lessons of implementation are incorporated into this ESMF. As Phnom Penh has been added as a target project area subsequent to the pilot phase, an Urban Poor Community Needs Assessment was conducted in selected communities in Phnom Penh in 2015 to better understand the needs of target communities and the context for addressing poverty in the urban setting. This Needs Assessment has further informed the design of this ESMF including the RPF as has the completion of an impact evaluation of the pilot phase which focused heavily on the measurement of social capital as well as ongoing consultations with target beneficiary communities in Siem Reap and Phnom Penh.

5. While the pilot phase did not include small-scale community infrastructure investments, this activity type has been added to the proposed new phase of the project. As such, this ESMF draws heavily upon the time-tested, social and environmental risk management procedures included in the

[1] Since IDPoor surveys are only conducted every three years, commune and Sangkat leaders would be asked to identify potential households beneficiaries that may have become poor since the last survey due to economic factors (commodity price drops), natural calamities (drought, floods, destroyed crops) or other shocks based on the IDPoor questionnaire. Those identified as new IDPoor households would be given a proxy means test based on the IDPoor methodology to validate their eligibility.

[2] *The RPF is part of the ESMF and will be disclosed as a standalone document.*

Commune/Sangkat Fund Project Implementation Manual (CSF-PIM). The Commune/Sangkat Fund has been providing grants to every Commune/Sangkat in the country since 2003 for activities such as road improvements, water supply, irrigation, and other activities that are consistent with the activities to be financed under LEAP. The last update of the CSF-PIM was undertaken in 2009. This CSF-PIM's relevant procedures and forms will be applied for the implementation of community infrastructure activities under LEAP. In addition to the CSF-PIM, the ESMF and the RPF include measures for identifying and managing the environmental and social risks of other project-financed activities that are not included in the CSF-PIM, in particular, small-scale livelihood investments by individual households, self-help groups and producer groups. MOI will be responsible for ensuring that the provisions of the ESMF are followed and complied with during implementation.

6. This ESMF has been prepared based on lesson learnt from the LEAP Pilot Project and environmental assessment conducted at various stages of the project preparation. This ESMF will be annexed to LEAP's Project Implementation Manual (PIM). This ESMF document is considered a living document and could be modified and revised in line with the changing type of the project activities. When situations make it appropriate that the ESMF be revised, the World Bank will be consulted prior to its revision and any changes or revisions to the ESMF will require World Bank No-Objection.

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LIST OF ACRONYMS

AC	Agricultural Cooperatives
CCs	Commune Councils
CLF	Commune Level Federations
CLIF	Community Livelihood Investment Fund
CP	Community Professional
C/SF	Commune/Sangkat Fund
EMP	Environment Management Plan
ESMF	Environmental and Social Management Framework
IDA	International Development Association
IDPoor	Poverty Identification Process
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
IEIA	Initial Environmental Impact Assessment
IPM	Integrated Pest Management
IRM	Immediate Response Mechanism
LEAP	Livelihood Enhancement and Association of the Poor Project
M&E	Monitoring and Evaluation
MAFF	Ministry of Agriculture, Fisheries and Forestry
MFIs	Microfinance Institutions
MIP	Micro Investment Plans
MoE	Ministry of Environment
MoI	Ministry of Interior
NCDD	National Committee for Sub-National Democratic Development
NCDDS	National Committee for Sub-National Democratic Development Secretariat
NGO	Non-Government Organization
PG	Producer Group
PIM	Project Implementation Manual
PPC	Phnom Penh Capital
RGC	Royal Government of Cambodia
RPF	Resettlement Policy Framework
SHG	Self-Help Group
SMT	Sub-Management Teams
TEGs	Technical Environmental Guidelines
TSSD	Tonle Sap Poverty Reduction and Smallholder Development
UPCs	Urban Poor Communities
WB	World Bank

SECTION I: INTRODUCTION

1.1 Purpose of ESMF

1. The purpose of the Environmental and Social Management Framework (ESMF) is to ensure that LEAP's activities are screened for any negative social and environmental impacts and mitigating measures are taken into account in activity design and implementation. In other words, the ESMF is designed to ensure the LEAP's investments do not create or result in significant adverse impacts on local livelihoods and the environment, and that potential impacts are identified, avoided or at least minimized. In particular, the ESMF attempts to lay out screening processes and environmental and social guidelines aiming at:

(a) Preventing and/or mitigating any environmental and social impact that may be resulting from the proposed activities,
(b) Ensuring the long term environmental sustainability of benefits from proposed activities by securing the natural resource base on which they depend, and
(c) Facilitating, in a pro-active manner, activities that can be expected to lead to increased efficiency in the use and improved management of natural resources resulting in the stabilization and/or improvements in local environmental quality and human well-being as well.

2. This ESMF has been drawn on the lessons learned from phase 1 conducted in 2010 to inform the design of the LEAP project in Siem Reap. The relevant environmental and social procedures and formats of the Commune/Sangkat Fund Project Implementation Manual (CSF-PIM) were integrated into the ESMF. The CSF-PIM itself is developed based on Cambodia's environmental and social legislation, as well as the lessons from World Bank and ADB operational and safeguard implementation experience in previously applying the CSF-PIM. The CSF-PIM has been developed and updated, most recently in 2009, in order to guide the Commune/Sangkat investment projects to be in-line with international standards of environmentally and socially sustainable development practice. The CSF-PIM requires the application of 'environmental and social screening,' 'environmental analysis' as well as 'land studies' as part of the sub-national, commune development investment system. Therefore, actions are identified by sub-national governments to mitigate risks and potential negative impacts on local people and the environment where sub-project proposals are deemed eligible for project financing, as well as the institutional arrangements to execute the ESMF during project implementation.

SECTION II: PROJECT DESCRIPTION

2.1 Project Development Objectives

3. The project development objective (PDO) is to improve access of poor and vulnerable households in selected communities to financial services, opportunities for generating income, and small-scale infrastructure, and to provide immediate and effective response in case of an eligible crisis or emergency.

2.2 Project Beneficiaries

4. The key beneficiaries of the project would be the IDPoor[3] and vulnerable households in the target 47 communes and 13 Sangkats in Siem Reap Province and Phnom Penh Capital, respectively.

[3] Since IDPoor surveys are only conducted every three years, commune and Sangkat leaders would be asked to identify potential households beneficiaries that may have become poor since the last survey due to economic factors

5. The beneficiaries in Siem Reap Province would come from the 47 communes that did not receive support from the TSSD Project. 42 communes did not receive any TSSD support and will be fully covered by LEAP; 5 communes that did not receive full coverage by TSSD but have above average poverty levels and will have respective villages included in LEAP. The beneficiaries in Phnom Penh Capital would come from the 13 Sangkats that were selected as follows: (a) for the eight districts where IDPoor data is available, the Sangkats with the largest total number of IDPoor households were selected. Specifically, one Sangkat each was selected from the six districts with up to 10 Sangkats, while two Sangkats each were selected from the two districts with more than 10 Sangkats; and (b) in the four districts for which IDPoor data is not available due to their central/downtown location, one Sangkat per district which has the highest total number of urban poor communities (UPC) households as identified by Phnom Penh Capital was selected. In the absence of IDPoor data for the entire city, this criteria allowed the inclusion of both peri-urban and central-urban districts. The lower target for Phnom Penh coverage was purposely done to allow the piloting of project activities in the urban context, with the potential of scaling-up as the project progresses.

6. The IDPoor household members of existing and to be established SHGs, producer groups and agricultural cooperatives would be the main project beneficiaries. All community members would be invited to apply but the beneficiaries would largely be from IDPoor and vulnerable households as the beneficiary selection would be based on the IDPoor criteria and determined by proxy means testing of applicants. It is expected that the households in the communes/Sangkats would all benefit from the planned infrastructure improvements under the project, but preference would be given to priorities expressed by IDPoor households to ensure that they benefit the most.

2.3 Project Description

7. The project would be implemented in two distinct contextual and institutional environments of the mostly rural Siem Reap Province and the rapidly urbanizing Phnom Penh Capital. The core project activities would be separated into rural and urban components, each would have specific geographical scope and implementation arrangements which are customized to each unique setting while maintaining consistency and continuity across the project.

2.4 Project Components

8. **Component 1: Improving Livelihoods for Rural Poor and Vulnerable Households (US$14 million).** This component aims to address the needs of the IDPoor and vulnerable households in the 47 communes in Siem Reap Province through a demand driven approach. Activities would include: (a) conduct of organizational and capacity building support to SHGs, producers groups and agricultural cooperatives; (b) provision of seed grants for their livelihood sub-projects; (c) conduct of market studies; (d) extension of business support services; (e) skills development training; (f) employment support services and (g) provision of productive infrastructure to improve livelihood and increase productivity. As the predominant sources of income for these rural poor households are from agriculture, livestock and fisheries, the project would leverage the technical support of the Ministry of Agriculture, Fisheries and Forestry (MAFF) and other technical service providers. Drawing from the experience of the pilot project, this component would be implemented by the Siem Reap Provincial Government through the following sub-components:

(commodity price drops), natural calamities (drought, floods, destroyed crops) or other shocks based on the IDPoor questionnaire. Those identified as new IDPoor households would be given a proxy means test based on the IDPoor methodology to validate their eligibility.

9. ***Sub-Component 1.1: Building and Strengthening Institutions of the Rural Poor.*** This would support the formation and strengthening of beneficiaries mainly through SHGs, producers groups or agricultural cooperatives, and enable their members to engage jointly or individually in productive activities. Capacity building assistance would include basic financial literacy (savings, budgeting, etc.), micro-enterprise/business planning, basic accounting and record keeping, good governance practices, and access to financial services. Furthermore, groups and individual farmers would be assisted and strengthened through facilitation market linkages, technical assistance and capacity building for producers to increase access to assets, skills, technology and markets.

10. To supplement the initial savings generated by the SHGs, the project would provide seed grants (US$1,000-1,500 per SHG) for on-lending to members to implement their Micro Investment Plans (MIPs). The grant would be for SHGs that have previous experience in implementing and managing microenterprises/livelihood activities. Where commune-level federations of SHGs, producers groups, agricultural cooperatives, etc. are existing and qualified to be financial intermediaries, the project would provide them with Community Livelihood Investment Fund (CLIF) grant of up to US$30,000 per federation. This grant would be for on-lending to member groups that are not qualified to access credit from MFIs and other formal banking institutions. The project would also link the federations with financial institutions to access additional/bigger credit funds and other financial services.

11. MAFF as well as NGOs/other service providers would be tapped to provide technical assistance and market linkage services to the beneficiary groups and where warranted, to individuals. These would focus on improving production efficiency, productivity enhancement, access to technology extension, logistics infrastructure and information services, and building pro-poor market systems for small and marginal producers that would enable them to participate in higher value chains.

12. ***Sub-Component 1.2: Enhancing Skills and Employment Opportunities for the Rural Poor.*** Taking advantage of the opportunities offered by enterprises connected to the rapidly growing tourism industry in Siem Reap, this sub-component would provide a complementary livelihood pathway to self-help group, value-chain and market access support under Sub-component 1.1. The Project would invest in the development of beneficiary skills (particularly unemployed youth and women from poor households) and the ability to obtain new or improved wage employment. Activities would include: (a) local labor market surveys and training provider certification; (b) beneficiary targeting and selection; (c) employability training and career counseling; (d) voucher provision and skills training; (e) job placement and employment support. ***Sub-Component 1.3: Improving Basic Services and Community Infrastructure.*** This would support small-scale community infrastructure and services to respond to the priority needs of the beneficiaries and contribute to their productivity and income generating potential. Investments would include storage or small warehouses, water supply and sanitation facilities, small-scale irrigation schemes, community access roads, and better on-farm water management practices, among others. The identification of priority needs would follow the existing annual participatory identification and planning process that provides opportunity for the beneficiaries to advocate their investment priorities and ensure that these are included in the Commune Investment Plan (CIP). The project would adopt the Commune/Sangkat Fund Project Implementation Manual (CSF-PIM) for the preparation and implementation of community sub-projects. The CSF-PIM has been used by Communes to small-scale investments for several years.

13. **Component 2: Improving Livelihoods for Urban Poor and Vulnerable Households (US$4 million).** This component aims to address the needs of the IDPoor and vulnerable households in 13 Sangkats in Phnom Penh Capital through a demand driven approach. Activities would include: (a) skills development training; (b) employment support services skills development and job training; and (c) provision of productive infrastructure to improve livelihood and increase productivity. Direct financial services support would not be provided but where appropriate, linkages to existing financial institutions

and services would be facilitated. This component would be implemented by the Phnom Penh Capital Hall through the following sub-components:

14. ***Sub-Component 2.1:*** **Enhancing Skills and Employment *Opportunities* for the Urban Poor.** Since there are many training and employment programs in Phnom Penh and a wider range of employment opportunities, support would be provided to more secure, satisfying and higher earning jobs. As in the case of the rural component, this sub-component would provide a complementary livelihood pathway to beneficiaries. The Project would invest in the development of beneficiary skills (particularly unemployed youth and women from poor households) and the ability to obtain new or improved wage employment. Activities would include: (a) local labor market surveys and training provider certification; (b) beneficiary targeting and selection; (c) employability training and career counseling; (d) voucher provision and skills training; (e) job placement and employment support. Some of the livelihood priorities identified during project preparation include food preparation and processing, handicraft making, retailing/ buy and sell, off-site garment factory sewing/dressmaking, cosmetology services, tuktuk operation, etc. Beneficiaries, particularly youth, would be encouraged to consider a wider range of career opportunities and skills where there is high demand and potential for career development.

15. ***Sub-Component 2.2: Improving Basic Services and Community Infrastructure.*** This would follow the same process as in Sub-Component 1.3, drawing on use of the CSF-PIM. To ensure that the sub-projects would most benefit the poor and vulnerable households such as the UPCs, the community planning meetings would include both IDPoor households and representatives of the UPCs. The types of infrastructure facilities that would be funded include but not limited to drainage system, community road/footpath, water supply and sanitation system, and street lighting. These community infrastructure investments have been identified in the UPC needs assessment survey and are expected to increase the beneficiaries' productivity, resilience and ability to adapt to natural and economic shocks.

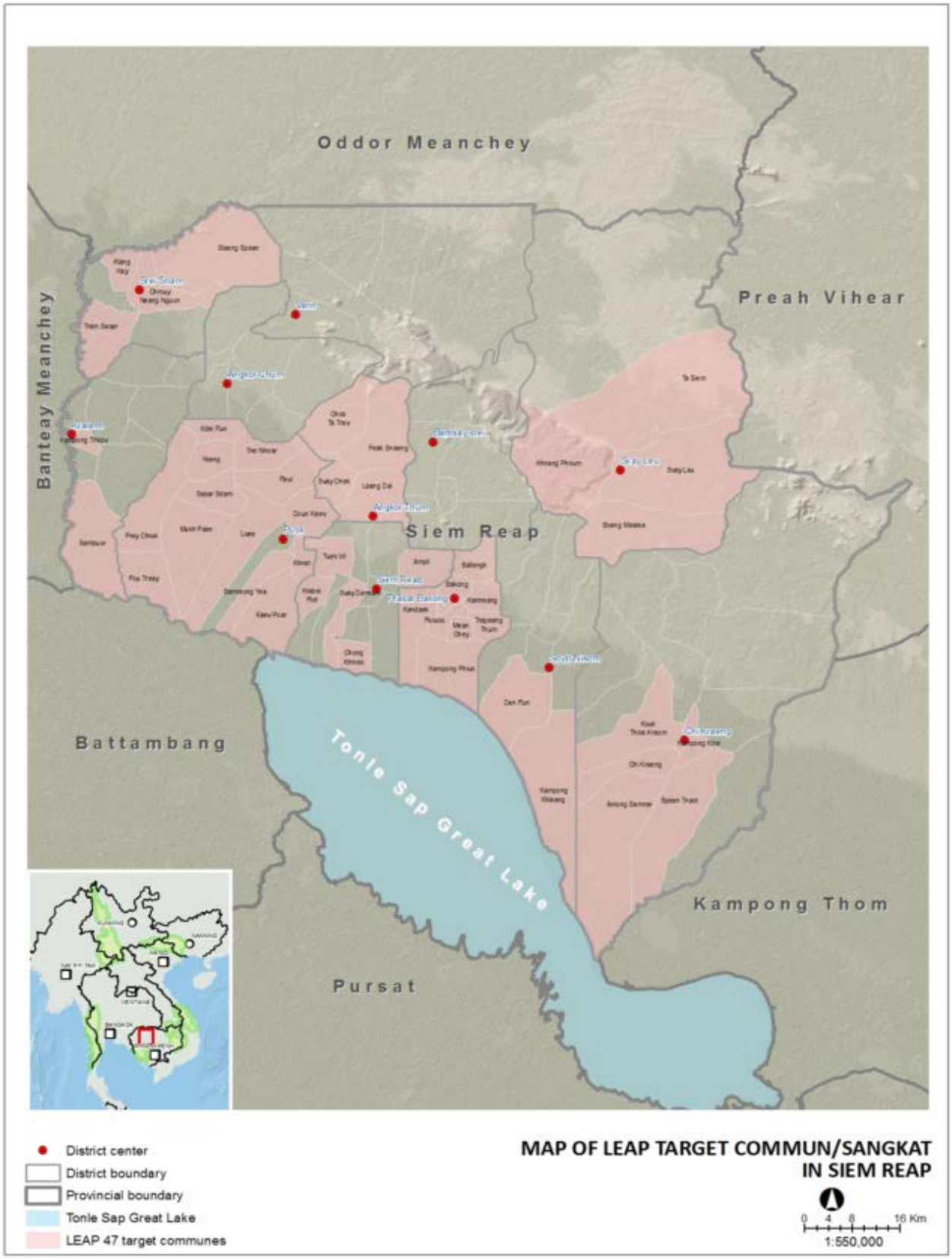
16. **Component 3: Project Management (US$2 million).** This component would support the overall implementation, supervision and coordination of the project at the national, provincial, district/Khan, commune/Sangkat, and village/community levels, including: (a) social and environmental safeguard risk management; (b) procurement planning and contracts management; (c) financial management, disbursement and audit; and (d) monitoring and evaluation (M&E), and communication.

17. **Component 4: Contingent Emergency Response (US$0.00 million).** This component, with an initial allocation of zero dollar, is part of the World Bank's (IDA's) support to an immediate response mechanism in Cambodia. This would allow the reallocation of a portion of undisbursed balance of the project for recovery and reconstruction support following a formal government request in the event of an eligible emergency.

2.5 Overview of Project Location

18. Siem Reap province is surrounded by five other provinces, in the north is Otdar Meanchey, in the west is Banteay Meanchey, in the east are Preah Vehear and Kampong Thom, and in the south the province borders partly with Battam Bang and partly with Tonle Sap Lake. In Siem Reap, the project covers 47 communes in 9 districts (Angkor Thum, Chi Kraeng, Kralanh, Prasat Bakong, Puok, Svay Leu, Siem Reap, Srei Snam and Sotr Nikum), that did not receive support from the TSSD Project. 42 communes did not receive any TSSD support and will be fully covered by LEAP; 5 communes that did not receive full coverage by TSSD but have above average poverty levels and will have respective villages included in LEAP [See map below].

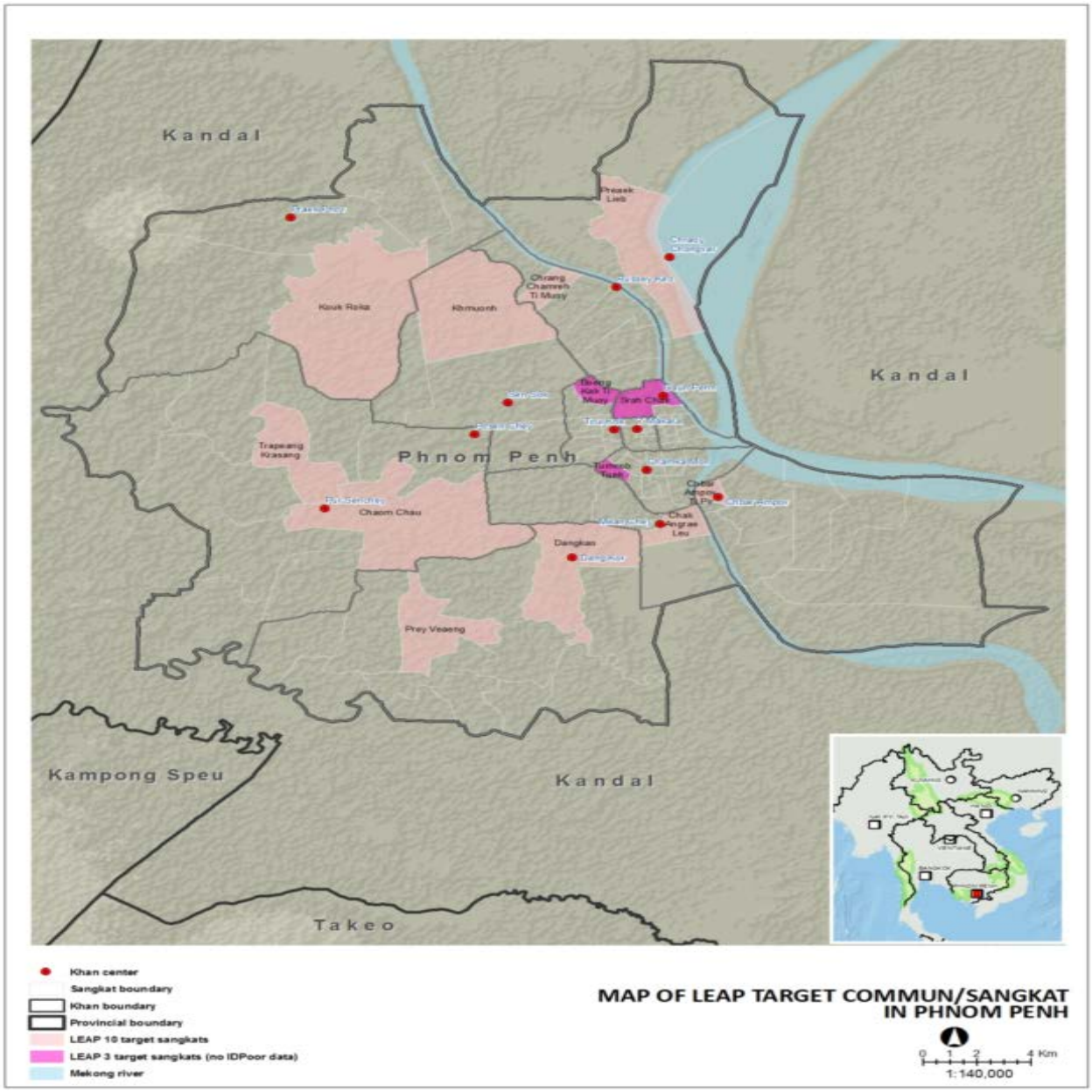
Map of Project Location in 47 Communes in Rural Siem Reap Province



19. In Phnom Penh, 13 out of 105 Sangkats (the urban equivalent of a commune) will be included in the project. The beneficiaries were selected as follows: (a) for the eight districts where IDPoor data is

available, the Sangkats with the largest total number of IDPoor households were selected. Specifically, one Sangkat each was selected from the six districts with up to 10 Sangkats, while two Sangkats each were selected from the two districts with more than 10 Sangkats; and (b) in the four districts for which IDPoor data is not available due to their central/downtown location, one Sangkat per district which has the highest total number of urban poor communities (UPC) households as identified by Phnom Penh Capital was selected. In the absence of IDPoor data for the entire city, this criteria allowed the inclusion of both peri-urban and central-urban districts. The lower target for Phnom Penh coverage was purposely done to allow the piloting of project activities in the urban context, with the potential of scaling-up as the project progresses [See map below].

Map of Project Location in 13 Sangkats in Urban of Phnom Penh Capital



20. A list of LEAP target communes/sangkats in Siem reap and Phnom Penh that are on the Environment Watch-List are listed in Annex 1.

21. From the Environmental Watch-list provided by Siem Reap Province, 20 targeted communes either have, or plan to have some areas protected in the future. Six Communes are covered by natural forest more than 50% of the total area. Twenty-Four targeted communes have natural forest or wet land covered area more than 10% of the total area. None of the Phnom Penh targeted communes are included in the Environmental Watch-List. There are no Sangkats on the Watch List from Phnom Pehn.

SECTION III: KEY SOCIAL AND ENVIRONMENTAL CONDITIONS

3.1 Environmental Conditions

22. In April 2010, an Environment Assessment (EA) was completed for the LEAP project, focusing on target communes in Siem Reap Province. Below is a summary of the update environmental conditions in Siem Reap, supplemented by comparable data for Phnom Penh Capital.

3.1 1 Physical Resources

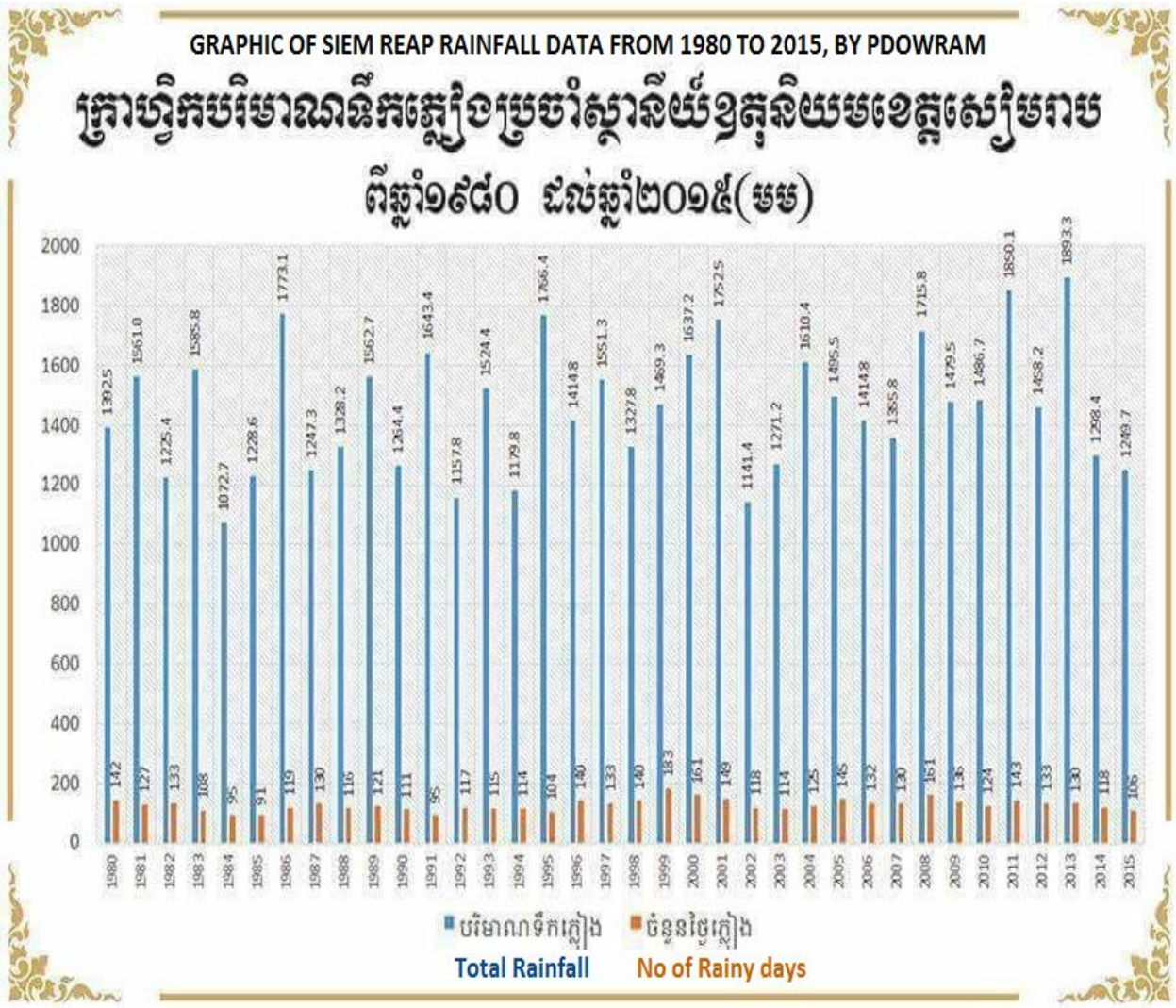
(a) Climate

23. Cambodia's climate is dominated by a seasonal monsoon: the tropical wet and dry season with a distinctly marked seasonal difference. The monsoon brings rainfall beginning in May and lasting until October with rain occurring almost daily during much of this season, while the dry northeast monsoon starts in November and continues until April. From November to February the weather is generally mild and dry, whereas the weather is hot from February until the onset of the Southwest monsoon.

24. The climate in the Siem Reap province like other province/cities in Cambodia is strongly influenced by the tropical monsoon, modified by the local topography (from Kulen Mountains to Tonle Sap Great Lake). The cooler dry northeast monsoon (November to March) is followed by the southwest monsoon (May to October) with stronger winds and higher humidity and approximately 90% of the year's rainfall. (Peak rainfall occurs in August/September and the lowest rainfall in February. Air temperature is highest in April (average maximum temperature is 24°C to 30°C) and lowest in January and December (average minimum is from 17°C to 24°C).

25. Rainfall is one of the most important variables for design of storm water systems determining the rate and volume of surface run off to be conveyed through the system. Run off estimates are usually based on historical rainfall data that provide frequency, intensity and duration of storm events. Rainfall data recorded at Siem Reap Meteorological over 24 hours periods is shown in **Table 3.1 below**.

Table 3.1: Rainfall Data from 1980 to 2015



Source: Provincial Department of Water Resource and Meteorology, 2015, Siem Reap

(b) Air Quality

26. In Cambodia, air pollution is basically a localized problem. It is assumed that the emission from socio-economic activities, roads construction, land transport, petroleum use in energy generation, industries, and use of biomass fuel which are the mainly contributors to the air pollution.

27. Air quality in Siem Reap and Phnom Penh province are similar to other urban areas in Cambodia. Main pollutant sources include dust generation from unpaved roads, construction works and exhausted pollution from the transport sector, in particular soil transport trucks and tuks-tuks. This air pollution problem is becoming even more important for World Heritage Sites like the Angkor Archeological Park (Siem Reap) due to the hundreds of tuk-tuks and buses carrying the tourist. Numerous households in rural areas and even in Phnom Penh as well as restaurants rely on open fires to cook food over charcoal and, less often wood.

28. There are no data available on air quality in the project area. However, according to field observations and the local community, air pollution is not a serious problem yet, but dust from road construction and soil transportation is sometimes a problem in the dry season especially. In addition, due

to no sufficient garbage collector to collect garbage in Phnom Penh project area, air pollution from garbage burning in poor communities is an issue.

29. Noise pollution data are also not available for Siem Reap and Phnom Penh province. However, according to site observations the noise condition in the area is still good. Main noise sources are traffic, construction material transport, and human activities: construction and other commercial activities within project area.

(c) Topography, Geology and Soil

30. According to the Crocker soil map, 1962, soils within the Siem Reap province are classified into three categories in accordance to their potential for agriculture, forestry or both (i.e. tree crops and agro-forestry). Firstly, acid lithosols are found in the northern hilly areas of Kulen Mountain and cover 35% of the area. This soil type is not very suitable for agriculture and should remain under forest cover. Secondly, alluvial Lithosols and cultural Hydromorphics are fertile and very suitable for rice production. They occur mainly along Stueng Siem Reap and Stueng Rolus and cover together 15% of the area. Thirdly, plinthicite and red-yellow Podzols are good forest soils, but not so suitable for rice production. They have good potential for plantations such as teak or agro-forestry systems. They occur in the flat lowland area and dominate with 54%.

(d) Surface Water Quality and Hydrology

31. Cambodia is also home to the largest lake in Southeast Asia, the Tonle Sap (Great Lake), which connects with the Mekong River in Phnom Penh.

32. The surface water system in the project areas as well as in Siem Reap province can be divided into two sub-systems. North of NR6, there is dominance by the water from the mountains (Teuk Chub), Steungs, lakes and ponds. In the raining season, these sources of water are used for agricultural purposes including rice cultivation, Chamkar (slash and burn agriculture) and plantations, scattered around the houses of local residents. In the dry season, there is very limited water available. According to the field investigations, the surface water quality in the project areas is still good enough for agricultural purposes.

33. South of NR6, the surface water is dominated by the Mekong River (which flows through the Tonle Sap river ecosystem for about 100 km) and other Steung (such as Siem Reap, Rolus, and Chi Kraeng). Around 60% of the Tonle Sap water originates from the Mekong River during flood season, while about 40% comes from its own catchment and 11 Non-Mekong River tributaries. In Siem Reap, the Tonle Sap enlarges to five times its normal size when the Mekong rises during the monsoon season thus causing the Tonle Sap River to flow northward into the Lake. During the dry season it reverses its flow and goes back into the Mekong River. About of 20% of Mekong Flood water (about 48,000 million cubic meters) can be absorbed by the Tonle Sap Lake. As a result of this, the Tonle Sap Lake is a great resource for freshwater fish, actually being one of the richest sources in the world.

34. According to the field investigations, the quality of surface water in the project area are still good. In the dry season, pollution by human and household waste can be high near densely populated areas. MOWRAM and her technical department has observed water quality since 1993 through 2015 at two stations Kampon Loung-Pursat province and Phnom Krom- Siem Reap province within the Tonle Sap Basin. The parameters observed included Temperature, pH, Conductivity, Total suspended solids, nitrate, Ammonia-nitrogen, Total phosphorus, dissolved oxygen and chemical oxygen demand (COD). The result of water quality observation at two stations of MOWRAM-water quality indices fluctuates from excellent and good (Between year 2011 to 2015) for human health and aquatic life

(e) .Ground Water

35. In Cambodia, most people living in rural areas prefer to use rain water for their domestic purposes. Surface water is also popular, in spite of its risks to human health. In the area there are a large number of communal tube-wells that were mostly provided by external agencies. The distribution and depth of the groundwater table in the project area varies considerably. The water table changes with

rainfall, specific local geomorphological conditions, and the distance to the permanent water bodies.

36. According to the local communities as well as local residents, the ground water is mainly taken from two types of wells: tube wells and open wells. Ground water is used for washing, cooking as well for consumption. In the project areas, open wells mostly have a good quality for daily used, however water from tube wells/pipe wells sometimes has a red color due to the contaminated by iron (Fe). At other

places manganese in the groundwater has concentrations that might cause some consumer inconvenience (e.g. staining of laundry and sanitary ware, taste), though it is not believed to have any negative health effects.

3.1.2 Ecological Resources

(a) Fisheries and Aquatic Biology

37. Data on aquatic animals and plants was not available for the project area. However, according to field observations during the 2010 LEAP Environment Assessment, and the local community, waters in the project area have some commercial fish value for small fish species such as common carp, as well as a high bio-diversity. The floodplain vegetation plays a crucial role in the ecosystem productivity by providing habitats, substrate, and food for aquatic organisms. It should be noted that these organism groups are the most important fish food in lakes and other water courses and natural canals within the project area.

38. Based on local residents, a variety of common fish can be found within the project areas as well as in the natural lakes, Steungs, ponds, canals and swampy areas. Common fish that can be found are given in **Table 3.2:**

Table 3.2: Fish species existing in project areas

N	Khmer Name	Scientific Name
1.	Trey Andeng Roeung	Clarias batrachus
2.	Trey Andeng Tun	Clarias meladerma
3.	Trey Chhlonh	Marcognathus siamensis
4.	Trey Ampil Tum	Systomus orphoides
5.	Trey Chhpin	Hypsibarbus malcolmi
6.	Trey Kanhchos	Mystus singaringan
7.	Trey Kantrob	Pristolepis fasciata
8.	Trey Kranh	Anabas testudineus
9.	Trey Sor	
10.	Trey Ross	Snake-head fish
11.	Trey Chang Var	
12.	Trey Kam Pleanh	

Source: Local Community, 2009

(b) Wildlife

39. Due to the low habitat value of the sparse forests, there is little native wildlife within the project area. The local communities have reported that many mammals are hunted by local people for consumption and sale of meat, trophy and for medical purposes. Sometimes tigers are spotted (only short-time) coming mostly from the mountains including: Phnom Kra Horm (Red Mountain), Phnom Santourse (Santourse Mountain), and Phnom Veang (Veang Mountain) (Mr. Lim Pheng, Chief office of Prevention and Protection of Natural Resources, Provincial Department of Environment and in charge of NRM, Siem Reap, 2009).

40. The mammals that appear in the project area mainly include: wild pigs, muck deer (Indian Muntjac), rabbits and gibbons. There are also some species of reptiles in the project area such as turtles and snakes. According to the official of natural resources management in Siem Reap province project

monkeys and gibbons are most frequent in the areas of Beoung Pe and Kulen Promtep. Wild pigs, rabbits, pangolin and other wildlife are constrained to the forest of Kulen Mountain (Mr. Lim Pheng, Chief office of Prevention and Protection of Natural Resources, Provincial Department of Environment and in charge of NRM, Siem Reap, 2009).

41. There is no wildlife and its habitat in targeted Sangkats in Phnom Penh.

(c) Forests

42. There are no inventories on forest resources and community forestry available for the project area, with the exception of data on permanent forest estate (all state owned forestland) which is under responsibility of the Forestry Administration. However according to field observations, local communities and stakeholders, including officials of the natural resources management in Siem Reap province, it seems that most of the tree in the area have been cut for speculation reasons and local residents for planting rice (slash and burning agriculture) in order to support their family. Most of the still existing trees are fruit trees or trees for other production purposes mainly within settlements but also in plantations. The predominant species are mango, banana and coconut scattered over village land and Chamkar areas. There seems to be no other valuable forest (economic value) (Mr. Lim Pheng, Chief office of Prevention and Protection of Natural Resources, Provincial Department of Environment and in charge of NRM, Siem Reap, 2009).

43. Within the project area, the forest resource has been under threat by alteration into agricultural farms (Chamkar) and human settlements and by land speculations (Mr. Lim Pheng, Chief office of Prevention and Protection of Natural Resources, Provincial Department of Environment and in charge of NRM, Siem Reap, 2009).

44. There is no forest covered area in targeted Sangkats in Phnom Penh.

(d) Protected Area

45. In Cambodia, protected conservation areas cover about 5.4 million hectares. There are 7 national parks, 9 wildlife sanctuaries, 3 protected landscape areas, and 3 protected areas. The national parks are located in the coastal zone, the mountains and the plateau and lake region and cover 742,300 million hectares in total. Wildlife sanctuaries in these regions cover 4.138 million hectares. The protected landscapes area covers 97,000 hectares. Archaeological and cultural sites and protected areas cover 403,900 hectares.

46. Angkor Protected Landscape area was established in 1925 and was the first protected area in South East Asia (World Bank, 2003). It covers 10,800 ha. The area surrounds the Angkor Temple complex and is important for its cultural heritage values and forest cover (Ministry of Planning, 2003). Threats to the area include pressures from tourism and the population living and working within the boundaries of the area. JICA (2000) reports a proposal to expand the area to 37,000 ha. The current status of this proposal is unknown.Phnom Kulen National Park is a 37,500 ha National Park established in 1993. The important features of the National Park are its role as the watershed of the Siem Reap River and as an important archaeological site (Ministry of Planning, 2003). The National Park is located in the Kulen Mountains to the north of Siem Reap town. Threats to the National Park include illegal forestry and poaching of wildlife. **Table 3.3** presents the protected areas in the Siem Reap province:

Table 3.3: Protected areas/wildlife reserves, Siem Reap and part of province

Protected Area	Province	Total Size (ha)	Characteristics

Angkor Protected Landscape	Siem Reap	10.800	This mainly forested area includes the Angkor temple complex, perhaps the single most important archaeological/ cultural site in southeast Asia.
Phnom Kulen National Park	Siem Reap	37,500	This area is within the watershed of the Siem Reap river. It is also an important archaeological site.
Kulen Promtep Wildlife Sanctuary	Siem Reap 27% Preah Vinar 73%	402,500	The largest area in the protected area system intended to protect the Kouprey. The principal habitats are lowland open dipterocarp forest.
Boeung Per Wildlife Sanctuary	Siem Reap, Kampong Thom, Preah Vihear	242,500	This area is located in the northern plains of Cambodia. It has wild cattle and deer, large water birds and elephants; as well as important archaeological sites. It is the southern end of the Northern Plains Dry Forest Priority Corridor.
Tonle Sap Biosphere Reserve	Siem Reap 50% plus 4 other riparian provinces	316,250	The largest inland freshwater system in southeast Asia. Contains important wetland habitats, flooded forests and is rich in fish and avian species.

Source: Statistical yearbook, 2006

47. No protected areas were identified in targeted Sangkats in Phnom Penh.

(e) Endangered Species

48. There is no data on the endangered species in the area, but according to the local residents as well as local communities there are no endangered species within the project area. However, there are some key areas or habitats for rare and endangered species, including Prek Tuol Bio-Sphere Reserve, Boeung Tonle Chmar and Kulen Forest Area (Mr. Lim Pheng, Chief office of Prevention and Protection of Natural Resources, Provincial Department of Environment and in charge of NRM, Siem Reap, 2009).

3.2 Social Analysis

49. As part of the project preparation, a Social Analysis (SA) was conducted with the main objectives to: (i) identify project beneficiaries in urban and rural areas where the project will be implemented; including the presence of vulnerable groups and indigenous communities; (ii) identify how these groups are organized and their preferences to participate during project design and project implementation; and (iii) assess the potential social risks associated with project activities including positive and adverse impacts.

50. Several instruments were drawn upon to comprise a full SA of activities planned under the project in both Siem Reap and Phnom Penh. To inform preparation of the project at the time that it was targeting 50 communes in Siem Reap, and aiming for World Bank approval in 2010, a Social Assessment as well as a Lead Social Development Specialist Report were conducted in late 2009/early 2010 and August 2010/January 2011, respectively. While only a pilot project was implemented in 6 communes, the lessons from this pilot were well documented in project reporting and an impact evaluation was undertaken in 2012 with a specific focus on measuring changes in social capital in treatment villages.

Upon reactivation of the preparation process in 2015, the target area was expanded to include Phnom Penh. To understand the unique context of Phnom Penh, an Urban Poor Community Needs Assessment was conducted in 2015. Finally, as a complement to this array of social analysis instruments, community consultations have been reactivated in Siem Reap and expanded to include Phnom Penh. These consultations have provided additional insights into the challenges and opportunities to implementing the proposed activities in Siem Reap and Phnom Penh, highlighting new areas for livelihood support which have since been incorporated into the project design, namely skills development, training and community infrastructure.

51. *Siem Reap Social Assessment (2009-2010)*. The methodology for the SA included a literature review (including relevant legislation and policy), interviews and group meetings with key stakeholders, and in-depth investigations in a selected, target commune (Chob Tatrav), including focus groups, semi-structured interviews and household surveys. The SA found that there was a significant need for the improvement of livelihoods of poor households to provide income for the improvement of living conditions. There was interest in SHG formation and it was highlighted that support would be needed for members to successfully raise animals and for vegetable cultivation for consumption and sale. Vulnerable groups such as handicapped, elderly and female-headed households/widows would need additional support to participate in, and benefit from, SHGs. Types of income generation activities identified included paddy rice and farm cultivation; fish raising; animal raising; vegetables and other crops; collect other non-timber forest products such as like resin, rattan, malva nuts, bamboo, etc. For people that live near water sources such as Tonle Sap river, lake and stream, they would prioritize production of Prahouk and Pha Ak, dried fish, etc for selling after fishing season (when fish price increases).

52. Most community members interviewed indicated that they would provide land for livelihood activities, but some had concerns as to potential disputes among members of SHGs and others had very little or no land and would not be able to provide any to group activities. Respondents added that any land donated for SHG activity (i.e. pig raising) must be free of squatters, encroachers or other claims or encumbrances and the land donation of each family had to be recognized by the village and commune authorities, as is normal practice for land donation under the Commune/Sangkat Fund. The SA recommended that the limitation of voluntary land donation of no more than 5% of a household's land applied by the Commune/ Sangkat Fund be applied for LEAP activities. The report also outlined steps to undertake dispute resolution and to address the needs of women and vulnerable groups (i.e. ensuring they are not left out).

53. The report of the Senior Social Development Specialist, conducted from August 2010 to January 2011 included 5 separate reports, including: (a) *"Existing and Defunct SHGs and Activities of NGOs in Pilot Communes"*; (b) *"Village Mapping in 50 Target Communes of LEAP"*; (c) *"Poor HHs and Their Means of Production in Pilot Communes"*; (d) *"Reviews of Professional Objectives for the Social Development Activities that Reflect the Consistency with the Royal Government Policy"*, and (e) *"Social Accountability and Complaints Handling Mechanism"*. As a part of this work, a survey was conducted in all 65 villages of 6 pilot communes to get relevant information on infrastructure, poverty, job opportunity, means of production, existing and defunct CBOs and their modes of operation, and activities of NGOs. A Village Mapping of all 50 communes of the LEAP target area was undertaken using district and commune data in 2010. Information such as legal documents, existing reports, and district and commune data 2010 was used to complement survey data if needed for reports.

54. In this study, the active and defunct CBOs/SHGs in pilot communes, their modes of operation, and the reasons why they are defunct or active were mapped, analysis, and recommendations were made for the usefulness of the project. The report on "Village Mapping for LEAP" gives relevant information for project intervention up to village level, and it also provides a model for data analysis for future intervention. Poor HHs and their means of production including poverty rate and other social aspects were

mapped and analyzed and leading to recommendations for each village and opportunities for project interventions in the pilot communes. The RS-Phase II, NSDP 2009-2013 and other relevant policies and strategies were used to reflect on the objective and activity components of LEAP project. Social accountability activities and Complaint Handling Mechanisms (CHM) were drafted based on existing CHMs in Cambodia. The consultant proposed to have two CHMs, one at grassroots level and another one at PMU level.

55. The lessons from pilot project implementation were captured in various project reports as well as a Final Report submitted to the World Bank by RGC in 2012. In addition, an impact evaluation (IE) was conducted in 2012, led by the World Bank's Impact Evaluation team in the Development Research Group. To evaluate a causal effect of the project, the IE randomly sampled 18 villages from 18 randomly selected control communes to match with 18 randomly sampled villages in the 6 pilot communes. The final sample was composed of 548 households (272 control, 276 treated). At the end of each household's enumeration the household survey team gave each household head or primary couple of the household an invitation to a laboratory session on a later day in that village. After the household survey had passed through the village, the second survey team organized these laboratory sessions in the village. 524 of the 548 households participated in these sessions for an attendance rate of 95.6%.

56. The IE found that the project generated significant effects on the behavior it most directly targeted: villagers' savings and their associations in SHGs. Both increased significantly in the treated communities. These effects were particularly profound among the poorest members of those villages as was the intention of the project. The project had no significant impact on the savings on the non-poor in treated communities. There is also some evidence of enhanced livelihoods: respondents in treated communities reported significantly greater production of and income from meat and fish. There were no impacts on other sorts of production or income though. There was no evidence for broader social impacts of the pilot project however. Looking across six sets of indicators of social capital (behavior in the laboratory, a survey of economic networks, a survey of social networks, retrospective self-reported group membership and retrospective self-reported community voluntary activity) the pilot project produced significant increases in only one of these areas—retrospectively self-reported group membership. The authors of the IE report noted that these negative findings on the broader social capital impacts of the program should be no reason for discouragement. The study was conducted less than three years after the pilot program's launch. Given more time, the authors thought that the increased association among the poor in SHGs may produce the hoped-for community-wide gain in social capital.

57. To assess the potential benefits and impact of the project in the additional coverage area of Phnom Penh, an *Urban Poor Community Needs Assessment* was conducted in 15 poor communities that were identified as likely target communities under the project. Both quantitative and qualitative data were collected. Quantitative data such as estimated number of households, number of poor households, community settlement dates, were mainly from secondary sources and through key informant interviews including officials of PPC, Khan Administrators and Sangkat councilors. Relevant data from the secondary sources (for example, MOP/NIS IDPoor reports) were reviewed. A total of 40 officials were covered in the key informant interviews. Primary data were gathered mainly through field investigations in the sample communities. The field investigations allowed for data triangulation and/or updates of information obtained from secondary sources and/or key informant interviews and collection of data, which were not available from the latter. The field investigations used a combination of data gathering techniques, namely, focus group discussions and physical observation.

58. All together 20 types of infrastructure and services were identified as needed. The most important and common needs for all communities are, in order of importance, drainage system, community internal street networks and community lighting and power line posts. Other needs (e.g., health center, high school, market, police station and security patrol, public transport service, housing credit, mosquito

control, connection to PPWSA tap water system, ambulance, language classes, scholarship for child education) relate to specific communities, which are not common for all. Community residents also expressed the need for livelihood skills, and thus would like to get vocational skill training. The skills they need include, in order of rank, motorbike repair; hair-dressing and make-up for wedding function (and wedding event management); car repair; electronic device repair; fashion tailoring; cooking; computer applications; construction; mushroom growing and livestock raising; sewing machine repair; and wielding.

59. Finally, community consultations were conducted in target communes/Sangkats in Siem Reap and Phnom Penh to further vet the findings of the studies conducted, to identify new and emerging issues and to obtain feedback on proposed activities, safeguard provisions and other aspects of project design. A table summarizing the locations, timing and topics of these consultations is included as **Annex 2**. The consultation meetings largely reinforced the demand for livelihood support that emerged from the social analysis and other reports. Additional areas of social risk that had not featured significantly in previous studies included the effect of seasonal migration to Thailand in Siem Reap, costs and other barriers to access better jobs in Phnom Penh and a desire on the part of many women to be able to earn income from home (i.e. offsite sewing for garment factories) to allow more time for child care.

60. Included in the above-mentioned methodologies was an analysis of social context, diversity and gender; an analysis of formal as well as informal institutions in the project areas; including stakeholder analysis; a structured consultation and participation framework and process; and a comprehensive analysis of social risk, both risks potentially emanating from the project and risks to the project from the social context. The Project will primarily benefit the poorest and most vulnerable households in selected communes/Sangkats in Siem Reap and Phnom Penh, in particular, those identified as IDPoor 1 and 2. Support will be provided through Self-Help Groups, producer groups, and agricultural cooperatives, as well as through skills-building and job placement support. Potentially all commune/Sangkat or village households could benefit from infrastructure improvements (i.e. water supply or community road repair), but preference will be given to priorities expressed by poor households, so these households should benefit most.

61. MoI has identified key areas where the project is expected to contribute positively. Indicators will be developed for these key outcomes, and monitoring and supervision will track progress in these areas, disaggregated by social groups and gender.

62. These outcomes include:

(a) ***Social inclusion:*** Both project areas in Siem Reap and Phnom Penh, the improved infrastructure is expected to reduce the current situation of marginalization and social exclusion, by providing better access to services, markets, and relationships with other groups.

(b) ***Empowerment:*** The program is based on a demand-driven approach to infrastructure and services. With strengthening both of local communities and communes' abilities to articulate demand and hold institutions accountable for providing services, along with technical assistance, improved transparency and capacity building at different levels, the project is expected to strengthen empowerment processes in rural and urban areas of Siem Reap and Phnom Penh poorest areas.

(c) ***Gender equity:*** Provision of basic infrastructure services, particularly in the areas of water and sanitation, has direct and positive benefits particularly for women's working hours and

reduction of drudgery. The project will also seek to enhance women's participation in community decision making.

63. The members of SHGs and potentially other households in target communes/Sangkats will benefit from support through producer groups (PGs) and potentially agricultural cooperatives (ACs). Beneficiaries of skills-building and job placement support will largely be from ID Poor households, but all community members will be invited to apply and be accepted based on the satisfaction of ID Poor criteria. An ID Poor score that is above the ID Poor 1 and 2 level may be utilized to allow for inclusion of vulnerable, "near poor" households. Potentially all commune/Sangkat or village households could benefit from infrastructure improvements (i.e. water supply or community road repair), but preference will be given to priorities expressed by poor households, so these households should benefit most.

64. In terms of the selection of beneficiary communes in Siem Reap, the project will cover all communes not covered by the Tonle Sap Poverty Reduction and Smallholder Development (TSSD) Project. In Phnom Penh, target Sangkats would be a combination of the poorest (using ID Poor data) and most vulnerable (highest number of households from urban poor communities), allowing for inclusion of both peri-urban and central-urban districts/khans.

3.2.1 Stakeholder Analysis.

65. Based on the overall analysis of institutional actors, the SA includes a stakeholder analysis. This is not limited to beneficiaries or those directly affected by the project. It also includes groups who may influence the outcome of the project, directly or indirectly. The SA highlights the heterogeneity of actors and interests in different communes/sankas and settings. For each of the stakeholder groups, preliminary data contains a description of the stakeholders and their key characteristics, as well as their interest or stake in the project and their level of influence over outcomes. Some of the broad categories of groups analyzed are (i) communities; (ii) village authorities; (iii) Communes/Sangkats authorities; (iv) Provincial and Municipal government; civil society organizations; (v) private sector; and (vi) others. Each of these categories is broken down into specific actors. For example, among province and municipality level stakeholders.

66. From the stakeholder analysis, the clear conclusion is that the LEAP project is demand driven and enjoys broad support among many different actors. The key risk factor lies with the interface between the community and the project in the form coercion for land donations, transparency and oversight in budget allocations to avoid "elite capture" is therefore essential, and the social safeguards (both the ESMF and RPF) provides guidance on how communities can be assisted in this through access to information on budgets, norms and standards, as well as strengthening of their institutions and mechanisms for social auditing.

67. It is interesting to note from the SA, that civil society organizations are expected to play an active role in the urban component and the rural areas as well. The analysis notes that CSOs are generally in favor of urban poor development. From consultations with the communities themselves, it is however clear that better access to basic infrastructure, markets, education and health services is a cultural change that the communities themselves wholeheartedly support and embrace. In discussions with MoI and PPC the Bank has explored whether high quality NGOs/CSOs should \ play a role as implementing partners of the project such as local capacity building, contribution to conflict resolution mechanisms, or participation in monitoring or supervision. This is being considered, and may be piloted in selected areas.

3.2.2 Social Risk/Impacts.

68. The SA developed analysis of risks related to the social context. There are various reasons or sources for these risks, including:

(a) Positive benefits to urban and rural people including poor people, women, and marginalized groups, in the form of improved livelihoods, access to critical infrastructure and services, as well as income generation activities;

(b) Small pieces of land may need to be acquired for the benefit of communities for income generating purposes such as small grain storage, cattle sheds, as well as basic public infrastructure such as the upgrading of roads, water supply, irrigation and drainage systems); mainly in the form of voluntary land donation;

(c) Inadequate consultations with vulnerable groups including women and other marginalized groups; and

(d) Ineffective mechanisms for benefit targeting and information dissemination leading to exclusion of marginalized groups from project benefits.

69. A number of institutional risks have also been identified, including:

(a) Lack of resources both human and financial.
(b) Weak planning, implementation and monitoring
(c) Different capacities among different agencies (Urban and Rural)
(d) Difficulties in applying environmental and social frameworks
(e) Communication problems

70. Overall, risks and opportunities have been very well identified as part of project design and already measures to mitigate risks are included in project components; specifically in Sub-Components 1.1 And 2.1: Building and Strengthening Institutions of the Poor; Component 1.3, Improving Basic Services and Community Infrastructure and Component 2.2, Improving Basic Services and Community Infrastructure.

71. To ensure that the activities financed by SHG and Producer Group members do not pose a significant social or environmental risk, the following screening, implementation and monitoring process will be followed (see Section VII)

3.2.3 Indigenous People Groups.

72. The *2009 National Policy on Indigenous Peoples' Rights* recognizes 24 ethnic, indigenous groups in Cambodia. These groups are primarily located in the six northeastern upland provinces of Rattanakiri, Mondulkiri, Stung Treng, Kratie, Preah Vihear, and Kampong Thom. There is only two communes in Siem Reap identified as having ethnic indigenous minorities, the Kuoy indigenous group, located in Srae Noy and Khun Ream communes. This is not one of the project target communes. For Phnom Penh project area, recent information provided by indigenous peoples organization shows that there are individual indigenous families present only in one village in Phnom Penh identified as having indigenous people, the Pors indigenous group, located in Kean Klaing village, Preak Leap Sangkat, and Chrouy Changvar Khan (see table below); however these families are mixed with other Khmer families and they do not practice any collective attachment to the project area and they do not have any customary cultural, economic, social, or political institutions. For these reasons, the Bank's policy on indigenous peoples (OP 4.10) is not triggered, however the Project will use participatory community informed consultation to ensure access of poor and vulnerable households located in the project area.

73. IP's Preliminary data validation has been conducted by Indigenous Rights Active Member (network group) called IRAM, which has a network of 15 provinces and other indigenous NGO-members including: Highlanders Association (HA), Organization for the Promotion of Kui Culture (OPKC), Yak Loam, Cambodia Indigenous Youth Association (CIYA) and other non-IP organizations including Ponlok Khmai, resulted as of October 2016 as in the below table:

Table: Summary - database of villages/communities with ethnic minorities and indigenous people in Cambodia (October 2016 - preliminary data)

No.	Province/Municipality	No. of District	No. Commune	No. Village	Ethnic Minority/Indigenous People
1.	Kosh Kong	1	3	8	Chorng
2.	Kratie	3	18	69	Kouy, Phnong, Khoal, Mil, Kroal, Steang, Thmorn
3.	Kompong Thom	5	14	43	Kouy (Ork – Antror)
4.	Kompong Speu	1	2	18	Suoy
5.	Tbong Khmum	1	3	8	Steang
6.	Bantey Means Chey	2	2	5	Kouy
7.	Pailin	1	1	1	Por, Charay, Kroeng, Tumpuon
8.	Battambang	1	2	6	Poar, Kouy, Charay
9.	Porsat	2	4	16	Poar, Chorng
10.	Prey Veng		15	24	n/a
11.	Preah Vihear	6	22	58	Kouy, Poar
12.	Preah Sihanouk		1	1	Sa Och
13.	Phnom Penh		1	1	Pors, but need verification
14.	Mondulkiri	5	21	94	Phnong, Khoal, Mil, Kroal, Steang, Thmorn, Charay, Ro Uong, Kroeng, Tumpuon, Sa Och
15.	Ratanakiri	9	47	211	Charay, Lun, Kavet, Kachok, Prov, Tumpuon, Phnong, Kroeng
16.	Siem Reap	2	2	4	Kouy
17.	Steung Treng	5	14	45	Charay, Lun, Kavet, Prov, Tumpuon, Phnong, Kroeng, Ro Ang, Kouy, Steang
18.	Oudor Means Chhey	2	3	8	Kouy, Phnong
	Grand Total	46	175	620	

Source of Data: Indigenous People Data - Preliminary Finding, October 2016, IRAM

The below table shown the preliminary data of Indigenous People in Siem Reap and in Phnom Penh:

Code	Province/ Municipal	District/Khan	Commune/ Sangkat	Village	Ethnic/Indigenous People
17030202	Siem Reap	Banteav Srey	Khun Ream	Chhouk Sar	Kouy
17140301	Siem Reap	Varin	Srae Nouy	Srae Nouy	Kouy
n/a	Siem Reap	Varin	Srae Nouy	Prey Khnol	Kouy
17140301	Siem Reap	Varin	Srae Nouy	Rolumrun Thmey	Kouy

12100501	Phnom Penh	Chrouy Changvar	Preak Leap	Keam Klaing	Pors (preliminary)

Source of Data: Indigenous People Data - Preliminary Finding, October 2016, IRAM

3.2.4 Population/Demographic Characteristics

(a) Siem Reap

74. The total population is approximately 900,000, which most of them lived in rural areas and 17% to 18% lived in the urban areas. The total amount of households is 136.185, where 13.99% belongs to ID Poor group 1 (19.055 households) and 14.63% to ID Poor group 2 (19.933 households). The population growth in Siem Reap is around 2.6% per annum since last ten years or so, faster than the national average population growth rate of 1.6%. The Province, which is one of the three poorest in the country, has greater intensity of poverty in the northern districts compared to the southern ones. (Source: Siem Reap Province, Livelihood Enhancement & Association of the Poor (LEAP) project, Project Proposal 1st draft, December 10, 2009).

Table 3.5: IDPoor Data in Siem Reap, 2015

District (2015)	Commune (2015)	Village (2015)	Total HHs in (2015)	Poor Level 1 (2015)			Poor Level 2 (2015)			Total Poor level 1&2 HH	Total Poor Level 1&2 %
				HH	People	%	HH	People	%		
Angkor Chum	7	84	13224	595	2503	4.5%	1080	4504	8.2%	1675	12.7%
Angkor Thum	4	27	5704	601	2436	10.5%	961	4069	16.8%	1562	27.4%
Banteay Srei	6	41	8868	728	3096	8.2%	1260	5402	14.2%	1988	22.4%
Chi Kraeng	12	152	29440	2482	10302	8.4%	3557	15618	12.1%	6039	20.5%
Kralanh	10	99	13901	376	1395	2.7%	1064	4342	7.7%	1440	10.4%
Puok	14	132	26140	1868	7343	7.1%	3383	14518	12.9%	5251	20.1%
Prasat Bakong	8	57	13475	594	2456	4.4%	1053	4388	7.8%	1647	12.2%
Siem Reab	13	94	32937	1570	7146	4.8%	2898	13771	8.8%	4468	13.6%
Soutr Nikom	10	113	22460	2275	9781	10.1%	3036	13474	13.5%	5311	23.6%
Srei Snam	6	46	7560	351	1494	4.6%	912	3957	12.1%	1263	16.7%
Svay Leu	5	35	7326	469	2016	6.4%	722	3260	9.9%	1191	16.3%
Varin	5	36	8973	652	2887	7.3%	1144	4804	12.7%	1796	20.0%
12	100	916	190008	12561	52855	6.6%	21070	92107	11.1%	33631	17.7%

Source: Ministry of Planning, 2016

(b) Phnom Penh.

75. ***Migration.*** Most population is preponderance of immigrants. As many less developed countries, Cambodia has been increasingly became urbanization. Since 1975, the population was only 10.3% and increased to 15.6% in 1999. In 2011, based on Urban Reclassification conducted by MoP, urbanization rate was 27.1%. This figure increased to 30% in 2015 (ADB: Urbanization study, 2015). The vast majority of migrants are from other parts of the provinces, and the town continues to be overwhelmingly Khmer, but migrants also come from as far as Phnom Penh to seek work in the town. Phnom Penh alone absorbed roughly 50% of the total rural to urban migrations. The figures reflect several factors: the movement of populations under stress; rural-urban migration, natural growth of urban centers, and municipal/capital boundary expansion. The process is writ large in Siem Reap and no less than 55% of

Siem Reap District's population was migrants in 1998, predominantly (74%) from other parts of the Province.

Table 3.6: IDPoor and Urban Poor Community Data in Phnom Penh Capital, 2015

Khan	Sangkat	Village /Krom	HHs	IDPoor1			IDPoor2			Total Poor Level 1 &2 HH	Total Poor Level 1&2 HH %	Urban Poor Communities, 2015					
				HH	People	%	HH	People	%			# UPC	# House	# Family	# People	%	Location code
Chamkar Morn	12	95	24,015									9	635	681	2727	2.8%	2, 3, 6
Daun Penh	11	134	15,976									17	838	901	3874	5.6%	1,2,5,6,9
Prampi Makara	8	66	13,388														
Tuol Kork	10	143	26,658									19	2307	2828	10684	10.6%	1,2,3
Dangkor	13	87	17,854	1100	4585	6.2%	1389	6089	7.8%	2489	13.9%	9	977	1047	4832	5.9%	3,4,5,6,11
Mean Chey	7	59	30,984	464	2230	1.5%	590	3237	1.9%	1054	3.4%	28	2118	2283	11147	7.4%	2,3,4,5,6,8,11
Russey Keo	7	30	18,214	466	2118	2.6%	805	4988	4.4%	1271	7.0%	38	2065	2381	10904	13.1%	1,2,3,4,5,6,11
Sen Sok	6	44	23,339	452	2511	1.9%	619	3190	2.7%	1071	4.6%	22	2569	2697	11685	11.6%	1,2,3,6,11
Por Sen Chey	13	163	36,613	702	2801	1.9%	825	4197	2.3%	1527	4.2%	12	1858	2085	7483	5.7%	3,6
Chroy Changvar	5	22	11,766	338	1767	2.9%	1061	3618	9.0%	1399	11.9%	14	871	850	3597	7.2%	3,6,11
Preak Pnov	5	59	10,837	1001	3935	9.2%	760	3510	7.0%	1761	16.2%	10	1470	1498	5794	13.8%	2,3,6,11
Chbar Ampov	8	49	26,489	1707	8056	6.4%	2922	14378	11.0%	4629	17.5%	37	1754	2296	10269	8.7%	3,4,6,10,11
12	105	951	256,133	6230	28003	2.4%	8971	43207	3.5%	15201	5.9%	215	17462	19547	82996	7.6%	

Source: Ministry of Planning on IDPoor, 2016, and PPC on UPC Data, 2015

Location code:

Code 1. Community settle along railway	18 communities
Code 2. Community settle on public road	17 communities
Code 3. Community settle on canal &drainage	24 communities
Code 4. Community settle on river side	28 communities
Code 5. Community settle on public lake	03 communities
Code 6. Community settle on provided land by government	69 communities
Code 7. Community settle on temporary renting land by government	0 communities
Code 8. Community settle on temporary renting land (by private owner)	07 communities
Code 9. Community settle on roof top of the old building	09 communities
Code 10. Community settle on pagoda, crematorium and cemetery	03 communities
Code 11. Community settle on other locations – none of the above code	73 communities
? Community do not tell their Situational Status	09 communities

SECTION IV: POLICY AND REGULATIONS

4.1 National legislations, Regulation and Policies

4.1.1 Introduction

76. Overall management of the environment is under the responsible of the Ministry of Environment (MoE), which was created in 1993. The MoE is responsible for implementation of the Law on Environmental Protection and Natural Resources Management. At the provincial and city levels, there are corresponding provincial/city environment departments. These local departments have the responsibility of enforcing the environmental legislation coming under the competence of the MoE. However, the daily operation functions of these departments would normally be under the direct control of the provincial authorities.

77. The framework law calls for an initial environmental impact assessment (IEIA) or full environmental impact assessment (EIA), depending on type and activity and the site of the project (Sub-Decree on IEIA/EIA process (article 1 and 2 of Sub-Decree of IEIA/EIA process), to be conducted for every private or public project, to be reviewed by the MoE before submission to the Government for a final decision. All proposed and existing activities are to be covered under this requirement. Recently, the Declaration on General Guidance, N 376 BRK.BST, for conducting initial and full environmental impact assessment has been signed and enacted on September 02, 2008 by the Minister of Environment. The goal of the guidance is to implement initial environmental impact assessment (IEIA), full environmental impact assessment (EIA), and to provide general guidelines and checklists. IEIA or EIA is required for every project, depending on type and activity and the site of the project (Sub-Decree on IEIA/EIA process (article 1 and 2 of Sub-Decree of IEIA/EIA process). The Ministry of Environment is responsible for reviewing the EIA reports, the required follow-up, and monitoring.

78. This Chapter briefly describes the national legislative and policy framework which is relevant to the proposed LEAP project.

4.1.2 Environmental Protection and Natural Resource Management Law

79. The Environmental Protection and Natural Resources Management Law was enacted by the National Assembly and launched by the Preah Reach Kram/NS-RKM-1296/36. It was enacted on November 18, 1996. This law has the following objectives:

(a) To protect and promote environment quality and public health through prevention, reduction and control of pollution,
(b) To assess the environmental impacts of all proposed projects prior to the issuance of a decision by the Royal Government,
(c) To ensure the rational and sustainable conservation, development, management and use of the natural resources of the Kingdom of Cambodia,
(d) To encourage and provide possibilities for the public to participate in the protection of environment and the management of the natural resources, and
(e) To suppress any acts that cause harm to the environment.

80. Under this law the developers or project owners need to prepare an IEIA or EIA report for their proposed or existing development projects.

4.1.3 Environmental Impact Assessment Process Sub-Decree

81. The sub-decree No 72 ANRK.BK on Environmental Impact Assessment Process dated 11 August 1999. The key relevant articles are as follows: The main objectives of this sub-decree are:

(a) To determine an Environmental Impact Assessment (EIA) upon every private and public project or activity, it must be reviewed by the Ministry of Environment (MoE), prior to the submission for a decision from the Royal Government.
(b) To determine the type and size of the proposed project(s) and activities, including existing and ongoing activities in both private and public sector prior to undertaking the process of EIA.
(c) Encourage public participation in the implementation of the EIA process and take into account their conceptual input and suggestions for re-consideration prior to the implementation of any project.

4.1.4 Water Pollution Control Sub-Decree

82. The sub-decree No 27 ANRK.BK on Water Pollution Control is dated 6 April 1999. The purpose of this sub-decree is to regulate water pollution control in order to prevent and reduce the water pollution of public water areas so that the protection of human health and the conservation of bio-diversity will be ensured, Article 1.

83. This sub-decree applies to all sources of pollution and all activities that cause pollution of public water areas, Article 2. The sub-decree also gives the pollution types, effluent standards, and water quality standards in different areas. Concerning the project some water quality standard for the public water areas will be applied.

4.1.5 Solid Waste Management Sub-Decree

84. The sub-decree No 36 ANRK.BK on Solid Waste Management is dated 27 April 1999. The purpose of this sub-decree is to regulate solid waste management in a proper technical manner and safe way in order to ensure the protection of human health and the conservation of bio-diversity.

85. This sub-decree applies to all activities related to disposal, storage, collection, transport, recycling, dumping of garbage and hazardous waste.

4.1.6 Air Pollution Control Sub-Decree

The sub-decree N0 42 ANRK.BK on Air Pollution Control and Noise Disturbance dated July 10, 2000. This sub-decree has a purpose to protect the environment quality and public health from air pollutants and noise pollution through monitoring, curb and mitigation activities. This sub-decree applies to all movable sources and immovable sources of air and noise pollution.

4.1.7 National IPM Programme, 1993

86. The Integrated Pest Management (IPM) in Cambodia was established in 1993 after conducting a national workshop on “Environment and IPM”. The overall goal of National IPM program is to promote food security in Cambodia by enhancing the sustainability of intensified crop production system through the promotion of integrated crop management (ICM) skills at farm level. The objectives of this program are:

(a) to reduce dependence on agricultural chemical, especially pesticides, in agricultural production and to minimize hazards to the human health, animals and environment,

(b) to develop the capacity of farmers and agricultural technical officers in conducting training and experiments so that they are able to identify problems occurring in agricultural production and find appropriate solution to deal with the problem by themselves,
(c) to educate farmers on agricultural technology by enhancing their knowledge on field ecology and by developing skills among farmers in monitoring and analyzing field situations that enable them to manage crops properly.

87. Under LEAP project, organic farming with no pesticide use will be promoted in particular in Siem Reap in line with MAFF policies aiming at supply organic commodities and products to five stars hotel and restaurant.

4.1.8 Government's Policy, Regulations, and Guidelines on Land Acquisition and Resettlement [see the RPF]

4.1.8.1 National Legal Framework on Compensation.

88. **The 2001 Land Law** states that no person shall be "deprived of his or her ownership unless this action is for the public interest". The law recognizes that deprivation of ownership opens right to "payment of just and fair compensation in advance". The Constitution states that "the right to confiscate possessions from any person shall be exercised only in the public interest" and opens right to just compensation. However, there are currently no laws and regulations that govern the process of acquisition and the determination of just compensation.

89. Those affected by national infrastructure projects such as major roads do receive compensation. Cash compensation is normally provided when houses are impacted. There are local projects such as rural roads where no compensation is provided. This is because all in the local communities are seen as benefiting from the new road. However the relatively new Commune Planning and Investment Guidelines specify safeguard measures for those affected by small infrastructure development.

4.1.8.2 National Legal Framework on State Land Encroachment.

90. **The 2001 Land Law** has drawn a clear line between those who opened land for residential or farming purposes before August 30th, 2001, and those who did so after this date. In the first case, occupants may be recognized as legal occupants of State land in the future when land is registered as State private land. In the second case, occupants are illegal. Article 18 of the Land Law provides strong tools for evicting encroachers. They do not "have the right to claim compensation or reimbursement for expenses paid for the maintenance or management of immovable property that was illegally acquired" (Article 19).

91. **A Circular No. 02** issued by the Royal Government of Cambodia on Illegal Occupation of State Land dated February 26, 2007, states that while occupation of land as a form of possession became illegal after August 30th, 2001, there is a need for the state to undertake Social Land Concessions (SLCs) for poor people and disadvantaged groups to meet their needs for land deriving from population growth, demobilization of soldiers, and land loss due to natural disasters. However, the current anarchical illegal taking of state land also provides opportunities for land speculators and powerful persons to take illegal possession of state lands though various means. To address this situation, Circular Number 02 determines that:

(a) Generally, the illegal state landholders, especially land speculators, are not entitled to compensation (Para 6.1 in Circular No. 02).

(b) Illegal state landholders, who are poor families and landless or lack land and are disadvantaged, would not be entitled to compensation, but may receive preferential treatment to obtain an appropriate amount of land for their livelihood (Para 6.2 in Circular No. 02).

(c) For state private land, this can be done through sale, lease, gift, usufruct (right to use and enjoy the fruits of the land for life), social land concessions, economic land concessions, or use permits. A decision on specific options must be based on coordination between the territorial authority, the State Land Trustee Authority, and the person using the land, and be based on a land use plan. (Para 7.1 in Circular No. 02).

4.1.8.3 Consistency between National Legal Framework and World Bank.

92. *Safeguard Policy OP 4.12.* Land acquisition and involuntary resettlement may cause severe long-term hardship and impoverishment unless appropriate mitigating measures are carefully planned and carried out. Land acquisition and involuntary resettlement will be avoided or minimized to the extent possible in the LEAP project, both with regard to the rural and urban development components. The Resettlement Policy Framework, which is a companion to this ESMF in the management of social and environmental risks, establishes equivalence between current Cambodian law and the World Bank's OP 4.12 on Involuntary Resettlement by defining measures to fill the gaps between the national legal framework and OP 4.12.

How is Involuntary Resettlement Defined in the World Bank Safeguard Policy?
"Involuntary" resettlement designates not only cases where people may be physically displaced by a project, but also cases where land is taken for project purposes, resulting in people losing access to land or other resources from which they derive their income, or lose a house or other assets.

93. **OP 4.12** (Para 15) does provide for resettlement assistance to "those who have no recognizable legal right or claim to the land they are occupying". In such cases, OP 4.12 does not require compensation for the land itself, but for loss of assets other than land (such as buildings, trees, standing crops), and resettlement assistance may consist of cash, other assets, employment, or land as appropriate. OP 4.12 does not distinguish between poor and rich squatters and encroachers, but accords both the same entitlement to resettlement assistance. Thus, there are two points of inconsistency between the Cambodian legal framework and OP 4.12, which the RPF addresses.

94. The Department of Social Affairs, Veterans and Youth Rehabilitation will cooperate with PLUAC and the District Working Groups to identify the poor at the request of the village chief and Commune Council. Prakas No. 263 includes a format with a methodology to assess incomes.

4.2 World Bank Operational Policies

95. Environmental safeguard policies of the World Bank (WB) are in place to ensure that development projects that receive World Bank support are environmentally sound. Effective application of safeguard policies results in projects that are responsive to local environmental and social imperatives and are consistent with the country's long term development strategy.

96. The World Bank Operational Policies which are relevant for this project are OP 4.01 Environmental Assessment, OP 4.04 Natural Habitats, OP 4.11 Physical Cultural Resources, and Involuntary Resettlement OP 4.12. OP4.01 is an umbrella policy that covers both environmental and

social assessment, including the screening of projects and assigning them as Level 1, Level 2, Level 3 and Level 4 (does not have adverse effects, has minimal adverse effects, less significant and significant).

4.2.1 Environmental Assessment (OP 4.01)

97. Potential LEAP activities such as livestock raising, vegetable farming, rice cultivation of which focusing on the organic farming, fishery, home business and small-scale infrastructure (water supply, irrigation system, drainage system, etc.) that may create nuisance such as air/order quality from livestock raising and rice mill, soil erosion, pollution of surface and ground water resulting from both rural and urban intervention. Given the small scale nature of these activities the impacts are minor, temporary, site specific and manageable through project design and construction management techniques included in the Commune/Sangkat Fund's Project Implementation manual, the project is category "B".

4.2.2 Natural Habitats (OP 4.04)

98. It is expected that some of the communities who benefit from the LEAP project live inside or nearby natural habitat such as Ton Le Sap. Minor disturbance and site specific impact may occur during the implementation and operation of subprojects, however, the impact is expected to be minor and site specific and it can be mitigated through the application of ECOP included in this ESMF. The ESMF includes screening procedure to (i) determine whether the proposed facilities are in a critical or non-critical natural habitat and (ii) avoid any significant conversion or degradation of any critical natural habitat.

4.2.3 Physical Cultural Resources (OP 4.11)

The WB OP 4.11 assists countries to avoid or mitigate adverse impacts on physical cultural resources from development projects that it finances. The impacts on physical cultural resources resulting from project activities, including mitigating measures, may not contravene either the borrower's national legislation, or its obligations under relevant international environmental treaties and agreements.

99. LEAP will trigger OP4.11 as a precautionary measure as the project will finance infrastructure investment in Siem Reap, a province of major cultural heritage. As part of the initial social and environmental screening process, sub-project proposals will be screened for any potential impacts on religious or cultural areas to ensure that sub-project design and implementation avoid any such impacts. Under the LEAP pilot project, sub- projects were initiated in close consultation with locals and any areas of potential PCR's were avoided. Additionally there were no chance finds recorded in any project activity. A chance find procedure of physical cultural resources will also be included in civil works contracts. as follows:

- If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during the civil work, the Contractor shall:
- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects; and
- Notify "any cultural heritage" found to the government implementing agency or the relevant provincial Culture Department as early as possible.
- Civil work may resume only after permission is given from the implementing agency or the provincial Culture Department.

4.2.4 Involuntary Resettlement (OP 4.12).

100. According to this policy, involuntary resettlement should be avoided where feasible, or minimized, exploring all viable alternative project designs.

101. Where it is not feasible to avoid resettlement, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient investment resources to enable the persons displaced by the project to share in project benefits. Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs.

102. Displaced persons should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher

103. The policy covers direct economic and social impacts that both result from Bank-assisted investment projects, and are caused by (a) involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets; or (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location; or (b) the involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons.

104. The policy applies to all components of the project that result in involuntary resettlement, regardless of the source of financing, and to other activities resulting in involuntary resettlement, that in the judgment of the Bank, are (a) directly and significantly related to the Bank-assisted project, (b) necessary to achieve its objectives as set forth in the project documents; and (c) carried out, or planned to be carried out, contemporaneously with the project

105. Screening the program activities and a consideration of the type of future investments planned, besides the requirements of the Bank Safeguard policies, has led to the conclusion that the Bank safeguards policy on Environmental Assessment (OP4.01), Natural Habitats (OP 4.04), Physical Cultural Resources (OP 4.11), Involuntary Resettlement (OP 4.12) should be applied.

106. The ESMF has been designed so that all investments under the LEAP project will comply with the national environmental laws/regulations and the World Bank Safeguard Policies. ESMF reports will include mechanisms to determine and assess future potential environmental impacts of the selected subproject investments. They will then set out mitigation, monitoring and institutional measures to be taken during implementation in order to eliminate adverse environmental impacts, offset them, or reduce them to acceptable levels.

SECTION V: LESSONS LEARNED FROM THE LEAP PILOT PROJECT

107. This ESMF is informed by the analysis conducted under the LEAP pilot phase which was implemented from 2010-2012. In preparation for the pilot project and eventual project expansion, an Environmental Assessment and a Social Assessment were prepared covering the target areas in Siem Reap Province. An Environmental Management Framework (EMF) was developed and applied during the pilot phase and the lessons of implementation are incorporated into this ESMF. As Phnom Penh has been added as a target project area subsequent to the pilot phase, an Urban Poor Community Needs Assessment was conducted in selected communities in Phnom Penh in 2015 to better understand the needs of target communities and the context for addressing poverty in the urban setting. This Needs Assessment has further informed the design of this ESMF.

108. As the pilot phase of LEAP was only implemented for a limited period from 201-2012 and the activities implemented were limited to the establishment and initial capitalization/financing of self-help groups, the safeguard lessons are of limited application to the proposed project expansion which also includes investments in small-scale infrastructure.

109. For the pilot phase, a two-step screening process was applied:

(a) ***Micro-investment planning***. Community professionals, and the NGOs assisting the self-help group (SHG) member households to develop micro-investment plans (MIPs), screened the MIPs for possible environmental and social impacts including land acquisition to ensure that the environmental guidelines were followed.

(b) ***Micro Investment Plan (MIP) activity design and implementation***. The individual household ensures that the environmental guidelines are followed during activity preparation, including the design of the investment activities to ensure that the proposed measures are taken into account. The community professionals, the NGO and the Provincial PIU staff ensure that the guidelines and the ESMF are followed and complied with by the households.

110. **Lessons learned**: The MIP screening process was applied during the pilot by CPs and NGOs and no activities were proposed that were inconsistent with the environmental guidelines. Proposed activities included vegetable gardening, chicken raising, pig raising and handicrafts. CPs and NGOs also monitored household investments to ensure that the Technical Environmental Guidelines (TEGs), the key design and implementation measures that need to be taken into account at all phases of each activity type (i.e. pig raising or vegetable farming). As the TEGs were brief and easily understandable by participating households, they were followed. Unfortunately, since the pilot project duration was short, some households had difficulty maintaining animal health in the absence of technical support. The proposed phase will address this challenge as it will be implemented over a longer duration and the Ministry of Agriculture, Fisheries and Forestry, will play an integral role in project implementation.

111. As the coverage of LEAP increases, and the commune, district and provincial governments begin to take over some of the activities implemented by the NGOs under the pilot, particularly safeguard screening and monitoring, a significant capacity building effort will be needed. Training will need to be conducted by qualified environmental specialists, early on in project implementation, to ensure that all of the roles defined in this ESMF are well understood and implemented accordingly.

112. Experience with the implementation of the Commune/Sangkat Fund indicates that while there are clear procedures and responsibilities for safeguard monitoring of small-scale community infrastructure sub-projects, this does not take place in a systematic fashion. As such, the LEAP implementing agencies at the national and provincial levels, in particular, will need to review the coverage of social (i.e. land donation) and environmental monitoring efforts and address any insufficient coverage with additional training or resources persons, if needed.

SECTION VI: KEY SOCIAL AND ENVIRONMENTAL IMPACTS

6.1.1 Sub-Component 1.1: Building and Strengthening Institutions of the Rural Poor

113. Thi subcomponent will finance capacity building for the formation and sustainability of SHGs and Commune-level Federations of SHGs. These activities would not have significant adverse impacts that could not be mitigated through mitigation measures under this ESMF. Seed grants and Community Livelihood Investments Fund (CLIF) grants to Producer Groups and SHGs will be used to finance a range of livelihood activities such as animal raising, vegetable gardening, fishing, handicrafts and others – all

done at the individual household level. Their environmental impacts are not expected to be adverse and significant. The impacts, if any, are expected to be benign, temporary and self-contained. These may include mild pollution of surface and ground water from animal wastes and agricultural farm inputs, loss of soil fertility, and odor/smell from animal wastes. Mitigation measures such as biogas unit and organic farming will be promoted to avoid air and water pollution. Introduction of exotic species for backyard culture of fish that may cause biological contamination of endemic and/or local aquatic species will be avoided. The illegal fishing technology/equipment (wrong size of fishing gears or electrical shock) will be prohibited and included in the negative checklist.

6.1.2 Sub-Components 1.2 and 2.1: Increasing Access to Markets and Income Generating Opportunities

114. These two sub-components (rural and urban) will finance two main types of activities: (a) technical assistance to producers on agriculture, livestock, fisheries, handicraft, business management and other small-scale business activities; (b) training and advice aimed at new or improved employment for poor household members. As both of these types of activities are in the form of advice or training, they do not anticipate to pose any adverse environmental and social impact. It will be important, however, that training and advice for producers is consistent with the safeguard policies of the World Bank, in particular, those triggered for this project and taking into an account on the gender sensitive. Women should have the access to the training or information equally men.

6.2 Sub-component 1.3 and 2.2: Improving Basic Services and Community Infrastructure

115. Small-scale infrastructure - These two sub-components (rural and urban) will primarily finance the construction of small-scale community infrastructure through the application of the CSF-PIM which included environmental and social safeguard risk mitigation procedures which have been in use since 2003 and which have been utilized by other development partner investments, including the World Bank-finance Rural Investment and Local Governance Project (RILGP). The types of activities eligible for financing is mostly open, except for a list of “ineligible” activities that ensure compliance with World Bank and Royal Cambodia Government policies. The list of ineligible activities is listed in Annex 3.

116. Beside the positive impacts associated with small-scale community infrastructure, construction and operations of the proposed facilities will have some potential negative socio-environmental impacts and risks. The objects that may be affected by construction or operational activities under LEAP could be:

(a) Land acquisition (voluntary land donation)
(b) Planning capacity at commune/sankat level
(c) The air environment: dust, noise, odor, vibration
(d) Water bodies: changes in turbidity, sediment, dissolved and undissolved pollutants coming into water
(e) Soil, land: erosion and wastewater
(f) Biological resources: grass/vegetation cover, shrubs, trees, plants, animals, forest, etc.
(g) Landscape, topography: slope, hills
(h) Cultural objects, structures such as monuments, statues, graves, artefacts, sacred trees, temples, church, etc.
(i) Existing facilities at the site, such as roads, water supply, drains, etc.
(j) etc.

Table 6.1: Potential negative impacts of Sub-Components 1.3 & 2.2 on infrastructure services

	Potential Impacts/ Risks	Description of the issues/risks	Typical activities that cause the potential impacts/risks
		CONSTRUCTION PHASE	
1.	Damages or loss of vegetation cover and trees	Vegetation cover and/or trees at the construction site (road, drainage system, etc.) or any other location to be used by the Project may be removed or disturbed during construction phase. This impact can be avoided, minimized or mitigated.	• site clearance for construction site, camps, • construction material exploitation and/or storage
2.	Loss or degradation of valuable natural/ ecological resources	• If sand, gravel and stones from river bed is extracted, flowing pattern of river may be seriously affected. The river may scour around bridge piers and abutments and endanger their stability. The river may erode other sections of the river beds and banks and thereby cause serious problems elsewhere • Some sites may be very important to local communities in cultural/religious/ historical/archaeological aspects. • If construction takes place at or nearby such sensitive socio-environmental features, threats or serious/ permanent damages may be caused to such sites. • Human access to undisturbed area may cause damages to (from plant collection/removal, wildlife catching, hunting, fire setting, littering, etc.) damage to vegetation cover as habitats of wildlife or cause fire risks.	• Site clearance • Construction • Extraction natural resource for construction materials at important sites particularly gravel from river beds, etc.
3.	Degrade existing landscape	This impacts may occur when vegetation cover/top soil is removed, or a man-made structures are introduced into least disturbed nature, or when new structures obstruct view to existing beautiful landscape	• Site clearance • Construction of new facilities in areas with beautiful/valuable landscape
4.	Unsuccessful land acquisition	Small amounts of land may need to be acquired either by donation or through compensation for agriculture, livestock and fisheries activities as well as small-scale productive infrastructure (e.g. post-harvest processing equipment, storage facilities and poultry shed, etc.).	• Presence of contractor at the work site • Construction commencement or ongoing activity
5.	Physical Cultural Resources are present at a sub-project location	During the planning or construction of a sub-project, physical, cultural, and religious resources are identified	• site clearance for construction site, camps, construction material exploitation and/or storage •
6.	Solid Waste generation	Excavation works generate waste Waste is also be generated from unused materials: timber/glass/metal, packaging materials or by the workers: lunch containers,	• Excavation • Construction • Workers daily domestic

	Potential Impacts/ Risks	Description of the issues/risks	Typical activities that cause the potential impacts/risks
		leftover food, etc.	activities
7.	Wastewater generation	• Wastewater generated by workers from washing and toileting. • Uncontrolled generation of wastewater may cause environmental pollution, nuisance, and health concerns to workers and the public	• Excavation • Use of construction materials • Workers domestic activities at the sites
8.	Chemicals, hazardous wastes generation	Used Oil, paints, lubricant, batteries, and asbestos-containing materials are toxic. Some of the solid waste may be cross-contaminated with oil, paints, etc. that may be toxic and pose public health risk	• Site clearance • Vehicle maintenance • Painting
9.	Dust, air pollution	Exposure to high level of dust and smoke may have health impact: affect respiratory system, eyes	• Site clearance • Excavation • Running engine Machinery • Construction material loading and unloading
10.	Noise and Vibration	Noise disturb hearing/listening activities and may cause stress/headaches Vibration may cause cracks /damages to existing structures	• Pile driving • Soil compaction
11.	Increased erosion risks/siltation/ sedimentation	• Slope become less stable when ground surface is disturbed; water can run faster and can erode the soil on bare slop where vegetation cover does not exist. Therefore, erosion, land slide risks would be increase if a building is located on a hilly slope or construction activities disturb slops. • The eroded top soil will ends up at downslope then being wash down further by rain water causing highly turbid water and river bed/stream siltation/sedimentation	• Site clearance • excavation activities create unsealed/barren area without vegetation cover during and after construction • Construction works carried out on steep and/or weak slops
12.	Water quality degradation	• Waste and wastewater, construction materials from construction may be leaked or disposed of into water sources nearby construction sites or downstream of construction sites. • Water quality in streams and rivers may also be degraded if soil from slopes in the catchment run into water bodies due to erosion/landslide initiated by earthworks at the sites. • Careless water use activities by workers, for example washing working tools directly at water sources. • Oil, fuel or any other liquid substance used during construction, including on-site machinery maintenance, may be leaked or spilled into the soil. Then rainwater may wash such contaminant to nearby water bodies	• Construction of bridges on streams, river beds • Construction waste and waste water discharge • Tools and machinery washing and maintenance

	Potential Impacts/ Risks	Description of the issues/risks	Typical activities that cause the potential impacts/risks
13.	Impacts Cultural sites such as church, historical site, grave yard, etc.	Cultural sites may be affected with dust, noise from material and waste loading/disposals Some artefacts may expose during execution of earthworks at the sites	• Dust and noise generated activities • Loading/unloading construction materials and wastes
14.	Social disturbance to local community: ✓ traffic/ transportation ✓ water supply ✓ irrigation ✓ farming ✓ - Community meetings events/ etc.	• If the works are carried out on or near existing road or drainage system, construction activities may disturb or disrupt traffic on the existing roads. • Excavation may also cause loss to vegetation cover or disturbance to the ground • Excavation works may disrupt the operations thus the services provided by local existing facilities such as water supply, drainage, power supply etc. if the pipes/lines cross excavated areas • Stockpiles formed from excavated materials • If construction activities takes place near farming area, access to farm land may be interrupted; materials, waste, and wastewater from construction sites may enter farms causing productivity reduction and social conflicts • If a construction site is located near community center, material loads or noise from material cutting, drilling, welding, may block access to community centers or disturb hearings in public meetings.	• Site clearance • Excavation • Machinery operation • Temporary blockage of rivers/streams/ existing irrigation canal for construction • Temporary block of road for construction of connection section to new alignment
15.	Health/ sanitation /hygiene in local community	• Stagnant water formed from disturbed area at construction site is favor for mosquito breeding, which is a vector of water-borne diseases • Waste generated from workers staying at the site may attract vermin and insects • Wastewater generation may cause nuisance and health risks to human	• Excavation create holes or low laying spots
16.	Safety risk to community	Construction-related activities may cause safety risks for local community, particularly children if they access to open holes or present at the site during materials transports/loading/unloading.	• Transportation of materials/wastes • Materials loading/unloading • Excavated holes • Machinery operations
17.	Workers health and safety	• Unprotected holes at the sites, exposure to traffic at road side, improperly installed electrical wires, operating and handling of construction plants, machinery and tools may cause safety risks to workers	• General construction activities, operations of tools and plants
OPERATION PHASE			

	Potential Impacts/ Risks	Description of the issues/risks	Typical activities that cause the potential impacts/risks
1.	Water/soil pollution	Leakage or discharge of wastes and wastewater generated from the facilities provided	Water use activities taking place at buildings/ shelters
2.	Water/soil pollution	• Effluent from septic tank can pollute groundwater or surface water, particularly if piped to an open drain • Partly treated effluent from septic tank can easily pollute the groundwater in the dug well, even after many years; • Polluted surface water from around the septic tank may percolate into the groundwater	Sanitation facility
3.	Visual impacts	if the facility outstand in public area and degrade the surrounding landscape value	Sanitation/ drainage facilities
4.	Nuisance, odor, Unhygienic condition, public health risks	• Septic tank effluent is smelly thus may cause nuisance to the public when being felt/seen • Septic tank effluent is only partially treated thus can spread infection and disease thus pose health risk. • Lack of proper drain around public taps create muddy mess around the tap or in the yard. Standing water become mosquito breeding ground and cause inconvenience for water users • Open or missing facet can spill a lot of water in a day. Valuable water that other users may need is wasted	Sanitation
6.	Unhygienic condition, public health risks	Muddy condition/siltation at public tap lead to unhygienic conditions and/or mosquitoes breeding	Water supply
7.	Conflict with downstream water demands	When inflow water is partly stored at upstream of a water source by one group of water users, other groups may have less access to the water they need and that may need to social conflict between different community groups.	Water supply
8.	Weather extreme events/natural disasters such as storms.	• Weather extreme events or natural disasters can damage the facilities provided by the project or interrupt the services provided by these facilities. • In some cases, weather extreme events such as cyclones may not directly cause damages to the facilities but damages the objects in the surroundings and these objects cause damages to the facilities provided by the Project, for example tree fallings into water towers	Torrential rain

117. The impacts and risks associated with Components 1 and 2 will be addressed through the procedures described in Section VII.

SECTION VII: PRINCIPLES AND PROCEDURES TO ASSESS AND MITIGATE IMPACT UNDER THE LEAP PROJECT

118. The principles and procedures of this ESMF are to assess, identify and mitigate potential adverse social and environmental impacts, and are aligned with the Commune/Sangkat Fund Project Implementation Manual (CSF-PIM). The CSF-PIM is available in English and Khmer on the NCDD website at http://ncdd.gov.kh/en/resources/manual/finish/50-2009/237-commune-sangkat-fund-project-implementation-manual-pim. This LEAP ESMF is also adapted from the environmental and social safeguard framework implemented under Tonle Sap Poverty Reduction and Smallholder Development Project under the leap project (TSSD), which is assisted by ADB and has similar livelihood and community infrastructure services in Siem Reap, but in different communes. The TSSD safeguard documents are available on ADB website or at https://www.adb.org/projects/documents/tonle-sap-poverty-reduction-and-smallholder-development-project-pp. This ESMF makes clear reference to the specific guidelines and forms that are borrowed from or updated based on the Commune/Sangkat Fund Project Implementation Manual. This is the approach that has been used by other Multilateral Development Bank-financed Commune/Sangkat development investments including the TSSD project.

119. There are two different procedures to respectively assess and manage the potential adverse impacts of livelihood investments under Sub-component 1.1 and infrastructure services under Sub-components 1.3 and 2.2. Each procedure and steps are described in the next sub-sections.

7.1 Procedure for Assessing and Mitigating the Risks of Activities Implemented under Sub-Component 1.1 on livelihood improvements

120. As described in the previous section, the types of activities likely to be implemented by SHG and Producer Group members, via their Micro-investment Plans (MIPs) under sub-component 1.1 include animal raising, vegetable farming, rice cultivation, fishing and handicrafts.

121. To ensure that the activities financed by SHG and Producer Group members do not pose a significant social or environmental risk, the following screening, implementation and monitoring process will be followed:

7.1.1 **Step 1 -** The Micro-Investment Plans (MIPs) produced by each SHG will be screened by the Commune Council before recommending the MIPs to the Provincial SMT for seed grant financing to ensure that plans are in accordance with the Technical Environmental Guidelines (TEGs) and the screening form for voluntary land donation protocols (from the RPF) is applied below.

7.1.2 **Step 2 –** The MIPs and CLIF proposals recommended by the Commune Council for seed grant of CLIF financing will be reviewed by properly trained social and environmental safeguard specialists at the provincial level to ensure that TEGs and voluntary land donation protocols are followed.

7.1.3 **Step 3 –** Occasional safeguard spot checks by the provincial safeguard specialists on a periodic basis to ensure that MIP and CLIF activities are being implemented in accordance with TEGs and are not generating any new and significant social or environmental risks.

7.1.4 Technical Environmental Guidelines.

122. The technical environmental guidelines (TEGs) list the key design and implementation measures that need to be taken into account at all phases of each MIP and CLIF activities. The guidelines are based

on the typical activities that were implemented during the pilot LEAP operation and subsequently proposed by local communities during project preparation. Additional guidelines will be created for new types of activities as they emerge during implementation, and included into this ESMF and relevant implementation and training documents.

7.1.5 Guidelines for the animal raising sub-projects (cow and pig farming, poultry raising)

(a) The design of any animal raising sub-project should ensure proper management of animal wastes to ensure no contamination of nearby surface water bodies, ground water sources and to avoid complaints from communities from foul smell,
(b) For pig raising, the construction of septic tank or small biogas digester to manage pig wastes may be considered. The biogas digester will convert methane into fuel for household cooking to replace the use of fuel wood,
(c) For chicken raising, chicken dung may be collected and used as natural fertilizer in vegetable gardens and farms or used in compost as enhancer to speed up the composting/decomposition process,
(d) For cattle raising, wastes may also be used as organic fertilizer or as compost enhancer or feed into biogas digester for cooking gas,
(e) Pigs must be put in a pig pen and not allowed to roam freely and adequate sanitation should be maintained at all time,
(f) If possible, the pig pen should be located in area far away from houses/settlements

7.1.6 Guidelines for fish farming sub-project

(a) The use of local/endemic species should be favored in lieu of introduce exotic species,
(b) Should exotic species be introduced, the design should ensure proper containment of introduce species through the use of safe enclosures so as to not allow the exotic species to escape into open water bodies that may cause biological contamination,
(c) Supplemental feeding using formulated feeds should ensure that enrichment/eutrophication of water bodies will be minimized, if not avoided. This can be done by maximizing primary production (phytoplankton and zooplankton) as the natural source of food for the cultured fish and limiting the use of formulated fish,

7.1.7 Guidelines for vegetable cultivation

(a) Use of organic fertilizers such as compost should be encouraged over the use of chemical fertilizers,
(b) Use of chemical pesticides should also be discouraged and promote cultural, environmental friendly, biological, etc.,
(c) The use of integrated pest management, which is already adopted in some areas in Cambodia, should be promoted and supported,
(d) Multiple and intercropping are encouraged over mono-cultural practices,

7.1.8 Guidelines for rice farming

(a) Promote and encourage the adoption of integrated pest management to manage pest problems,
(b) Promote organic farming

7.2 Procedure for assessing and mitigating the risks of infrastructure services under Sub-components 1.3 and 2.2

123. The small-scale community infrastructure sub-projects implemented under sub-components 1.3 and 2.2 will follow the procedures outlined in the 2009 edition of the Commune/Sangkat Fund PIM. As such that PIM can be used as a reference for implementation. The sections below summarize the social and environmental safeguard provisions in the CSF PIM and the forms that are adapted for the application of these safeguard provisions are included as annexes to this ESMF and the RPF.

7.2.1 Step 1: Safeguards Screening (Form 1 in Annex 4)

124. During the implementation stage, the commune/sangkat council will follow the non-eligibility Checklist below.

125. The Safeguards Screening will be required for each sub-project investment by using the Form 1 (in Annex 3). If the Safeguards Screening reports no adverse environmental and social impacts, no further action such as environmental analysis is required. However, a standardized clause of environmental, health and safety requirements "will be included in the livelihood or infrastructure contract.

126. If the Safeguards Screening confirms some adverse environmental and social risks or impacts, this ESMF will refer to the CSF-PIM for the commune/sangkat council to proceed to the next four steps as they relate to environmental risks[4]:

7.2.2 Step 2: Environmental Mapping (Form 2 in Annex 4)

127. This environmental mapping will show the project area, identify and plot areas, structures and other environmentally important life support systems/features that may be adversely and/or positively affected by the development. The map should show the village area where the project will be located and should also indicate adjacent villages and/or areas bordering the project village. Among the critical information to be plotted on the map are the following:

(a) Topography: Steep slope, slight slope or flat land, with direction of slope;
(b) Soil types: that be easily eroded, slightly eroded or not easily eroded;
(c) Vegetation and land use, especially wetlands and forest areas;
(d) Important cultural sites;
(e) Access routes to the site;
(f) Water courses;
(g) Extents of seasonal inundation;
(h) Areas of human habitation and type of domestic water supply;
(i) National and Provincial protected areas;
(j) Biodiversity conservation areas issued by Ministry of Environment

7.2.3 Step 3: Analysis of the Environmental Impact (Form 3 of Annex 4)

128. The Environmental Impacts Analysis is a checklist of common types of environmental impact caused by the implementation of C/S Projects. A checklist of common types of environmental impacts divides into types; a long term environmental impacts and short term environmental impacts.

[4] These steps follow the environmental safeguard procedure in the CSF PIM, which has been applied under the ADB-funded TSSD and the World Bank-funded RILGP and LASED projects. Steps to manage related to land acquisition are specified in the Resettlement Policy Framework, including references to the appropriate forms from the CSF PIM to be utilized.

129. For each problem identified on the checklist, the Project staff will explain the meaning to the local people and agree with them if this problem is likely to occur. Similarly, each problem identified on the checklist will be classified as “Large Impact,” “Medium Impact,” or “Small Impact or “No Impact”. Large and medium impact implies that the problem is serious enough to require that some changes must be made in the sub-project, to overcome the problem.

130. For problems that are marked as “Large Impact,” or “Medium Impact,” the sites where these problems will occur should be marked on the map. Each site should be labelled with a letter. For example, where damage will be caused by excavating soil at Site A and Site B these will be labelled correspondingly on the map and the form.

131. While conducting the environmental impacts analysis, the Project staff and the local people should consider and make a judgment on the scales of environmental impact. If the implementation of the sub-project has the potential to cause large impacts, then the sub-project needs to be reconsidered and a decision made as to whether it should be cancelled and/or at least substantially redesigned. If the implementation of the project has the potential to cause medium impacts these may often be remedied with design changes and or other preventive measures in the Environmental Management Plan. If the implementation of the sub-project will have only small impacts, these sub-projects can be implemented with the environmental management activities described in contractor’s or service provider's work plan and Environment Management Plan (EMP).

7.2.4 Step 4: Preparation of an Environmental Management Plan (Form 4 of Annex 4)

132. The EMP will show Potential Impacts on environment and what changes to the sub-project are recommended to reduce the bad impacts on the environment. Form 3 and 4 in Annex 3 will be used as a Checklist to identify potential impacts and mitigation measures

133. All the problems shown as having a “Large and Medium impact” should be listed on the EMP together with a series of recommended mitigation measures. The recommendations should be divided into:

(a) Changes in the sub-project design (for example, changing the place for a bridge);
(b) Changes in the way the sub-project is implemented (for example, show which access road the contractor must use to bring materials and equipment to the site); and
(c) Changes in the way the sub-project is operated and maintained (for example, opening water gates slowly to reduce erosion).

134. Changes in the way the sub-project is implemented should be included in the Contractor or Service Provider's Work plan before the contractor or service provider starts work. For each recommendation, the cost of implementing the recommendation should be estimated together with any operational costs that will occur. The person responsible for implementing the recommendations should also be recorded.

135. For each problem, the severity of the problem should be described if the recommendation is implemented (large impact, medium impact, small or no impact) together with any other comments. The EMPs should be discussed with the local people who will be affected by the project before they are endorsed to the *C/S* Chief for approval.

136. The final section of the form is for the Project staff responsible for the analysis to make a summary of the findings and to make his recommendation. There are four recommendations that can be made:

(a) The project will not have any unacceptable big or medium impacts on the environment;
(b) The project will have medium environmental impact, but this impact is mitigated through the implementation of environmental management plan (EMP).
(c) The project design should be changed to avoid unacceptable big or medium impact on the environment;
(d) The project should not be implemented, because the impact on the environment will be bigger than the benefit from the project.

137. After the environmental impacts analysis report has been completed done project staff must sign the Environmental Analysis Report and submit the completed form to the Sub-Management Teams (TSMs) for the rural component in Siem Reap and for the urban component in Phnom Penh. Sub-Management Teams who will check that it has been completed correctly and then submit to the Provincial Department of Environment for Technical Clearance and make a copy of the report for the *C/S* Chief. The process for Technical Clearance of the Environmental Analysis will be the same as for the Project Information and the provincial Department of the Environment has the right to object within **15 days** after they receive the Environmental Analysis.

138. If Provincial Department of the Environment wishes to object, they must inform the Sub-Management Teams who will also inform the commune. If there is no objection within **15 days**, the sub-project is automatically technically cleared and the *C/S* Chief may begin the process of procurement.

139. For sub-projects that are located in communes which are on the Environmental Watch List, the Sub-Management Teams must send the Environment Analysis Report and Environmental Management Plan (if required), in electronic copy to the Safeguards Working Group of NCDD Secretariat for prior checking before submitting these reports to the Provincial Department of Environmental for technical clearance. The Safeguards Working Group of NCDD Secretariat has **10 working days** to check after receiving the Environment Analysis Report and EMP. If the review finds that the Environment Analysis Report and EMP have some mistakes that need to be corrected or there is missing information that needs to be added, the Safeguards Working Group of NCDD Secretariat must inform the Sub-Management Teams by e-mail within **10 working days**. The sub-project cannot be sent to the concerned provincial Line Departments for technical clearance until the no-objection clearance is provided by the Safeguards Working Group of NCDD Secretariat.

7.2.5 Step 5: Preparation of Environmental Monitoring Plan (Form 5 in Annex 4)

140. The final stage of the Environmental Analysis report is the Environmental Monitoring Plan. There are two kinds of monitoring that can be done:

(a) Monitor compliance of the project owner and the contractor with the recommendations of the EA report;
(b) Monitor the actual effects on the environment.

141. The official responsible for the Environmental Analysis should monitor the implementation of the recommendations and report to Sub-Management Teams on this.

142. The *C/S* Chief should arrange for monitoring of the impact of the project on the environment. The Monitoring Plan shows how this will be done. The Monitoring Plan shows:

(a) **What** is to be monitored: For example, “dust from traffic,” “water quality,” etc.
(b) **Where** to monitor;
(c) **How** to monitor: For some kinds of problem it may be possible to make actual measurements (for example, the maximum depth of flooding at a particular location. However, for other kinds of problem, for example dust in the air, we can only measure by asking the people affected, for example, “worse than before/the same as before/better than before.)
(d) **When** to monitor: For example, “one time per month,” “every day during construction,” etc.
(e) **Who** will monitor: Who will be responsible to carry out the monitoring work?

SECTION VIII: INSTITUTIONAL ARRANGEMENTS

143. The organizational structure of the project will involve Government oversight by a Project Coordination Office (PCO) located in the Ministry of Interior (MOI) under the General Secretariat of the MOI. The PCO will facilitate reporting and ensure effective internal and external communications. Two Sub-Management Teams (SMTs) located at Siem Reap Province and at Phnom Penh Capital Hall will be responsible for all operations within each province/municipality with the support of local government, district/khan and commune/sangkat level professionals including social and environmental safeguards specialists and facilitators. Due to the predominance of agriculture and fishery-based livelihoods in rural areas, the Ministry of Agriculture, Forestry and Fisheries (MAFF) will have a specified role as a project implementation agency, providing technical assistance to specified SHG, producer groups and ACs, at the request of the SMTs.

144. The Ministry of Interior, in particular the National Committee for Subnational Democratic Decentralization Secretariat (NCDDS), which it hosts, has experience in safeguards implementation. However, the MOI staff need further support in the procedures for monitoring and recording environment and social safeguard activity. Staff of other implementing agencies also need continued support, specifically during the first year of implementation. Table 8.1 describes the administrative responsibilities which are established in accordance with the LEAP project implementation manual (PIM) and World Bank project appraisal document (PAD).

Table 8.1: Environmental and Social Safeguard Institutional Arrangements

Agency		Safeguard Responsibilities
National Level	Ministry of Interior (MOI)	• Overall supervision and coordination responsibilities regarding the implementation, monitoring and compiling of safeguard reports and compliance with World Bank and government policies. The overall management and operation of the project would be led by the Project Coordination Office (PCO) under the General Secretariat of the MoI. The PCO would be headed by a Project Manager and composed of a team of specialists responsible for project operations including social and environmental safeguards. • The existing Safeguards Working Group, at the National Committee for the Sub-National Democratic Development (NCDD) of MoI, would be responsible for the review and confirmation of the livelihood and infrastructure environmental screening undertaken at the commune/Sangkat and provincial levels based on the Environment Watch-list.

	MAFF	• Provide technical assistance to SHG, producer groups and ACs at the request of Sub-Management Teams (TSMs). • Will manage policy formulation, ensure Project activities are consistent with national agricultural policies and guidelines (i.e. integrated pest management), and provide technical backstopping to province and district agricultural officers to support effective delivery of agricultural services to improve productivity and ensure environmental sustainability.
Sub-National Level	Siem Reap Provincial Administration and Phnom Penh Capital (Sub-Management Teams (SMTs)	• Consolidate the environmental safeguard reports from communes/sangkats and district teams • Send the consolidated environmental report to national level (Ministry of Interior and MAFF) quarterly for integration into the project narrative report and submit to the World Bank. • Provide technical support for Commune/Sangkat Councils in carrying out environmental safeguards screening and environmental analysis if necessary • Monitor and take measures for negative impacts during operation • Appoint staff with specific responsibility for environmental and social safeguards, and they will be assisted by the project Environment Coordinator or trained NGOs.
	District Administration	• In line with the government policy to strengthen roles and responsibilities of the District Administration, a team of full-time District/Khan Facilitators (DFs) would be contracted by each SMT to facilitate and supervise implementation of village and commune level activities including social and environmental safeguards.
	Commune/Sangkat councils	• Conduct a preliminary environmental screening in accordance with the environmental assessment guidelines in the CSF PIM to classify the environmental categories for the identified subprojects; develop environmental management plans if necessary; • Ensure environmental requirements are incorporated in the detail design prior to technical clearance • Monitor environmental impacts during construction and report any negative impacts to DOE and PMU. • Monitor and manage overall negative impacts during operation • Orient the contractors and *SHG level* about the environmental clauses to be included in the bidding and contract. Commune/Sangkat councils will receive support from the Environment Coordinator (EC) or assigned safeguard officer and district technical service officer (TSO)
Others (NGO and Private Sector)	Environment Coordinator (EC) or NGO	• Overall responsible for providing training on basic environmental safeguards and procedure to sub-national staff and the implementation of the ESMF, especially during the first year implementation.
	Construction contractors	• Implementation of environment clauses including those elements of the ESMF which will be identified in their respective contracts

145. As indicated in the table above, implementation of this will involve responsibilities of key stakeholders at the National, Provincial, Commune, PG, SHG and household levels:

146. ***Household level*:** The households with the assistance from community professionals and NGOs will ensure that micro-investment planning and project design and preparation will address environmental impacts, if any, by adhering to the specific sub-project guidelines outlined in the ESMF.

147. ***SHG level:*** Micro Investment Project proposals, developed at household level, will be presented, as part of the Technical Clearance process, to the SHG for sharing and screening. The SHG will assert the compliance with the environmental guidelines outlined in the ESMF.

148. ***Producer Group level*:** The PG will provide advice to its members with regards to Micro Investment Project development, including compliance with ESMF. For their own Economic Infrastructure sub-projects the PG will also follow the ESMF.

149. ***Commune/Sangkat level:*** Commune/sangkat Councils will be closely involved and informed about sub-project initiatives supported by LEAP. SHG and PG will participate in the yearly Commune/Sangkat Investment Planning process and register their sub-projects with the Commune/Sangkat Councils. The SHGs or higher level institutions of the poor, with assistance from community professionals and NGOs will ensure that all communal sub-projects and/or the cumulative impacts of the individual sub-projects at the household, PG and/or SHG levels are properly addressed.

150. ***Provincial/Municipal level*:** Provincial Sub-Management Teams (SMTs) would be established for Siem Reap Province in the Planning and Investment Division (PID) and for Phnom Penh Capital City in the Urban Poor Community Development Unit. Project Managers would be appointed to head the SMTs in Siem Reap Province and at Phnom Penh Capital City. The Sub-Management Teams would include technical support officers from relevant line departments drawn from various parts of the provincial administration. They would also include an environmental and social safeguard focal point. The project manager or a designated technical or safeguard officer will ensure that the ESMF is adhered to and complied with by the households and SHG/PG and enforced by the NGOs and community professionals. The project manager or a designated safeguard officer will also monitor and report on progress on the ESMF implementation. The SMTs will inform or involve the Department of Environment on the project's status in monitoring environmental mitigation measures (e.g. through its annual review report).

151. ***National level*:** The project director in MOI, in collaboration with his/her designated project technical advisor, will be ultimately responsible for ensuring the adherence to the ESMF during project implementation. Ongoing revisions to the ESMF are encouraged to address the lessons learnt during sub-project design and implementation and to reflect the spread and variety of sub-projects as they emerge. The Safeguards Working Group of the National Committee for Sub-National Democratic Development (NCDD), Ministry of Interior (MOI), maintains a list of communes/sangkats on an Environment Watch-List: communes/sangkats that are located in wetland areas and other protected areas which are sensitive to impact on the environment. For sub-projects proposed in these communes/sangkats and that require an Environmental Analysis resulting from the safeguard screening results (See Form 1 in Annex 4), the Safeguards Working Group, will review the safeguard screening and environmental analysis reports done at the commune and provincial level to confirm the potential for environmental impacts and the requirement to address those potential impacts.

152. NGOs will play an important role to facilitate sub-project proposal preparation and consultation process. Capacity building and safeguard training will be provided to NGOs to ensure that environmental and social impact are addressed in the sub-project screening and proposal preparation. Construction

contractors will follow the environment clauses including those elements of the ESMF which will be identified in their respective contracts.

8.1 Capacity Building and Training

153. Training on environmental and social safeguards procedures including environmental and social risk mitigation measures will be provided to the project staff as part of the sub-project investment planning and sub-project preparation processes. In this regard, the SMTs or project director will arrange with the Ministry/Department of Environment and the Environmental Coordinator or the designated technical officer or safeguard officer to provide environmental safeguards training sessions to the key project staff. The project director should ensure that the designated technical officer or safeguard officer (in collaboration with the project technical advisor, if any) will train community professionals and NGOs to ensure that the knowledge they gained are imparted to the households. LEAP project has set aside US$ 12,000 for a safeguard officer or NGO to provide hands-on safeguards training and support to the sub-national staff in Siem Reap and Phnom Penh, especially during the first year of implementation.

SECTION IX: PUBLIC CONSULTATIONS, INFORMATION DISCLOSURE AND GRIEVANCE REDRESS MECHANISM

9.1 Public Consultations, Information Disclosure

154. Consultations were undertaken at the Provincial level and more intensively at the Commune/Sangkat level to elicit issues and concerns that community members may have in relation to the project. Commune/Sangkat consultations on the overall project design and related risks and safeguard provisions were conducted in August 2016. During these consultations, the provincial, line agency officials, women's group representatives, Commune/Sangkat council officials and major stakeholders were given a presentation of the project, its components and objectives and proposed implementation arrangements. Inputs from the participants were elicited. The main environmental concerns raised during these consultations were flooding, inadequate rainfall/drought, odor associated to animal raising, soil erosion, dust and noise associated with rehabilitation work. The main social concerns raised included household impacts of seasonal migration, lack of loan repayment and community tension, difficulty sustaining SHG momentum with limited time for participation, etc. Such concerns are addressed in various aspects of the ESMF as well as environmental clauses for civil works contractors, as it pertains to construction impacts.

9.2 Grievance Redress Mechanism

155. During site preparation and construction phases, there may be complaints related to the environmental performance of the project. To ensure that there will be a mechanism to resolve such complaints, LEAP through MOI will undertake the following prior to the start of site works:

(a) establish a grievance redress mechanism (GRM)
(b) make public the existence of the GRM through public awareness campaigns
(c) ensure that names and contact numbers of representatives of LEAP/MOI and contractors are placed on the notice boards outside the construction site and at local government offices (e.g., provincial and commune levels).

156. The Grievance Redress Committee (GRC) will be established in every target commune/Sangkat with members from the commune councils, local NGOs, and women's organizations. Grievances can be filed in writing or verbally with any member of the GRC. The committee will have 15 days to respond

with a resolution. If unsatisfied with the decision, the existence of the GRC will not impede the complainant's access to the Government's judicial or administrative remedies. LEAP/MOI, through the Siem Reap and Phnom Penh SMTs, will make public the existence of this grievance redress mechanism through public awareness campaigns. LEAP/MOI will also set-up a hotline for complaints and the hotline will be publicized through the media and numbers placed on the notice boards outside the construction site and at local government offices (e.g., provincial, district, commune levels). Locally affected people will still be able to express grievances through the commune councils and these would be referred to LEAP/MOI through the usual channels in those committees.

SECTION X: MONITORING AND REPORTING ARRANGEMENT

157. The MOI will be responsible for coordinating and reporting the monitoring of environmental and social safeguard implementation, with support and inputs from NCDD Secretariat, the Ministry of Agriculture, Forestry and Fisheries, and both SMTs. The reporting of environmental and social safeguard implementation would follow the project PIM.

158. During the implementation of sub-projects, the project director or designated officer/advisor will monitor compliance of the environmental and social mitigation measures. The monitoring will focus on how well the risk mitigation measures are being adhered to and followed by the households during the micro-investment planning, preparation and implementation. This means checking on whether, for example, animal raising activities/sub-projects have properly addressed waste issues in the design as well as during implementation and whether households involved in vegetable farming have adopted good pest management practices (e.g. integrated pest management guidelines).

159. The C/S Council is responsible to keep all the documents including environmental reports. Original documents of each projects should be kept in project file that is kept in the Commune/Sangkat Office. The file should be kept in the office for at least five years after the project is completed. More details are outlined in the CSF-PIM.

160. The World Bank's Environmental and Social Safeguard Specialists will separately review adherence to the ESMF and mitigation measures. All records related to the ESMF application will be consolidated in the progress report and kept by the implementing agencies (i.e. The Ministry of Interior) for review during the Bank supervision missions.

ANNEXES

ANNEX 1: List of District and Communes in Environment Watch List in Siem Reap Province

District	Commune	(1) Area coverage by natural forest >50%	(2) Area coverage by natural forest or wet area >10%	(3) Intend to reserve for natural protected area in the future
Angkor Thom	Chob Ta Trav (1)	✓		
	Leang Dai (2, 3)		✓	✓
	Peak Snaeng (1)	✓		
	Svay Chek (2)		✓	
Chi Kraeng	Anlong Samnar (1, 2 &3)	✓	✓	✓
	Chi Kraeng (2, 3)		✓	✓
	Kouk Thlok Kraom (2)		✓	
	Spean Tnaot (2, 3)		✓	✓
Kralanh	Sambuor (1, 2, 3)	✓	✓	✓
Prasat Bakong	Kampong Phluk (2, 3)		✓	✓
	Trapeang Thum (2)		✓	
Puok	Doun Kaev (3)			✓
	Kaev Poar (2, 3)			✓
	Khnat (2, 3)		✓	✓
	Lvea (2, 3)		✓	✓
	Mukh Paen (2, 3)		✓	✓
	Por Treay (1, 2, 3)	✓	✓	
	Sasar Sdam (2)		✓	
	Prey Chruk (2, 3)		✓	✓
	Reul (2)		✓	
	Samraong Yea (2, 3)		✓	✓
	Trei Nhoar (2)		✓	
Siem Reab	Chong Khnies (2)		✓	
	Krabei Riel (2)		✓	
	Svay Dangkum (3)			✓
	Ampil (3)			✓
	Tuek Vil (3)			✓
Soutr Nikom	Dan Run (2, 3)		✓	✓
	Kampong Khleang (1, 2, 3)	✓	✓	
Srei Snam	Chrouy Neang Nguon (2)		✓	
	Slaeng Spean (2)		✓	
Svay Leu	Khnang Phnum (3)			✓
	Svay Leu (3)			✓
	Ta Siem (3)			✓
9	**34**	**6**	**24**	**20**

Annex 2: Cumulative List of LEAP Community Consultations in Siem Reap and Phnom Penh (as of August 2016)

Phase	Date	Location	Purpose	Participants (including approximate number)
Project Identification	October 31, 2015	Woth Slaeng, Chi Kraeng Commune, Chikraeng District Siem Reap	To learn how LEAP pilot beneficiaries have fared since the close of pilot operation and to assess what kind of support they need.	World Bank Vice President, WB Team, including many members of SHGs supported under the LEAP pilot. Approximately 200 villagers, most of whom participated in the pilot.
Project Preparation	April 10, 2016April 9-13, 2016 April 18 to May 6, 2016	Rolum Run Thmey village, Sre Noy commune, Varin District Siem ReapSiem Reap, and Phnom Penh	To conduct screening exercise to find out for Ethnic Minorities/IP	Village Chief, 3 Group Leaders, and 159 Villagers
	April 11, 2016 (AM)April 10, 2016	Woth Slaeng, Chi Kraeng Commune, Chikraeng District Siem ReapRolum Run Thmey village, Sre Noy commune, Varin District Siem Reap	To discuss and explain Social and Environmental Safeguards and conduct capacity need assessment. To conduct screening exercise to find out for Ethnic Minorities/IP	Commune Council Member 14 Vice Village Chiefs from 10 villages, and 31 villagers from the 10 villages. Village Chief, 3 Group Leaders, and 159 Villagers
	April 11, 2016 (PM)April 11, 2016 (AM)	Leang Dai Commune, Angkor Thom District Siem ReapWoth Slaeng, Chi Kraeng Commune, Chikraeng District Siem Reap	To discuss and explain Social and Environmental Safeguards and conduct capacity need assessment To discuss and explain Social and Environmental Safeguards and conduct capacity need assessment.	Commune Council Chief, Member, 10 Village Chiefs, and Saving Leaders from 7 Villages, and 16 villages Commune Council Member 14 Vice Village Chiefs from 10 villages, and 31 villagers from the 10 villages.
	April 12, 2016April 11, 2016 (PM)	Kantuot Commune, Svay Leu District Siem Reap Leang Dai Commune, Angkor Thom District Siem Reap	To conduct screening exercise to find out for Ethnic Minorities/IP. To discuss and explain Social and Environmental Safeguards and conduct capacity need assessment	Commune Chief, Member, Clerk, Assistant, Village Chief, and 8 villagers Commune Council Chief, Member, 10 Village Chiefs, and Saving Leaders from 7 Villages, and 16 villages
	April 20, 2016April 12, 2016	Provincial Hall Siem Reap Kantuot Commune, Svay Leu District	Lessons Learned Workshop: to identify revisions to LEAP design	LEAP team members from the Siem Reap Provincial Government, other provincial line department

	Siem Reap	documents based on pilot lessons To conduct screening exercise to find out for Ethnic Minorities/IP.	representatives, ADB and NGOs Commune Chief, Member, Clerk, Assistant, Village Chief, and 8 villagers
April 21, 2016 (AM)April 20, 2016	Woth Kampong Phluk, Kampong Phluk Commune, Prasat Bakong District Siem Reap Provincial Hall Siem Reap	To present the project design, confirm demand and seek feedback Lessons Learned Workshop: to identify revisions to LEAP design documents based on pilot lessons	4 Commune Council Members, 3 Village Chiefs, Vice Village Chief, and 18 Villagers from 3 villages LEAP team members from the Siem Reap Provincial Government, other provincial line department representatives, ADB and NGOs
April 21, 2016 (PM)April 21, 2016 (AM)	Sasar Sdam Commune, Puok District Siem ReapWoth Kampong Phluk, Kampong Phluk Commune, Prasat Bakong District Siem Reap	To present the project design, confirm demand and seek feedback To present the project design, confirm demand and seek feedback	Village Chief and Vice Village Chief from 12 villages, 25 villagers from 12 villages4 Commune Council Members, 3 Village Chiefs, Vice Village Chief, and 18 Villagers from 3 villages
April 22,2016April 21, 2016 (PM)	Mr. Proun's house, Preah Dak Village, Preak Dak Commune, Banteay Srei District Siem Reap Sasar Sdam Commune, Puok District Siem Reap	To present the project design, confirm demand and seek feedback To present the project design, confirm demand and seek feedback	Vice Commune Chief, Member, Clerk, Village Chief, Vice Village Chief, and 26 villagers. Village Chief and Vice Village Chief from 12 villages, 25 villagers from 12 villages
April 29, 2016April 22,2016	World Bank Office Phnom PenhMr. Proun's house, Preah Dak Village, Preak Dak Commune, Banteay Srei District Siem Reap	Lessons Learned workshop to hear and share examples of good practices in identifying and targeting poor households and communities To present the project design, confirm demand and seek feedback	with Urban Poor NGOs, DPs and Technical Line Departments Vice Commune Chief, Member, Clerk, Village Chief, Vice Village Chief, and 26 villagers.
April 29, 2016	World Bank Office Phnom Penh	Lessons Learned workshop to hear and share examples of good practices in identifying and targeting poor households and communities	with Urban Poor NGOs, DPs and Technical Line Departments
July 21, 2016	Doun Kaev Commune, Puok District Siem	Present overall LEAP design, benefits, risks	50 people from commune councils, Village chiefs,

		Reap	and proposed safeguard arrangements. Seek community feedback	and villagers
	July 22, 2016July 21, 2016	Anlong Samnar Commune, Chi Kraeng District Siem ReapDoun Kaev Commune, Puok District Siem Reap	Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	27 people from commune councils, Village chiefs, and villagers50 people from commune councils, Village chiefs, and villagers
	July 27, 2016 (8.30-10.30am)July 22, 2016	Sen Sok 1 Village, Sangkat Khmounh, Khan Sen Sok, , Phnom Penh Anlong Samnar Commune, Chi Kraeng District Siem Reap	Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	16 people from Official Khan,, and 6 difference Communities27 people from commune councils, Village chiefs, and villagers
Project Technical Support Mission	July 27, 2016 (10.30-12.00pm)July 27, 2016 (8.30-10.30am)	Sangkat Trapeang Krasang, Khan Por Sen Chey, , Phnom PenhSen Sok 1 Village, Sangkat Khmounh, Khan Sen Sok, , Phnom Penh	Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	23 people from Sangkat, and 9 difference Communities16 people from Official Khan,, and 6 difference Communities
	July 28, 2016 (8.30am-10.00am)July 27, 2016 (10.30-12.00pm)	Sangkat Praek Phnov, Khan Praek Phnov Phnom Penh Sangkat Trapeang Krasang, Khan Por Sen Chey, , Phnom Penh	Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	41 people from Sangkat, and 4 difference Communities23 people from Sangkat, and 9 difference Communities
	July 28, 2016 (10.30-12.00pm)July 28, 2016 (8.30am-10.00am)	Sangkat Svay Pak, Khan Russey Keo Phnom Penh Sangkat Praek Phnov, Khan	Present overall LEAP design, benefits, risks and proposed safeguard	9 people Official Khan, Sangkat, and 1 community 41 people from Sangkat, and 4 difference

		Praek Phnov Phnom Penh	arrangements. Seek community feedback Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	Communities
	July 28, 2016 (10.30-12.00pm)	Sangkat Svay Pak, Khan Russey Keo Phnom Penh	Present overall LEAP design, benefits, risks and proposed safeguard arrangements. Seek community feedback	9 people Official Khan, Sangkat, and 1 community

ANNEX 3: The "Non-Eligibility Checklist"

The project activities will not include below:

1) Production or trade in any product or activity deemed illegal under host country laws or regulations or international conventions and agreements, or subject to international bans, such as pharmaceuticals, pesticides/herbicides, ozone depleting substances, PCBs, wildlife or products regulated under CITES.
2) Production or trade in weapons and munitions.
3) Production or trade in alcoholic beverages (excluding beer and wine).
4) Production of tobacco.
5) Gambling, casinos and equivalent enterprises.
6) Production or trade in unbounded asbestos fibers or use of asbestos-containing materials. This does not apply to purchase and use of bonded asbestos cement sheeting where the asbestos content is less than 20%.
7) Drift net fishing using nets in excess of 2.5 km in length.
8) Purchasing of Electrical shock/bomb for fishing purpose
9) Fishing of protected species
10) Production or activities involving harmful or exploitative forms of forced labor/harmful child labor.
11) Sub-project activities involving logging or those that would significantly degrade or convert forest, critical natural habitats and exotic species. Production and distribution of construction materials is one of the eligible activities provided that wood/lumber production are sourced legally and further due diligence of the sources will be pursued as part of processing and approval of the sub-project proposal.
12) Commercial logging operations for use in primary tropical moist forest production or trade in wood or other forestry products other than from sustainably managed forests.
13) Activities involving major construction and civil works that would cause significant adverse impact and require a full EIA report/IEIA according to the national EIA regulation and in line with WB safeguard policies (e.g. category A).
14) Large-scale activities involving significant conversion or degradation of natural and/or critical habitats and/or any activities in legally protected or internationally recognized areas
15) Large scale activities involving production, harvesting, or trade in wood or other forestry products from plantation and natural forests other than from legal and sustainable origin
16) Large scale activities involving harvesting of wild fish populations or other aquatic species other than from legal and sustainable origin;
17) Activities involving significant alteration, damage, or removal of any critical cultural heritage

ANNEX 4: SUB-PRPJECT PROPOSAL SCREENING & MONITORING FORMS

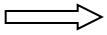
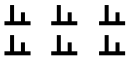
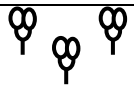
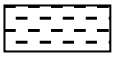
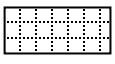
Form 1: Safeguards screening (see a completed example in the CSF PIM)

Province / Municipality	**District/Khan**	**Commune/Sangkat**
Name of Project :		
Does the project need environmental analysis (EA)? Yes [] No [] If not, reason why? ..... Does the project potentially affect any known Physical, Cultural, and religious resources? If yes, immediately report to the World Bank Group and the relevant Government departments. ……		
Does the project need Report on Environmental Safeguard Measures in connection? Yes [] No D If not, reason why?		
Date.....C/S Chief Date: ……. The official conducted the screening		

Source: adapted from the Commune/Sangkat Project Implementation Manual, 2009:18

Form 2. Environmental Mapping[5]

The following symbols should be used for assisting the project to develop an environmental map.

Symbol	Meaning
	Steep slope (more than 5%) Arrow points down hill
	Slight slope (less than 5%) Arrow points down hill
	Highly erodable soil: silt or dispersive clay
	Paddy fields
	Fields for annual crops
	Fruit Tree crops
	Grass land
	Forest with small trees
	Forest with big trees
	Area of houses. Write down what kind of water supply.
	Water all year
	Water part of the year
	Cultural site
	Access route to site
	National and Provincial protected areas

[5] *Some communes/sangkats may already have their environmental mapping or disaster risk mapping developed as part of their recent commune development planning. In this case, the commune/sangkat councils can verify or update the map to reflect any changes that may have in their respective communes/sankgats*

Symbol	Meaning
	Biodiversity conservation areas issued by Ministry of Environment
DRM	Area that is vulnerable to disaster risks and climate extreme events such as drought and rain intensity.

Source: adapted from the commune-based environmental map in the CSF- PIM, 2009.

Form 3: Environmental Analysis Report (see a completed example in the CSF- PIM)

C-SF – PIN Environmental Analysis Report	
Province:	Commune: *Roseisrok*
District:	C/S Code: *123456*
Name of sub-project:	
Date of participatory environmental analysis	**Name/position of official responsible for analysis**
Place of doing the analysis	**No. of local people took part in the analysis (attach a list)**

Reason for carrying out Environmental Study (can be more than one)

No.	Description	Check
1	Project may damage area that is important for environmental or cultural reasons	
2	Project may cause damage to domestic water supplies	
3		
4		
5		

Recommendation

No	Description	Check
1	If the project is implemented following the project design, there will not be any unacceptable impact on the environment.	
2	The project will have medium impact on the environment. However, this impact can be ameliorated by implementing the environmental management plan	
3	The project design is changed to avoid unacceptable big and medium impact on environment	
4	Project is cancelled because trade-offs between benefits of the project outputs and bad impact is acceptable.	

Source: adopted from the ESMS of ADB-funded TSSD and CSF- PIM, 2009

Date: ……..

Responsible Official

Form 4: Checklist of Environmental Impact Analysis: potential impacts and mitigation measures

Environmental Impacts and *Mitigation Measures of Infrastructure services.* Below is an example of potential environmental impacts and mitigation measures for those small-scale infrastructure investments under Sub-components 1.3 and 2.2

Type of small scale infrastructure investment	Environmental impact/problem	Mitigation measures	Budget
Road	• Damage to fields or crops near construction • Damage caused by truck transporting laterite • Problem caused by dust and nuisance	EMP for small-scale infrastructure or Environmental code of practice (ECOP including careful construction technique (see Annex 4). The contractor will spray water to reduce the dust when the weather is dry and periodically clean stagnant debris. Contractor will fence off Construction site to reduce any possible annoyance to neighbors.	Zero or minimal cost
Bridges and culverts	• Damage caused to the area around the construction site • Pollution of the stream or water body during construction	Environmental code of practice (ECOP) including choosing to construct during dry season	Zero or minimal cost
Buildings	• Damage to the area around the construction site • Pollution from waste materials • Bad hygiene because no sanitation provided for the workers on site	Environmental code of practice (ECOP) including agreement with the contractor to clean the site carefully and remove all waste materials	Zero or minimal cost
Water supplies	• Pollution from wastewater during well drilling • Water supply is contaminated because of bad technique during construction	Environmental code of practice (ECOP) including agreement where waste water will flow to.	Zero or minimal cost
Weir construction or Irrigation works to address the problems from inequitable distribution of benefits and poor management of system.	• damage to area around site, pollution of streams, damage caused by construction equipment; operation impacts: flooding upstream, water shortage downstream, erosion around structure and canals, water quality changes, soil fertility damage from irrigation water, loss of fisheries, changes to agriculture increase fertilizer and pesticide use, social	Environmental code of practice (ECOP)	Zero or minimal cost
Urban Drainage and Flood Control	Soil erosion or flooding concerns (e.g., due to highly erodable soils or steep gradients) Number of stream crossings, junctions or disturbances	Environmental code of practice (ECOP)	Zero or minimal cost

	Wet season excavation Creation of quarry sites or borrow pits Significant vegetation removal Wildlife habitats or populations disturbed Environmentally sensitive areas disturbed Cultural or religious sites disturbed Economic or physical resettlement required New settlement pressures created		
Built Facilities – Markets, micro and small enterprise facilities, abattoirs	Disturbance of economic activities leading to loss of property or income Number of stream crossings or disturbances Wet season excavation Creation of quarry sites or borrow pits Significant vegetation removal Wildlife habitats or populations disturbed Environmentally sensitive areas disturbed Cultural or religious sites disturbed Economic or physical resettlement required • New settlement pressures created	Environmental code of practice (ECOP)	Zero or minimal cost

Source: Adapted from the PIM of LASED II, 2016

Environmental Impacts and Mitigation Measures of livelihood improvement. The below table provides some examples of potential environmental impacts and mitigation measures for livelihood investments include animal raising (pig, chicken, cattle), backyard fish culture, vegetable, crop and rice farming and fruit tree planting (more details in the components 1 and 2).

Example of Issue	Environmental impact/problem	Mitigation Measures	Budget
Natural habitats	Damages or loss of vegetation cover and trees Loss or degradation of valuable natural/ ecological resources	Environmental code of practice (ECOP) (see Annex 4).	Zero or minimal cost
Water quality and water resource availability and use	Health/ sanitation /hygiene in local community Safety risk to community Workers health and safety	Environmental code of practice (ECOP)	Zero or minimal cost
Natural hazards vulnerability, floods, soil stability/ erosion	Degrade existing landscape Solid Waste generation Wastewater generation Chemicals, hazardous wastes generation Dust, air pollution	Environmental code of practice (ECOP)	Zero or minimal cost

Example of Issue	Environmental impact/problem	Mitigation Measures	Budget
	Noise and Vibration Increased erosion risks/siltation/ sedimentation Water quality degradation Impacts Cultural sites such as church, historical site, grave yard, etc. Social disturbance to local community:		
Physical cultural resources	Cultural property (Damage to valuable cultural sites)	The following chance find procedures are to be included in all civil works contracts: • If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during the civil work, the Contractor shall: • Stop the construction activities in the area of the chance find; • Delineate the discovered site or area; • Secure the site to prevent any damage or loss of removable objects; and • Notify "any cultural heritage" found to the government implementing agency or the relevant provincial Culture Department as early as possible. • Civil work may resume only after permission is given from the implementing agency or the provincial Culture Department.	Zero or minimal cost

Source: adapted from the ESMF of TSSD, 2009 and CSF- PIM, 2009

Form 5: Environmental Monitoring Plan

What	Where	How	When	Who
What will be monitored?	Place for monitoring?	How to monitor?	Times when monitoring will be done?	Who will be responsible to monitor?

Source: CSF- PIM, 2009

Form 6: List of Participants in Environmental Analysis or Public Consultation

Names of Village and commune/sangkat: ……

No.	Name	Village	Gender	Age	Occupation	Remarks
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
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18.						
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21.						
22.						
23.						
24.						
25.						

ANNEX 5: Environmental Codes of Practice and Simple Mitigation Measures for Small-Scale Sub-Projects

This annex provides technical guidelines for a simple impact assessment and mitigation measures of likely types of subprojects.

Table 5.1 ECOP for Community/Village Roads including small bridge, culvert, track improvement, etc.

Key issues to consider	Mitigation measures	Remarks
Location		
- Conservation area	No animal killing	
	No land occupation	
	No forest cutting	
	Solid waste Management	
	No camping	
- Flood area	Provide adequate drainage system	
	Include appropriate measure to mitigate flood impacts	
- Mountainous area	Design slope should be less than 17%	
	Side drain	
	Slop protection	
	Guard rail (simple type)	
- Community area	Speed limit sign	
	Dust and noise control	
	timely public information on works duration and schedule	
- Land property	Minute of meeting on conflict resolution and attached the land certificate	
	Cultural area, history, etc.	
-Fish spawning areas and migration routes	Avoid negative impacts such as disposal of spoil and tree uprooting which could silt up water courses Ensure optimal design.	
Construction phase		
- Borrow pit	construction materials should be obtained from certified quarries;	
- Erosion risk	Design/provide adequate slop protection	
	Provide maintenance procedure	
- Solid waste	Provide appropriate waste collection and disposal	
- Waste Oil	Do not allow to drain into soil and river	
- Camp	Secure agreement with local community	
	Provide water supply, mosquito net, and adequate sanitation (toilet, washing space, etc.), and good housekeeping to prevent rodents, insect, etc.	
- Construction material storage	Storage in proper area toxic wastes and materials will be stored in safe place.	
Operation phase		
Public health, road safety, and other social negative impacts in the		

village		
- Speed control	Install measures to control speed limit (sign, bumper, etc.), education campaign	
- Dust control	Control speed limit, periodic watering, plant appropriate trees, surfacing	
- Accident	Awareness training in cooperation with the Police Office	

Table 5.2 ECOP for Community/Village Water Supply (<1,000 users), including Dug well, Drilled well, Gravity Flow System

Subproject Issues	Mitigation Measures	Remarks
Location		
-Land property	Minute of meeting on conflict resolution and attached the land certificate	
-Protected area	Approved by concern sector	
-Flooding area	Detail study and proper design	
-Water source protection	Set up regulation and principle	
-Community zone	Establish the water user regulation	
-Close to borrow pit/quarry, waste disposal sites	Water testing	
Construction		
-Solid waste generation	Provide appropriate waste collection and disposal	
-Waste Oil	Do not allow to drain into soil and river	
-Camp	Secure agreement with local community	
	Provide water supply, mosquito net, and adequate sanitation (toilet, washing space, etc.), and good housekeeping to prevent rodents, insect, etc.	
-Storage of construction material	Storage in proper area; toxic wastes and materials will be stored in safe place Storage in proper area	
Operation		
-possible contamination of water	Establish measure to protect quantity and quality of water sources. Fencing water tape	

Table 5.3 ECOP for Village Irrigation System (<150 ha), including weir, irrigation channels, repaired weir, small water storage (used primarily to feed animals)

Issues to consider	Actions	
Location		
Down stream		
- Impact water user	Community consultation (resolution)	
Impacts on water flow	Consider including generic dam safety measures into design	
- Fertilizer	Data from community	
	Introduction to community	

- Erosion	Proper design	
- Temporary Block fish passage	Properly designed screens and ladders in consultation with community	
Up steam		
- Fish protection	Establish the fish protection area; Integrate fish passage and screening activities into subprojects implementation	
- Water recourse protection	Set up management regulation	
Construction phase		
- Borrow pit	construction materials should be obtained from certified quarries	
- Erosion location	Design the suitable slop protection	
	Provide Maintenance procedure	
- Solid waste	Allocate suitable area for waste.	
	Separate recyclable waste	
- Wasted lubrication	Do not allow to drain into soil and river	
- Camp	Let community allocate	
	Provide sanitation, waste water and allocate the soiled waste site	
- Construction material storage	Store safely in an approved area	
Operation		
- Potential increase use of pesticide	Provide training on safe use of pesticides	
	Promote the use of no-chemical agriculture	

Table 5.4 ECOP Buildings (including school, market, health center, community hall, sanitary facilities)

Subproject issues	Mitigation measure	Remarks
- Land property	Land use certificate	
Water system	Detail study and proper design	
- Drainage system	Check drainage systems at planning stage	
- Location	Check, document and mitigate for any geo-specific environmental issue	
- Waste materials	Dispose of all waste in line with Government regulations	
- Safety	Provide H&S training based upon plans, all site workers to be provided with PPE	
Operation		
- Waste management	Set up committee	
	Allocate suitable area for waste	
	Separate recyclable waste	
	Set up rules and regulations	
- Water system, drainage system	Detail study and proper design to protect rivers and underground water	