**Feasibility Study** 

Project Number: 41435-054 August 2017

## CAM: Tonle Sap Poverty Reduction and Smallholder Project – Additional Financing Lvea Irrigation Subproject

#### CURRENCY EQUIVALENTS

(as of 4 August 2017)

| Currency unit | _ | Cambodian Riel (KR) |
|---------------|---|---------------------|
| KR1.00        | = | \$0.000244          |
| \$1.00        | = | KR4,099             |

#### **ABBREVIATIONS**

| ADB   | - | Asian Development Bank                                       |
|-------|---|--|
| AF    | _ | additional financing   |
| Ah    | - | Affected household   |
| CAVAC | - | Cambodia Agricultural Value Chain Program                    |
| CARD  | _ | Council for Agriculture and Rural Development                |
| CC    | - | Commune council  |
| CCAM  | _ | Conformal Cubic Atmospheric Model                            |
| CDP   | _ | commune development plan                                     |
| CMAW  | - | Commune Mobile Access Worker                                 |
| CRVA  | _ | climate risk and vulnerability assessment                    |
| CSIRO | _ | Commonwealth Scientific and Industrial Research Organisation |
| DAO   | - | district agricultural office                                 |
| DCU   | - | Development Coordination Unit                                |
| DRR   | - | disaster risk reduction                                      |
| DSC   | - | Design and Supervision Contractor                            |
| EA    | - | Executing agency   |
| EARF  | _ | Environmental Assessment and Review Framework                |
| EHS   | _ | Environmental, Health and Safety                             |
| EIA   | - | environmental impact assessment                              |
| EMP   | _ | environmental management plan                                |
| ETo   | - | Evapotranspiration   |
| FAO   | - | Food and Agriculture Organisation                            |
| FWUC  | - | Farmer Water User Community                                  |
| GAP   | - | Good agricultural practice                                   |
| GHG   | - | greenhouse gas   |
| GRM   | - | grievance redress mechanism                                  |
| ICT   | _ | Information and Communication Technology                     |
| IDP   | - | identified poor  |
| IEE   | - | Initial Environmental Examination                            |
| IFAD  | - | International Fund for Agricultural Development              |
| IPCC  | - | Intergovernmental Panel on Climate Change                    |
| IPM   | - | Integrated Pest Management                                   |
| IWR   | _ | Irrigation Water Requirement                                 |

| - | Environmental Safeguards and Climate Change Specialist (of the PIC)       |  |  |  |  |  |  |
|---|---|--|--|--|--|--|--|
| _ | livelihood improvement group  |  |  |  |  |  |  |
| _ | Ministry of Agriculture, Forest and Fisheries                             |  |  |  |  |  |  |
| _ | mobile commune access   |  |  |  |  |  |  |
| - | Market Improvement Groups   |  |  |  |  |  |  |
| _ | Ministry of Environment   |  |  |  |  |  |  |
| _ | Ministry of Water Resources and Meteorology                               |  |  |  |  |  |  |
| - | National Committee for Sub-National Democratic Development<br>Secretariat |  |  |  |  |  |  |
| - | Operation and Maintenance   |  |  |  |  |  |  |
| - | Provincial Department of Water Resources and Meteorology                  |  |  |  |  |  |  |
| - | Project implementation consultants  |  |  |  |  |  |  |
| - | Project implementation manual   |  |  |  |  |  |  |
| - | project performance monitoring system                                     |  |  |  |  |  |  |
| - | project preparation technical assistance                                  |  |  |  |  |  |  |
| _ | procurement review committee  |  |  |  |  |  |  |
| - | Paddy Selling Groups  |  |  |  |  |  |  |
| _ | provincial support team   |  |  |  |  |  |  |
| _ | Representative Concentration Pathway                                      |  |  |  |  |  |  |
| _ | Special Report on Emission Scenarios                                      |  |  |  |  |  |  |
| - | specialized service provider  |  |  |  |  |  |  |
| _ | transaction technical assistance  |  |  |  |  |  |  |
| _ | Tonle Sap Poverty Reduction and Smallholder Development                   |  |  |  |  |  |  |
| - | United States Environmental Protection Agency                             |  |  |  |  |  |  |
| - | Village animal health worker  |  |  |  |  |  |  |
| - | Value Chain Working Groups  |  |  |  |  |  |  |
| - | Water User Group  |  |  |  |  |  |  |
|   |   |  |  |  |  |  |  |

### WEIGHTS AND MEASURES

| ha  | - | hectare       |
|-----|---|---------------|
| km  | - | kilometer     |
| kW  | - | kilowatt      |
| kWh | - | kilowatt-hour |
| m   | - | meter         |
| m²  | - | square meter  |
| m³  | - | cubic meter   |
| mm  | - | millimeter    |
|     |   |               |

### NOTE

In this report, "\$" refers to US dollars.

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- 3. Social Impact Assessment
- 4. Due Diligence Report

#### I. SUBPROJECT SUMMARY

1. Constraints to poverty reduction and smallholder development in Cambodia include: (i) low productivity because of inefficient use of land, water, labor, and capital; (ii) poor productive infrastructure resulting in high costs and restricted access to markets; and (iii) limited access to rural financial services. To address these constraints, in 2009, the Asian Development Bank (ADB) approved a loan of \$3.40 million and a grant of \$27.30 million from the Asian Development Fund resources, and the administration of a loan of \$6.69 million and a grant of \$6.69 million financed by the International Fund for Agricultural Development (IFAD), and a grant of \$5.75 million financed by the Government of Finland for the Tonle Sap Poverty Reduction and Smallholder Development Project (TSSD).<sup>1</sup> Based on the current project's solid achievements. mainly to the decentralized community-driven development approach, the government and the ADB and IFAD project team concluded that successful project activities in productive infrastructure and livelihood improvement should be scaled up to broaden the benefits of increased rural incomes and economic development. The additional financing will expand activities on the productive infrastructure and make it climate-responsive from 196 communes in five provinces in the TSSD, to 271 communes in seven provinces in the Tonle Sap Basin, and further develop an enabled environment for agricultural productivity, diversification and climate resilience.<sup>2</sup> The inclusion of women, smallholding farmers, and poor people will remain a priority. Consistent with the current project, the additional financing will enhance agricultural productivity and improve access to markets, resulting in better livelihoods and higher incomes in the project area, with the added benefit of enhanced resilience to disaster risks, including climate risks.

2. Under the Tonle Sap Poverty Reduction and Smallholder Development Project – Additional Financing (TSSD-AF) a significant portion of the budget will go to provision of small infrastructure subprojects in the Project communes, mainly rural road and irrigation rehabilitation. Infrastructure designs are expected to incorporate the latest recommendations from the Climate Risk and Vulnerability Assessment on climate change resilience and to include modifications to reduce disaster risk in the concerned communes. In addition, resettlement issues and environmental concerns must be addressed.

3. Under **Output 1: Rural productive infrastructure and livelihood improved with capacity in disaster risk management enhanced,** the TSSD-AF will rehabilitate 6,000 ha of irrigation capable of year round water provision and support tertiary irrigation construction where indicated as viable after a feasibility study. Subprojects must be included in commune development plans (CDP), confirming community interest.

4. Lvea Commune Council, Preah Sdach District, Prey Veng Province proposed a subproject to rehabilitate three canals with a total length of 5.09 km to supply water to 305 ha for rice production. The location of these three canals is shown in the map below.

<sup>&</sup>lt;sup>1</sup> The ADB loan and grant of the TSSD was declared effective on 31 March 2010. The ADB loan and grant completion date and closing date are 31 August 2017 and 28 February 2018, respectively. The IFAD loan and grant, and the GOF grant became effective on 15 February 2010 and 3 December 2010, respectively. On 24 February 2014, the grant amount from GOF was reduced to \$1.595 million due to the modification of the ICT component of TSSD, and the GOF grant completion date was revised from 15 March 2014 to 31 December 2014.

<sup>&</sup>lt;sup>2</sup> Banteay Meanchey, Kampong Cham, Kampong Thom, Siem Reap, and Tboung Khmum provinces are in the current project. These five provinces, plus Battambang and Prey Veng are proposed to be included in the additional financing.



#### Figure 1: Location of Lvea Subproject

#### A. Subproject Description

5. Lvea Commune Council (CC) has identified rehabilitation of three secondary canals to provide water for rice production as a high priority. Water for the proposed canals will come from a main canal supplied by a pump station on the Kampong Trabaek river, a distributary of the Mekong.

6. Under the subproject, three canals, one to the north and two to the south of Highway No. 1, will be rehabilitated. The rehabilitated canals, with a total length of 5.09 km, will serve a command area of 305 ha owned by 141 families. They will enable an increase in the area double cropped from 40 ha to the full 305 ha. A third rice crop will be possible on most of the area.

7. In 2013 the Republic of China built five pumping stations along the Kampong Trabaek river, each with two large irrigation pumps and two large drainage pumps. Some poor quality primary and secondary canals were provided with the aim of eventually irrigating a total of 8,000 ha on the flood plain either side of the river. These mostly follow the alignment of old canals developed in the Pol Pot era. The Republic of China has also provided a dyke along the south bank of the Kampong Trabaek river to reduce the risk of flooding. The proposed subproject area is in the area protected by the dyke.

8. Water for the subproject canals will come from Main Canal No. 10 (MC10) which is supplied by Pump Station No. 2 on the Kampong Trabaek River. The Pump Station and the first section of the MC10, from the river southward to Highway No. 1, were provided under the Chinese

funded project. In 2014 the Ministry of Water Resources and Meteorology (MOWRAM<sup>3</sup>) extended MC10 south of Highway No. 1.

9. At present the Provincial Department of Water Resources and Meteorology (PDOWRAM) of Prey Veng pays the electricity bills for the main pumps with help from a local businessman. Farme informed that they cannot afford to contribute as they have to pay to pump from the main and secondary canals where water levels are below ground level.

10. If the Chinese irrigation scheme ever became fully operational, which is unlikely, in some years the flow in the Kampong Trabaek may be inadequate in the March to May period of the year.

11. This subproject and other infrastructure subprojects will be included in CDPs, confirming community interest and/or requests from marketing improvement groups (MIGs) or other farming groups and funds to contractors will pass through CCs.

#### B. Subproject Cost

12. The estimated cost of Lvea Irrigation subproject civil works is \$197,200 including 5% physical contingencies and 10% VAT. The total cost of the subproject including civil works, design, construction supervision, associated initiatives (e.g., agriculture and ICT) and project management cost is \$379,232 equivalent to \$1,243/ha. A summary of costs is shown in the table below.

| Table 1. Guillinary of costs for Evea inigation Subproject |                |            |   |  |  |  |  |  |  |  |
|--|----------------|------------|---|--|--|--|--|--|--|--|
| Description  | Amount<br>(\$) | % of total | Comment   |  |  |  |  |  |  |  |
| 1. Civil works   | 197,200        | 52.0       | Includes 5% physical contingencies & 10% VAT          |  |  |  |  |  |  |  |
| 2. Survey and design                                       | 12,615         | 3.3        |   |  |  |  |  |  |  |  |
| 3. Civil works O&M   | 11,832         | 3.1        | 2% of construction cost between Year 2 and Year 5     |  |  |  |  |  |  |  |
| 4. Community support                                       | 100,822        | 26.6       | LIGs, agricultural value chain development            |  |  |  |  |  |  |  |
| 5. Other support   | 39,862         | 10.5       | ICT, DRR training & multi-stakeholder value<br>chains |  |  |  |  |  |  |  |
| 6. Project management                                      | 16,901         | 4.5        |   |  |  |  |  |  |  |  |
| Total investment cost                                      | 379,232        | 100        |   |  |  |  |  |  |  |  |

#### Table 1: Summary of costs for Lvea Irrigation Subproject

#### C. Implementation Arrangements

13. The TSSD-AF has the following two implementing agencies: (i) NCDDS is responsible for output 1, and (ii) MAFF is responsible for output 2. Both agencies will be jointly responsible for output 3. As the cost of civil works for this subproject is within the limit for any single subproject of \$200,000 equivalent including VAT and contingencies, it will be implemented in one package. To enable implementation shortly after the Project starts, the contract will be tendered by NCDDS prior to the start of the TSSD-AF. The project preparation technical assistance (PPTA) procurement specialist supported by the PPTA Rural Infrastructure Engineer will assist the

<sup>&</sup>lt;sup>3</sup> Under the World Bank (WB) funded Mekong Integrated Water Resources Management Project, a feasibility study was undertaken October 2010-August 2011 for Bopear Canal Irrigation System Project which aimed to irrigate some 4,800 ha in Preah Sdach district. Much of Lvea Commune south of Highway 1 fell in the study area. A major part of the proposal was to construct a canal from the Stung Slot River (which has much larger flows than the Kampong Traebek River) to supply water to much of the area, including to the main canal from which it is proposed that the two subproject canals will draw water. WB ceased all funding to Cambodia for the period 2011 to 2016. MOWRAM undertook some of the proposed works, but the canal from the Stung Slot was not built. Instead, the Chinese main canal from Pump Station 2 was extended to the area south of Highway No. 1.

executing agencies (EAs) to prepare tender documents and contracts and evaluate bids until the contract signing stage.

13. The Lvea CC will remain the project owner. The CC will sign and manage the contract and monitor construction by the contractor with guidance and support from the Infrastructure Design and Supervision Consultants.

14. Operation and maintenance (O&M) of the scheme will be the responsibility of the existing Lvea Farmer Water User Community (FWUC) and 11 existing village Water User Groups (WUG), with support from the PDOWRAM and commune authorities. The project will assist initially through capacity development and a contribution towards the costs to a maximum of 2% of construction costs during years 2 to 5.

#### D. Social and Environmental Safeguards

15. Social and environmental safeguards have been developed for the Lvea subproject according to the requirements of the ADB's Safeguards Policy 2009. The proposed subproject is socially acceptable for implementation. It is strongly supported by the local communities and since the rehabilitation of the irrigation canals are the villagers' primary request development for improving their rice production, there is a great chance of creating the communities' sense of ownership.

16. The irrigation subproject will be the driving force to promote more agricultural activities, create employment opportunities and increase people's incomes. In this regard, the support provided by the subproject will not only help to improve small-scale infrastructure development but will also help reduce the financial difficulties, which the majority of the communities are currently facing. As more people are employed locally, it will eventually assist to reduce the flow of rural-urban migration and also help mothers to take care of their offspring as they are closer to home, instead of leaving these responsibilities to the grandmothers.

17. As no indigenous peoples or ethnic minorities are present in the subproject area, no indigenous peoples plan is required. For environmental safeguards subproject screening in the pre-feasibility stage, using a rapid environmental checklist, determined the subproject to be Category B for environmental impact as impacts are short-term and can be mitigated via effective implementation of an environmental management plan (EMP). An Initial Environmental Examination (IEE) and EMP were prepared for the Lvea subproject.<sup>4</sup>

18. Even given the communities' support and their request to implement these proposed subprojects, there are few social impacts, disturbances and issues related to the distribution of benefits, which should be clearly addressed and with appropriate mitigation measures put in place, prior the subprojects' approval. These recommendations include the following:

- (i) Issues related to land, trees and other structural impacts from marginal land acquisition. These subprojects must have proper procedures for land acquisition as well as compensation plans. Where the communities are willing to donate their lost assets, the total amount of the lost asset should be less than 5% of the entire impacted household asset and a donation confirmation report should be prepared in accordance with the Due Diligence report (see Annex 4).
- (ii) The donation confirmation report should focus on a rigorous due diligence procedure with a full documentation to verify the voluntary donation bona fides.

<sup>&</sup>lt;sup>4</sup> Initial Environmental Examination (accessible from the list of linked documents in Appendix 2).

The voluntary donations should be directly linked to benefits for the affected households and adequate grievance procedures should be provided for the affected people.

- (iii) The affected vulnerable households should be included in the project development and mitigation plans to ensure that they participate in the projects' activities and gain benefits from the subprojects.
- (iv) In relation to gender issues as the assessment found that the percentage of the female-headed households is relatively high, the subproject's Gender Action Plan should include special measures to ensure that they gain from the projects benefits on an equal basis.

19. In addition, the NCDDS commune/sanghat grievance redress mechanism (GRM) will be used to prevent and address community concerns and assist the project to maximize environmental and social benefits. The GRM will be accessible to diverse members of the community, including more vulnerable groups such as women and youth. Multiple points of entry, including face-to-face meetings, written complaints, telephone conversations, or e-mail, will be available.

20. Environmental safeguards for the subproject have been designed to avoid, minimize or mitigate identified impacts during the construction and operation phases of the subproject. During construction, the main issues will be air and water pollution and soil erosion, all of which must be managed by strict control of construction contractors. Additional localized traffic hazards are anticipated and this must be minimized by site access and road safety planning. Mitigation of construction-phase impacts relies heavily on responsibility of works contractors to follow specification clauses specifically designed to minimize pollution of air and water and soil erosion.

21. In operation, the main concerns for the irrigation subproject are local increases in the levels of agricultural fertilizer and pesticide residues and their effects on water quality and people. Post-construction mitigation will benefit from capacity building and training under the project to use fertilizers and pesticides efficiently and responsibly. There is also a concern that the irrigation scheme must be sustainable and responsibly managed, to ensure that agreed irrigation flows are maintained and other water users are not disadvantaged.

#### II. PRESENT SITUATION OF SUBPROJECT AREA

#### A. Social Impact Assessment

#### 1. Livelihood Sources

22. The social impact assessment (Annex 3) found that the targeted communities have mixed livelihood activities. These are predominately in the agricultural sector as well as the sale of labor for farming activities and in factories. Furthermore, others migrate to the other main cities such as Phnom Penh in order to work. The household survey data confirmed that about 57% of the surveyed households currently are involved in agricultural related activities, and out of this number 40% reported that are working directly on their own farms and that their agricultural products are for both consumption and commercial purposes. About 25% of the surveyed households reported that they are being supported by other members of the family, and so they are relying on remittances from a family member who is working elsewhere either inside or outside of the country. Additionally, about 9% reported that are selling their labor on a local farm.

23. The collected data also shows that more than 70% of the informants said that the agricultural products for sale are collected by market dealers who come to their village to buy

these products. Meanwhile more than 24% of the informants said that they sell their products to the local commune markets. Only a small percent (4%) of the informants said that they travel to sell agricultural products outside of their village or the commune markets.

| Subproject | Туре      | Sex  | of the head | Total |        |     |        |  |
|------------|-----------|------|-------------|-------|--------|-----|--------|--|
|            |           | Male |             | I     | emale  |     |        |  |
|            |           | n    | %           | n     | %      | n   | %      |  |
| Irrigation | No        | 16   | 34.0%       | 27    | 50.9%  | 43  | 43.0%  |  |
|            | Yes       | 31   | 66.0%       | 26    | 49.1%  | 57  | 57.0%  |  |
|            | Sub-total | 47   | 100.0%      | 53    | 100.0% | 100 | 100.0% |  |

Table 2: Households Currently Involved in Agricultural Activities

#### 2. **Povertv**

24. Regarding poverty levels an average of about 61% of the total surveyed informants reported that they are poor, according to their own self-evaluation of their household's wealth status. It is interesting to note that the percentage of females who reported that they are poor is much higher than the percentage of males (46.8% of males and 73.6% of females from the irrigation subproject).

| Subproject | Туре             | Sex  | of the hea | Total  |        |       |        |
|------------|------------------|------|------------|--------|--------|-------|--------|
|            |                  | Male |            | Fen    | nale   |       |        |
|            |                  | n    | %          | Female | %      | Total | %      |
| Irrigation | Poor             | 22   | 46.8%      | 39     | 73.6%  | 61    | 61.0%  |
|            | Normal / average | 20   | 42.6%      | 13     | 24.5%  | 33    | 33.0%  |
|            | Well off         | 5    | 10.6%      | 1      | 1.9%   | 6     | 6.0%   |
|            | Sub-total        | 47   | 100.0%     | 53     | 100.0% | 100   | 100.0% |

 Table 3: Self-evaluation of the Household's Wealth Status

25. Regarding vulnerability and poor households, the data indicates that those individuals who are aged 65 and over may be at risk of becoming vulnerable. For instance, the data shows that 27% of the surveyed households for the irrigation subproject are aged 65 and over. Additionally, the data shows that more than half of the surveyed households of the irrigation subproject hold a poor ID, (24% poor 1 and 28% poor 2. (Note that poor 2 is poorer than poor 1)).

| Table 4: Vulnerable Households |                            |     |             |        |           |       |        |  |  |  |
|--------------------------------|----------------------------|-----|-------------|--------|-----------|-------|--------|--|--|--|
| Subproject                     | Physical condition         | Sex | of the head | of the | household | Total |        |  |  |  |
|                                |                            |     | Male        | ł      | Female    |       |        |  |  |  |
|                                |                            | n   | %           | n      | %         | n     | %      |  |  |  |
| Irrigation                     | Normal                     | 40  | 85.1%       | 33     | 62.3%     | 73    | 73%    |  |  |  |
|                                | Elderly (aged 65 and over) | 7   | 14.9%       | 20     | 37.7%     | 27    | 27%    |  |  |  |
|                                | sub-total                  | 47  | 100.0%      | 53     | 100.0%    | 100   | 100.0% |  |  |  |
|                                | Household with poor ID     |     |             |        |           |       |        |  |  |  |
|                                | No                         | 25  | 53.2%       | 23     | 43.4%     | 48    | 48.0%  |  |  |  |
|                                | Poor 1                     | 11  | 23.4%       | 13     | 24.5%     | 24    | 24.0%  |  |  |  |
|                                | Poor 2                     | 11  | 23.4%       | 17     | 32.1%     | 28    | 28.0%  |  |  |  |
|                                | sub-total                  | 47  | 100.0%      | 53     | 100.0%    | 100   | 100.0% |  |  |  |

Tabla 4. Vulnarabla Hausabalda

#### 3. Gender

26. The social assessment conducted in early March and in April 2017 indicates that in general both females and males have equal access to all the available resources and public facilities. The villagers consulted informed the assessment that in general they are currently satisfied with their division and sharing of household tasks and responsibilities. They also stated that gender in development is one of the priority areas that the government has actively been promoting and

that gender mainstreaming is practiced in most of the rural development projects. However, the challenge often is associated with the social structure of the villages in the subproject areas, which still favor men over women in regard to public engagement, whilst giving the women responsibility for general household chores. Traditional roles and work norms for women mean that income generation is generally seen as the men's responsibility, whereas sourcing and preparing food for the household and child-caring are the women's responsibility. However, the assessment suggests that presently there are more and more women who are entering the workforce and that these roles are in flux. This is especially the case in urban and peri-urban areas where increasing numbers of women are found in various workplaces. Nevertheless, taking care of children and feeding the family remain to be seen as the women's responsibility.

27. Village meetings informed the assessment that the women are preferred for various jobs, especially in the age range of 16 to 40. As more and more women enter the workforce, women have less time to take care of their families and children. This role is then transferred to the older female members of the family, their mothers, which means that the grandmother has to take care of the housework and be responsible for child-caring tasks. During the discussions, it became apparent that the women often send a larger amount of money back to their parents than the men. When asked for an explanation, most of the informants said that men often have greater expenses and as soon men are married they also tend to provide financial support to their wives' families.

28. Regarding women's education, all of the informants in the consulted villages stated that the education level of the females is very low and that it is much lower amongst the older generation. In some villages, the informants claimed that more than half of the adult females in their villages are illiterate. At the moment, young girls aged between 16 and 19 often drop out/leave school to work in factories near their villages, in Phnom Penh and/or in different locations in other provinces. The reason is that females are preferred to fulfil the positions of service providers, factory workers and fruit pickers (eggplants, chilly, tomatoes, beans, etc.). Meetings with the provincial authorities from Prey Veng province suggested that the educational level of women adds to the difficulties in forming and maintaining female Livelihood Improvement Groups (LIG) committees and members with the current TSSD project. The female illiteracy rate is also affecting the effective implementation of the Good Agriculture Practice (GAP) programs because most of them do not know how to write and/or read the information that has been provided. Therefore, they are unable to provide feedback and information as well as communicate with the project within the given timeframe.

29. In relation to women's health issues, the information from the village' meetings and community consultations suggested that women and men have equal access to health care services. However, the data from the household survey revealed that the percentage of females who reported that they have someone in the family who has chronic health issues was much higher than that of males.

30. The survey data shows that on average more than 30% of the surveyed households are headed by females. In general, Cambodia has a high percentage of female headed households as the national census data in 2012 indicated that 22% of all households and 28.6% of rural households were headed by women. Households headed by women are likely to be more vulnerable; they are also likely to experience shocks differently than male-headed households, largely due to social norms and more limited economic opportunities and income. Nonetheless, not all of the female headed households are considered as poor if they own sufficient productive agricultural land, derive income from off-farm or non-farm-based activities, or have adult members of the household engaged in waged employment outside of the commune.

31. Villagers consulted in the subproject areas engage in a mixture of livelihood activities but are predominantly engaged in agricultural activities. Additionally, although more and more people are migrating for work, most of the income is being generated from the sale of agricultural products or wage labor from farming activities. Men and women share their different work roles in the cultivation of crops. When activities involve machinery (such as clearing land and harvesting crops), men tend to take the leading role, and when physical inputs are needed, females tend to take the leading role (such as weeding and nurturing). Women, especially the older generation, also take over the role of childcare for their own offspring, who are engaged in upland-agriculture or are employed as garment workers. Additionally, as the female head of the household becomes older and there are fewer economically active members of the household, the poverty level becomes more deeply entrenched than for those households that are headed by men. In conclusion, women in the subproject areas are active in socio-economic arena through the generation of household income as well as participation in livelihood development activities and also remain the key person who is responsible for household chores.

#### 4. Indigenous People

32. The surveyed villages do not have indigenous people or ethnic minorities living in them and therefore, an indigenous plan will not be prepared for these two subprojects.

#### 5. Landless Households

33. According to the commune data, there are 11 villages in Lvea commune with a total of 7,901 people. Given these population numbers, the commune data shows that there are 18 households in Lvea that are landless. The data on the landless households has not been incorporated into the 200 households sample as this survey addresses the potentially impacted land and other assets by the proposed subprojects. The commune data does not include information on landless households within the individual villages; therefore, this information will be included during the detailed alignment measurement survey to feed into the detailed subproject design.

| Subproj<br>ect | Commun<br>e | No. of<br>Village<br>s | No. of<br>Families | Total<br>Land<br>(Ha) | Total<br>Residential<br>(Ha) | Total<br>Agriculture<br>(Ha) | Hill<br>Are<br>a<br>(Ha) | Flooded<br>(Ha) | No.<br>Landless<br>HHs |
|----------------|-------------|------------------------|--------------------|-----------------------|------------------------------|------------------------------|--------------------------|-----------------|------------------------|
| Irrigatio      |             |                        |                    |                       |                              |                              |                          |                 |                        |
| n              | Lvea        | 11                     | 5,246              | 2,352.23              | 250.31                       | 2,101.33                     | -                        | 0.59            | 18                     |

#### Table 5: Landless Households

#### 6. **Female-headed Households**

34. The household survey data below (Table 6) shows the percentage of female headed households in Lvea commune for the irrigation subproject. The percentage of female headed households in Lvea it is as high as 57.6%.

|  |         | •••••• | •          |       |       |     |       |  |  |
|--|---------|--------|------------|-------|-------|-----|-------|--|--|
| Female-headed households from the household survey |         |        |            |       |       |     |       |  |  |
| Subproject   | Commune | Sex    | of head of | Total |       |     |       |  |  |
|  |         | Male   |            | F     | emale |     |       |  |  |
|  |         | n      | %          | n     | %     | n   | %     |  |  |
| Irrigation   | Lvea    | 47     | 43.5%      | 53    | 57.6% | 100 | 50.0% |  |  |

 Table 6: Female-Headed Households

#### **B.** Present Agriculture

#### 1. Land and Human Resources

35. Lvea Commune has 11 villages.<sup>5</sup> The Lvea Irrigation Subproject will rehabilitate canals in Thnaot Chros, Boeung Snao/Takork and Peany villages.

36. The Commune has a total population of 8,833 comprising 1,910 households.<sup>6</sup> This represents a 3.1% increase in the population since 2010. The 2010 Commune census indicates that over 50% of the population are under the age of 17 and that approximately 300 households are female headed. Households fall into four income groups: better off households, 359, medium income households 812, identified poor (IDP)2 households 294 and IDP1 households 245.

37. While rice cultivation remains the most important source of household income approximately 30% of households receive off-farm income from family members working for the government or the private sector. In the case of the latter most are working in garment factories.

38. The total land area of the commune is 2,133 ha of which 2,101 ha are cultivated in paddy rice. Of the cultivated rice area 1,400 ha are cultivated as wet season rice meaning that it involves both irrigated and rain fed rice. The remaining 650 ha are cultivated as dry season rice meaning that they are planted at the end of the wet season in non-irrigated land using residual moisture for germination and growth

#### 2. Rice Production

39. Farmers plant a mixture of local rice varieties for home consumption as well commercial rice varieties for sale. Local varieties include Senpidao, Phka Rumduol, Reng Chey, Banla Pdai, Smer and Kror Sang Teap. Yields for these varieties average between 1.5 - 2.0 tons/ha. Farmers also plant VN 504 at the end of the wet season. This is harvested in January/February for sale across the Vietnam border.

40. Rice production costs are generally high as a result of high inputs costs. Farmers lack knowledge on most aspects of rice production including: land preparation, sowing rates, fertilizer use and pest and disease control. As a result, when rice prices fall to R 650 – R 700/kg as they did in the 2016 season, farmers produce at a loss.

41. The average production costs are approximately \$500/ha of which seed and fertilizer make up almost 70% of the total. Sowing is usually done by broadcasting and farmers use up to 300 kg/ha due largely in the belief that high plant densities are needed for weed suppression. Saving seed for a second year reduces costs somewhat. Producers have produced local varieties under contract however this was discontinued when prices fell and the buyer failed to purchase grain.

#### 3. Other Crops

42. Bananas are produced year round for domestic consumption. A small volume of fruit is

<sup>&</sup>lt;sup>5</sup> Samraong, Tnaot Chroh, Pea Ny, Thum. Boeng Snao, Lvea, Svay Kdieh, Prey Kduoch, Kampong Thnai, Ta Kouk, Prum Khsach.

<sup>&</sup>lt;sup>6</sup> Please note that different data sets in Cambodia frequently give different results.

produced on homeland. Jackfruit are produced and harvested from June – October while mangoes are harvested from March to early May. Palm trees are tapped for sugar year round. Vegetables are produced on a small scale for both household consumption and for sale.

### 4. Livestock Production

43. Cows and buffalo are grazed on paddy fields during the dry season. There are approximately 3,000 head of cattle and buffalo. The Commune Census surveys (2007 & 2014) show that the number of households raising livestock has declined with cows and chickens showing a 20% reduction in the number of households while pigs and ducks recorded at a 10% decline.

### 5. Opportunities and Constraints

44. Rice farmers are currently locked in a cycle of low productivity and price taking and changing this pattern without irrigation will be difficult. Options for increasing returns from rice include:

- (i) reducing the cost of inputs through bulk purchasing;
- (ii) reducing seed costs through use of drum seeders;
- (iii) use of better quality fertilizer and IPM methods;
- (iv) improving application methods of fertilizer and agrichemicals;
- (v) value adding through aggregation and grading to improve uniformity; and
- (vi) groups of farmers producing the same variety and aggregating sales to obtain a small price premium for genetic purity.

45. Livestock sales make up a significant part of household income however productivity is constrained by poor nutrition, disease and animal husbandry. Productivity can be increased through:

- (i) establishing improved ruminant pasture species on uncultivated land;
- (ii) training on the benefits of vaccination and drenching programs for endemic diseases and parasites in cows, buffalos, chickens and pigs; and
- (iii) training and transfer of technology to improve chicken and duck productivity.

46. Commercial vegetable production offers an opportunity for farmers to significantly increase their income however it is constrained by lack of irrigation and farmers' perceptions and understanding of market opportunities.

#### C. Existing Irrigation System

47. Canals were first constructed in Lvea commune during the Pol Pot era, but they quickly deteriorated and silted up. In 2013, with the financial assistance from the Republic of China five pumping stations along the Kampong Trabaek river were built, each with two large irrigation pumps and two large drainage pumps. Some poor quality primary and secondary canals in several communes were rehabilitated aiming to irrigate a total 8,000 ha on the flood plain on either side of the river. These mostly follow the alignment of the Pol Pot era built canals.

48. In Lvea Commune the Chinese project funded Pump Station 2 and the first 2.6 km section of MC10, as far as Highway No. 1. In 2014 MOWRAM built an extension from MC10 southward from Highway No. 1, giving the canal a total length of about 7 km. Part of the south of Lvea is irrigated by a main canal which follows the commune's eastern border from Pump Station 3.

49. At present it is estimated that about 2,000 ha of wet season rice is grown in Lvea commune, some of which can receive supplementary irrigation in dry periods. A second crop of about 500 ha of rice is grown under irrigation, pumping water direct from MC10, another main canal from Pump Station 3, from the few existing secondary canals or from groundwater.

50. At the present PDOWRAM of Prey Veng pays the electricity costs of running the main pumps with help from a local businessman. One of the two pumps in Pumping Station 2 runs for about 10 hours a night when electricity charges are lower (\$0.17/kWh during the day, \$0.12/kWh at night)<sup>7</sup>. The pump can be operated for longer when necessary. Farmers informed that they could not afford to contribute as they have to pay for pumping the water to their fields from the main and secondary canals as gravity irrigation is not possible.

51. In 2014 MOWRAM supported the establishment of an FWUC in Lvea and 11 WUGs, one for each village. Capacity building was provided to the FWUC to:

- (i) Plan and manage irrigation water from the Pump Station;
- (ii) Manage fund raising and O&M spending;
- (iii) Intervene on time when farmers face a water shortage; and
- (iv) Solve local conflicts between farmers.

52. The commune chief together with the FWUC, and with the agreement of village WUGs, works out the timetable for rotation of water between secondary canals. Farmers can request extra water through their village chiefs who pass on the request to the FWUC and PDOWRAM. Farmers may take water from any nearby canal whenever it is available.

53. According to FWUC regulations, each farmer must pay \$25/ha/season for access to irrigation water. This raises between \$8,750 and \$12,500 a year, of which 30% goes to the Committee, 10% is spent on administration and 60% on repairs and maintenance. Farmers provide labor for small-scale repairs and maintenance of canals. The FWUC is responsible for larger works costing over \$500. At present, few farmers pay more than \$25 a year, and some say they cannot afford that much. At some future date, they will be expected to pay the pump running costs.

#### D. Other Development Agencies

54. In addition to the Chinese funded irrigation and flood protection project, Australian Aid, through the Cambodia Agricultural Value Chain Program (CAVAC) is funding construction of the 343 ha Anlung Reach Irrigation scheme, downstream from the subproject area in Kampong Trabaek commune, Kampong Trabaek district. The scheme designers studied flows in the Kampong Trabaek River and concluded that required discharge for the Anlung Reach scheme of 0.515 m<sup>3</sup>/s was considerably less than the base flow in the river. Pumping requirements of the Lvea subproject will be similar.

#### E. Subproject Justification

55. The subproject was initially one of many proposed by CCs in the Project area. The PPTA team drew up shortlists of suitable subprojects for further consideration. These were visited by TSSD-AF rural infrastructure engineers and, based on their reports, Lvea subproject was selected for a feasibility study as an example of a typical irrigation subproject. As part of the feasibility study, several visits were made to the subproject site to discuss the proposals with the commune

<sup>&</sup>lt;sup>7</sup> Also, there are doubts about the capacity of the electricity grid to supply sufficient power for all the pumps along the river if they are run during the day.

authorities, farmers and PDOWRAM. The meetings were well attended and farmers and local authorities were clearly support the subproject.

56. The three proposed secondary canals will supply irrigation to 305 ha owned by 241 families:

- (i) SC1 in Thnaot Chros village will irrigate 57 ha owned by 36 household;
- (ii) SC2 in Boeug Snao/Takork villages will irrigate 179 ha owned by 150 households; and
- (iii) SC3 in Peany village will irrigate 69 ha owned by 55 households.

57. The rehabilitated canals will provide supplementary irrigation during dry spells for the 305 ha wet season rice crop. They will enable an increase in the area double cropped from 40 ha to the full 305 ha, a total increase of 183 ha. A third rice crop will be possible on most of the area four years out of five years.

58. Rice yields in Lvea commune tend to be low, particularly in for the wet season crop where yields of 1.5 tons to 2 tons per ha are typical. Where reliable irrigation is available, dry season yields are in the range of 3 tons to 4 tons per ha as higher levels of agricultural inputs are used. The subproject will therefore contribute to improved livelihoods and resilience in Lvea commune by increasing agricultural productivity. It will also contribute to achieving targets of the Government's Rectangular Strategy on Growth, Employment, Equity and Efficiency 2014–2018, which among other reforms, focuses on further development of and increasing value added in agriculture, and development and expansion of irrigated lands and effective water resources management.

59. The subproject will protect farmers from the effects of drought. Through good design and careful supervision of construction, the canals and associated structures will be climate resilient, will allow farmers to drain their fields quickly following heavy rain and will stand up to occasional floods.

60. Technical and financial assessments have identified the subproject as both technically and economically feasible.

#### III. SUBPROJECT DESIGN

#### A. Subproject Development Plan

#### 1. Irrigation Development Plan

61. The water supply for the three proposed canals f will come from the main canal No. 10 (MC10) which is supplied by the Chinese funded Pump Station No 2 on the Kampong Trabaek River in Lvea commune. Pump Station 2 has two irrigation pumps each able to pump 2.6 m<sup>3</sup>/s and two drainage pumps each with a capacity of 5 m<sup>3</sup>/s. Generally only one irrigation pump is run at a time. Flows in the Kampong Trabaek river can be low in the period February to May, but studies for other irrigation projects taking water from this river indicate that in most years it will not be a constraint for existing and proposed irrigation systems.

#### Figure 2: Google Earth image showing the location of the three proposed canals



62. The proposed canals, command areas, existing cropping and proposed cropping are shown in Table 7 below. At present the entire 305 ha command area is cropped with rice in the wet season. A second crop is grown on about 40 ha pumping from MC 10, groundwater, ponds, and the poor quality existing canal in Peany village. After subproject implementation three rice crops will be possible in all but the driest years.

|       |                         | Proposed               | Proposed                | Preser                        | nt cropping   | Proposed cropping     |                        |                        |  |
|-------|-------------------------|------------------------|-------------------------|-------------------------------|---|-----------------------|------------------------|------------------------|--|
| Canal | Village                 | canal<br>length<br>(m) | command<br>area<br>(ha) | wet<br>season<br>rice<br>(ha) | 2nd rice<br>crop<br>(ha)  | Rice<br>crop1<br>(ha) | Rice<br>crop 2<br>(ha) | Rice<br>crop 3<br>(ha) |  |
| SC1   | Thnaot Chros            | 1.02                   | 57                      | 57                            | ≈ 2 – 3<br>pumping<br>from<br>ground-<br>water or<br>ponds        | 57                    | 57                     | ≤ 57                   |  |
| SC2   | Boeung Snao /<br>Takork | 3.14                   | 179                     | 179                           | ≈ 18<br>pumping<br>from MC10                                      | 179                   | 179                    | ≤ 179                  |  |
| SC3   | Peany                   | 0.93                   | 69                      | 69                            | ≈ 20<br>pumping<br>from MC10<br>& existing<br>poor quality<br>SC3 | 69                    | 69                     | ≤ 69                   |  |
| Total |                         | 5.09                   | 305                     | 305                           | ≈ 40  | 305                   | 305                    | ≤ 305                  |  |

 Table 7: Proposed canal, command areas, present cropping and proposed cropping

63. The proposed Thnaot Chros canal is north of Highway No. 1 and will take water from an existing secondary canal supplied by MC10. The proposed Boeung Snao/Takork and Peany secondary canals lie south of Highway No. 1 and will take water direct from the MOWRAM constructed extension of MC10.

64. At present the canal lines of SC1 and SC2 are visible but almost completely silted up and the rights of way of some sections are covered in trees and bushes. A number of redundant Pol Pot era structures will have to be removed. SC3 has been partially excavated by farmers but is in poor condition.

65. The three canals will serve for both irrigation and drainage and, as the drainage requirement is larger, canals will be designed for drainage flows. PVC pipes will be placed through the canal banks at regular intervals to allow farmers to drain their fields into the canal without cutting through the banks.

66. A head regulator where the Boeung Snao/Takork canal comes off MC10 was constructed by MOWRAM in 2014 and is in working order. Four pipe culverts will be provided where tracks bisect the canal line to allow pedestrians and vehicles to cross without damaging the canal banks.

67. Thnaot Chros canal will take water from MC10 via an existing secondary canal with flow regulated by an existing head regulator. Two pipe culverts crossing structures will be provided.

68. Peany canal is at present supplied with water from MC10 by a culvert with no gate. This will be replaced with a head regulator. One pipe culvert crossing structure will be needed.

69. Construction materials will come from Neak Loeung market, on the banks of the Mekong river about 18 km north west of the subproject site and just off Highway No. 1.

#### B. Agriculture Development Plan

70. Upgrading the Thnaot Chros, Peany and Boeung Snao canals will allow farmers to extend their overall dry season rice producing area by 275 ha and increase average yields from 2.0 - 2.5 tons/ha to 3.5 - 4.0 tons / ha. Based on single cropping only this would increase total yield over the area by 275 - 400 tons.

71. Under TSSD-AF support, a specialized service provider (SSP7) will establish ten LIGs, of up to 25 members, based around a revolving fund and savings schemes. Households will be able to draw down funds totaling \$240 in three separate tranches to assist in the establishment and further development of livelihood activities including rice, vegetable and chicken production. LIG members will be selected from ID2 and ID1 households and it is unlikely that LIGs will work on the irrigated areas. Benefits accruing to the 250 LIG households are expected to be equivalent to benefits accruing to LIGs under TSSD and will be substantial.

72. SSP7 will also establish a service team to contract out services to farmers with a primary target of rice production. The service team is expected to work initially on rainfed rice and will therefore provide an extension example that may be less applicable to the irrigated areas. The service team will manage 11 ha of rice in the second year of the project (two crops) and will also support crop diversification and small scale crop processing. The area managed by the service team is expected to increase to 22 ha in year three, 33 ha in year four and 44 ha in year five. Yields for the two crops of rainfed rice are expected to rise to eight tons per ha. Other farmers are expected to imitate the techniques of the service team so that it is expected that by the project close 100 ha of rainfed rice will be achieving yields of 8 tons from two crops and in addition farm households will gain additional income from small-scale processing.

73. A separate SSP (SSP 8) will be contracted to promote and provide support for establishing commercial chicken and vegetable production as well as market improvement groups (MIGs). Promotion activities will involve establishing farmers' vegetable and chicken training schools that will enable farmers to gain hands on experience in raising producing vegetables and broiler chickens. Vegetable production is expected to concentrate on the irrigated areas – where farmers will be able to access all year water supplies in four out of five years.

74. A Commune Mobile Access Worker (CMAW) will be recruited by the CC to facilitate communication between LIG members and other value chain stakeholders. The CMAW will also work with SSP8 and the district agricultural office (DAO) to coordinate training for farmers. The CMAW will be provided with a tablet to provide access to digital content and where possible, to the Internet. Content will include videos, other multimedia documenting and other digital content documenting best practices and appropriate technologies that will be produced by individual consultants to recruited by MAFF.

75. Value Chain Working Groups (VCWGs) will be formed at the District level with membership comprising representatives from LIGs, input suppliers, traders and the two rice MIGs which will be established on the irrigated areas. The objective of the VCWGs is to identify value chain bottlenecks and to work towards solutions. The initial focus will be on rice but will be expanded to include other products including chickens and vegetables. The CMAW will provide access to online market information resources including the Ministry of Agriculture, Fisheries and Forestry (MAFF) Agricultural Marketing Information System as well as other sources of agribusiness and agricultural marketing data and information and ICT individual consultants will work with them to increase these sales by placing them online using a suitable e-platform.

76. **A Market Improvement Group** (MIG) will be formed in years two to three, based on an evaluation of LIG performance, marketing issues, the level of interest and social cohesion. MIGs will be informal groups of LIG and non-LIG farmers producing chickens and vegetables that have a common interest in improving marketing opportunities through value adding activities such as group buying and aggregation. Brokers will be appointed to facilitate bulk purchase of inputs and aggregated sales of product. In selected MIGs, a broker will be provided with a smartphone and training to make use of the internet and digital resources to provide access to online market information resources including the MAFF Agricultural Marketing Information System as well as other sources of agribusiness and agricultural marketing data and information. The brokers will add value to sales and production.

77. It is expected that in Lvea commune 25 farmers will benefit from increased incomes from chicken or duck raising (mainly LIG members) and 25 farmers from vegetable production.

78. Two PSGs will be formed from farmers with a common interest in improving rice productivity and marketing. PSGs will be informal associations that will develop shared goals around trialling new climate resilient varieties, reducing production costs through the adoption of IPM and practical aspects of System for Rice Intensification as well as mechanization.

79. Village Animal Health Workers (VAHWs). A Special Service Provider for agriculture value chains and market linkages support (SSP 8) will work in cooperation with the Provincial Office of Animal Health and Production, to support the livestock improvement program by the delivery of capacity building training and mentoring for VAHWs, the provision of veterinary kits and the strengthening of the network of VAHW Associations. Together these initiatives are expected to increase yields and improve livelihoods across all households in the areas benefiting from the rehabilitated irrigation. A team of individual consultants to support information and communication technology (ICT) will ensure that digital technologies including mobile devices and applications and the Internet will be used by the CMAW to improve agricultural supply chain dynamics. Digital technology will also be used to improve marketing opportunities through linking markets with the MIG and the Paddy Selling Group to add value through aggregation and increasing producer visibility. Digital technologies will also be used to raise awareness of improved agricultural technologies and practices, including DRR and climate resilient agriculture technologies.

#### C. Social and Environmental Safeguards

#### 1. Social Safeguards

80. At feasibility study stage, it is expected that the rehabilitation works of this rural road subproject will result in:

#### 81. Loss of land:

- (i) No private land affected to report
- (ii) Eight affected households to the residential land use. Two affected households out of eight affected households identified of having affected areas more than 5% of total land holding but not more than 10%. One affected household affected the residential land use > 10% but the remaining areas still viable for living and confirmed for voluntary donation.
- (iii) 21 affected households to agricultural land use. Of which one affected household identified of having affected areas more than 5% of total land holding but not more than 10%.

(iv) One affected household to both residential and agricultural land use but it is less than 5% of total land holding.

#### 82. Loss of secondary structure

(i) In public RoW, one extended roof and one pig cage will be affected. The asset owners already signed the voluntary donation form.

#### 83. Loss of trees

 (i) 341 fruit trees were identified; 175 mature palm trees, 24 mango trees, 16 banana trees, 18 Pring trees, one papaya tree, and three Krasang Trees. All affected fruit trees were already signed for voluntary donation to the project.

#### 84. **Other**

- (i) No loss of house or main structures;
- (ii) No loss of services/resources;
- (iii) No case of relocation; and
- (iv) No cases of physical or economic displacement to report.

85. Throughout the IOL activities and public consultation, this sub project is classified as category "C" for involuntary resettlement. And the resettlement implementation will be done based on voluntary donation for small strip of land use affected, affected secondary structures, and affected tress. All affected households have confirmed in writing that they have voluntarily donated their minimal affected assets in exchange to get direct benefit from the project, following the commune/Sangkat fund project implementation manual (PIM) procedures. See Annex 4 for the Due Diligence Report and the confirmation of voluntary donation of affected assets.

86. No indigenous peoples or ethnic minorities are present in the subproject area. Therefore, no indigenous peoples plan is required.

#### D. Environmental safeguards

87. On the basis of subproject screening in the pre-feasibility stage, using a rapid environmental checklist, the subprojects was determined to be Category B for environmental impact as impacts are short-term and can be mitigated via effective implementation of an EMP. The subproject draft Initial Environmental Examination (IEE) was prepared under the provisions of the ADB's Safeguard Policy Statement, 2009 and can be found in the linked document 12 of the TSSD-AF<sup>8</sup>.

- 88. The objectives of the IEE report are to:
  - (i) Describe the existing natural and socio-economical resources in and surrounding project area;
  - Identify and assess potential significant impacts based on existing environmental conditions including during project pre-construction, construction, and operation/ maintenance stages;
  - (iii) Identify and recommend mitigation measures to minimize any potential impacts caused by project activities;

<sup>&</sup>lt;sup>8</sup> Accessible at https://www.adb.org/projects/documents/cam-41435-054-iee

- (iv) Undertake public consultation to present subproject environmental issues to project stakeholders and local people of the subprojects area and to collect community concerns; and
- (v) Develop an EMP with cost estimates, and including monitoring plans during construction and operation stages to guide subproject implementation.

89. The IEE includes an EMP where the identified environmental impacts and mitigation measures are listed as an action plan for their implementation. The plan includes methods of mitigation, responsibilities, indicators of progress, and frequency and nature of monitoring activities with cost estimates. The EMP is a critical document for the subproject. The provisions of the EMP will be incorporated into tender documents and construction contracts.

90. The findings of the IEE are summarized in Section 6.3 below.

#### E. Gender

91. In relation to gender issues - as the assessment found that the percentage of the femaleheaded households is relatively high, the subproject's Gender Action Plan should include special measures to ensure that they gain from the projects benefits on an equal basis.

#### IV. INVESTMENT COSTS AND ECONOMIC EVALUATION

- 92. The investment cost of Lvea Irrigation Subproject totals \$379,232 and includes:
  - (i) Civil works;
  - (ii) Survey and design and construction supervision;
  - (iii) Community support to LIGs and for agricultural chain development;
  - (iv) Other support including agricultural information and communication technology (ICT), DRR training and multi-stakeholder value chains;
  - (v) Project management.

| Description                         | Amount<br>(\$) | % of total | Comment   |
|-------------------------------------|----------------|------------|---|
| 1. Civil works                      | 197,200        | 52.0       | Includes 5% physical contingencies & 10% VAT          |
| <ol><li>Survey and design</li></ol> | 12,615         | 3.3        |   |
| 3. Civil works O&M                  | 11,832         | 3.1        | 2% of construction cost between Year 2 and Year 5     |
| 4. Community support                | 100,822        | 26.6       | LIGs, agricultural value chain development            |
| 5. Other support                    | 39,862         | 10.5       | ICT, DRR training & multi-stakeholder value<br>chains |
| 6. Project management               | 16,901         | 4.5        |   |
| Total investment cost               | 379,232        | 100        |   |

#### Table 8: Summary of costs for Lvea Irrigation Subproject

#### A. Methods of Cost Estimation

93. The costs of civil works are taken from Aruna Technology's design report. Unit prices are based on NCDD guidelines and standard materials price lists which are updated annually for each province.

94. O&M costs have been taken as 2% of construction cost between Year 2 and Year 5.

#### B. Capital Costs

95. The capital costs of the subproject comprise both direct and indirect costs. The direct costs comprise of the survey and design, construction and associated initiatives that are designed are ensure full benefits of the investment. The civil works component accounts to 54% of the total subproject costs.

#### C. Operational Costs

96. Following construction the subproject will be turned over to the existing FWUC and village WUGs. They will be responsible for O&M of the canal system. The costs of minor repairs and maintenance should be shouldered by them. However, the cost of major repairs of the system should be the responsibility of the government.

97. At present MOWRAM is responsible for paying the main pump running costs and for repairs costing over \$500. WUGs pay for repairs and spare parts costing less than \$500 and, at some future date, will be expected to pay the pump running costs. Farmers estimate that they spend about \$56/ha per year on fuel and running costs of the small diesel pumps used for pumping from the canals.

98. It is expected that MOWRAM will continue to fund the running costs of Pump Station 2 for the next few years. One pump of the two at Pump Station 2 is generally operated for 10 hours per day. Pumping is usually at night partly because power is cheaper (costing \$0.12/kWh at night and \$0.17/kWh during the day), and partly because the local electricity grid cannot supply sufficient power for all the pumps along the river during the day. When necessary the pump can be operated for longer. The pump costs \$19.2/hour to run at present. The annual electricity cost for full irrigation of three rice crops on the 305 ha subproject area would be in the region of \$17,000. The cost would be low for supplementary irrigation of rice in the wet season at about \$580 (\$1.9/ha), but for a crop grown during the driest period from December to March the cost could be as high as \$11,000 (\$36/ha). For a crop grown in the period April to June the cost is estimated to be \$6,000 (\$20/ha).

99. The annual average O&M cost for the subproject canals is estimated at 10% of the cost of the civil works, equivalent to \$18,800 per year.

#### V. IMPLEMENTATION ARRANGEMENTS

#### A. Execution and Implementation Agencies

100. The TSSD-AF has the following two implementing agencies: (i) NCDDS is responsible for output 1, and (ii) MAFF is responsible for output 2. Both agencies will be jointly responsible for output 3. To enable subproject construction to be initiated shortly after TSSD-AF commences, survey and design were completed during the PPTA by a local company under contract.

101. To enable implementation shortly after the project starts, the contract will be tendered by the NCDDS prior to the start of the TSSD-AF. The PPTA procurement specialist, supported by the PPTA Rural Infrastructure Engineer, will assist the EAs to prepare tender documents and contracts and evaluate bids until the contract signing stage.

102. Construction will be undertaken by a national contractor.

103. The Lvea CC will remain the project owner. The CC will sign and manage the contract and monitor construction by the contractor with guidance and support from the Infrastructure Design and Supervision Consultants.

104. O&M of the scheme will be the responsibility of the existing Lvea FWUC and 11 existing village WUGs, with support from the PDWRAM and CC. The Project will assist initially through capacity development and a contribution towards the costs to a maximum of 2% of construction costs annually for 4 years.

105. The role of the PST at this stage will be in collating and forwarding financial information relative to fund replenishment and supporting SSP6 to ensure that irrigation projects are or will be registered with the Cambodia Irrigation System Information System (CISIS) to ensure access to operations and maintenance (O&M) funding and support in creation of farmer water user groups (FWUGs).

#### **B.** Implementation Schedule

106. It is envisaged that following clearance by Provincial authorities construction will begin shortly after TSSD-AF start up in January 2018. However, if there are delays or the wet season starts early, it may be better to begin construction at the end of the year.

#### C. Procurement

107. Based on the estimated budget (bill of quantities) in Table 9 below, the procurement to be carried out through national competitive bidding (NCB) with advertisement method using the standard bidding documents and compliance with policies and procedure specified in the procurement manual for external assisted project dated May 2012 is required.

| No. Description of works                            | Unit | Quantity      | Rate<br>(USD) | Total<br>(USD) |
|---|------|---------------|---------------|----------------|
| 1.0 Mobilization, site preparation and site clear   | ring |               |               |                |
| 1.1 Staff mobilization and site preparation         | LS   | 1.00          | 120.00        | 120            |
| 1.2 Demolish old Pol Pot era structures, fence, etc | . LS | 12.00         | 500.00        | 6,000          |
| 1.3 Site clearing after completed work              | m²   | 143,600.00    | 0.02          | 2,621          |
|   |      |               | Subtotal 1    | 8,741          |
| 2.0 Earthwork                                       |      |               |               |                |
| 2.1 Excavation                                      | m³   | 46,594.00     | 1.00          | 46,594         |
| 2.2 Backfill with 95% DD compaction                 | m³   | 45,600.00     | 1.50          | 68,400         |
|   |      |               | Subtotal 2    | 114,994        |
| 3.0 Crossing structures                             |      |               |               |                |
| 3.1 Concrete  | m³   | 108.50        | 135.00        | 14,648         |
| 3.2 Rebar   | ton  | 11.94         | 800.00        | 9,550          |
| 3.3 Lean concrete 50mm thick                        | m³   | 24.18         | 75.00         | 1,814          |
| 3.4 Stone masonary 250mm thick                      | m³   | 239.99        | 30.00         | 7,200          |
| 3.5 RC pipe - 800mm diam.                           | m    | 33.80         | 30.00         | 1,014          |
|   |      |               | Subtotal 3    | 34,225         |
| 4.0 Head regulator                                  |      |               |               |                |
| 4.1 Concrete  | m³   | 20.45         | 135.00        | 2,761          |
| 4.2 Rebar   | ton  | 3.68          | 800.00        | 2,944          |
| 4.3 Lean concrete 50mm thick                        | m³   | 3.55          | 75.00         | 266            |
| 4.4 Stone Masonary 250mm thick                      | m³   | 24.80         | 30.00         | 744            |
| 4.5 RC pipe - 800mm diam.                           | m    | 6.40          | 30.00         | 192            |
| 4.0 Steel Gate                                      | no.  | 1.00          | 300.00        | 300            |
|   |      |               | Subtotal 4    | 7,207          |
| 5.0 PVC pipe outlets                                |      |               |               |                |
| 5.1 PVC Pipe - 200mm diam.                          | m    | 309.00        | 7.50          | 2,318          |
|   |      |               | Subtotal 5    | 2,318          |
| 6.0 Removal of vegetation                           |      |               |               |                |
| 6.1 Palm, coconut, mango tree, etc                  | no.  | 250           | 10.00         | 2,500          |
| 6.2 Bushes  | no.  | 150           | 5.00          | 750            |
|   |      |               | Subtotal 6    | 3,250          |
|   |      |               | Grand Total   | 170,734        |
|   |      | Contin        | gencies 5%    | 179,271        |
|   |      | Total includi | ng 10% VAT    | 197,198        |

#### Table 9: Bill of Quantities

108. It is necessary to be aware that the procurement capacity at neither commune/sangkat nor provincial levels for the civil works using above method is still limited. It is recommended that EAs to implement this procurement package at national level with participation from committee member of the respective beneficiaries (province). In some case may occur that the procurement is delegated or have to be implemented at sub national levels, the capacity building has to be provided before the implementation starts. However, the participation from national level is imperative to ensure the procurement process goes in the right track.

#### D. Monitoring, Evaluation and Reporting

109. Construction monitoring will be undertaken by the infrastructure design and supervision consultant team, which will produce quarterly progress reports and subproject completion reports.

Input will also be provided by the infrastructure design and supervision consultant team to the TSSD-AF's quarterly and annual progress reports and the project performance monitoring systemd data collection platform will allow indicative outcome monitoring throughout the project duration.

#### VI. IMPACTS

#### A. Social Impacts

In general social impacts are expected to be overwhelmingly positive. A small number of 110. households will be affected negatively by land acquisition along the canal construction. A detailed household survey revealed that there are a total of 64 houses from the Lyea commune which are likely to be affected by the rehabilitation of the irrigation canals. An estimation of the area of impacted land is 6,433 square meters. Out of this number there are 31 houses which are likely to lose a small strip of land and 43 houses which will lose palm trees and coconut trees which they have planted along the proposed canals - see table 10 below (note that some of these affected houses have affected trees on the affected land). Additionally, there are two houses belonging to two different families which are likely to be impacted by the expansion of the width of the irrigation canals. These two families/households were visited and interviewed by the PPTA social team. The team inquired whether the canal expansion and the potential impacts on their house will cause a severe setback and disturbance for their families. One family answered that the impacts will not have any effect on them as they have already planned to move and live in another village. It is closer to town and there they plan to run a small family business - a rice mill and a shop. This family is currently in the process of preparing to relocate to the new village and a house is being built there. The survey team then went to visit the new village in order to validate this information and found that the construction of the house is nearly completed. The family members also informed the team that currently there is no one living in the potentially affected house.

111. The second potentially impacted house was also visited by the PPTA survey team to verify the scope of impact and their willingness to support the subproject. This family informed the team that they are willing to relocate their house because they wish to gain the benefits from the improved irrigation canal. They have been waiting for the moment that they have sufficient water for their paddy field, and that in fact they built the house on the land where the government had already planned to expand the canals (about 20 years ago). They stated that they are willing to move to make way for a better irrigation system as soon as the project has been confirmed and the subproject will begin. They acknowledged that the subproject will cause a temporary disturbance and will inconvenience them during the construction period due to the need to shift the house further. They requested that when the time comes, they would like the commune council and the villagers to assist with the physical relocation/movement of the house.

| Commun | Proposed | Village | Tota | No. | No. of affected land |        |   |       | No | No    | No. |    |      |      |    |
|--------|----------|---------|------|-----|----------------------|--------|---|-------|----|-------|-----|----|------|------|----|
| е      | Improved |         | I HH | AHs |                      | AL     |   | AL    |    | AL RL |     | RL | . IS | . IT | SD |
|        | Section  |         |      |     | n                    | m2     | n | m2    |    |       | F   |    |      |      |    |
|        |          |         |      |     | 0                    |        | ο |       |    |       |     |    |      |      |    |
| Lvea   | 1.02 km  | Thnoat  | 208  | 27  | 24                   | 4232.6 | 5 | 653.4 | 0  | 6     |     |    |      |      |    |
|        |          | Chros   |      |     |                      | 6      |   |       | 0  | 0     |     |    |      |      |    |
|        | 3,14 km  | Beoung  | 207  | 17  |                      | 0      |   | 0     | 0  | 17    | 17  |    |      |      |    |
|        |          | Takork  | 202  | 20  | 2                    | 121    | 4 | 1426. | 2  | 20    | 20  |    |      |      |    |
|        |          |         |      |     |                      |        |   | 7     | 2  | 20    | 20  |    |      |      |    |
|        | 0.93 km  | Peany   | 172  | 0   |                      | -      |   | -     | -  | -     | 0   |    |      |      |    |
| Total  | 5.9 km   | Total   | 1203 | 64  | 26                   | 4353.6 | 9 | 2080. | 2  | 43    | 37  |    |      |      |    |
|        |          |         |      |     |                      | 6      |   | 1     |    |       |     |    |      |      |    |

**Table 10: Proposed Irrigation Canals: Number of Affected Households** 

Note: AL=Agriculture Land; RL=Residential Land; IS= Impacted Structure; IT= Impacted Trees; SDF=Signed Donation Forms

112. These impacts suggested that the subproject needed to conduct a due diligence in order to verify the impact and confirm the willingness of the affected household to donate the impacted assets. Additionally, a Donation Confirmation Report (DCR) needed to be prepared for these two subprojects (see Annex 6).

#### **B.** Economic Evaluation

113. The economic and financial analysis of the Lvea commune irrigation subproject is fully documented in a separate economic analysis supplementary document. This section will provide a summary of the analysis.

114. Lvea commune in Preah Sdach district of Prey Veng Province is a new target commune of the TSSD under the Additional Financing arrangement. Major investment in this commune will be in three main areas: (i) irrigation scheme rehabilitation, (ii) LIG establishment and support, and (iii) agricultural and market extension service support, which are aimed at improving farm productivity and diversification of 320 beneficiary households. This investment is expected to help the beneficiary households to reduce their poverty and improve their livelihoods and living conditions. The irrigation command area will comprise 305 ha with potential for double cropping.

115. Total cost of the subproject entered into the economic evaluation was based on best cost estimate by TSSD-AF's Engineers and Financial and Cost Expert, which is \$383,176 (Table 11), inclusive of pro-rated project management cost. Cost Direct benefits generated by the subproject will be derived from (i) certain improvement of wet season rice yield due to availability of water for supplementary irrigation from the scheme, (ii) diversified dry season crops (including lotus and vegetables), and (iii) other high-value farm enterprises (especially improved practice of native-breed chicken keeping, fish growing, frog raising and giant prawn culture).

| Financial cost (\$) <sup>a</sup> Composition<br>Local<br>(%)         Composition<br>Foreign<br>(%)         Skill<br>(%)         Economic cost (\$) <sup>b</sup> Components         50%         20%         20%         10%         182,528           Design         12,615         38%         0%         0%         62%         11,185           Civil works O&M <sup>c</sup> 11,832         50%         20%         20%         10%         182,528           LIGs support and agricultural         100,822         8%         2%         6%         35%         91,962                               |                               |                        | -            |                |                 |              |                        |  |
|---|-------------------------------|------------------------|--------------|----------------|-----------------|--------------|------------------------|--|
| Financial<br>cost (\$) <sup>a</sup> Local<br>(%)         Foreign<br>(%)         Un-skill<br>(%)         Skill<br>(%)         Economic<br>cost (\$) <sup>b</sup> Components         197,200         50%         20%         20%         10%         182,528           Design         12,615         38%         0%         0%         62%         11,185           Civil works O&M <sup>c</sup> 11,832         50%         20%         20%         10%         10,952           LIGs support and agricultural<br>development         100,822         8%         2%         6%         35%         91,962 |                               | Financial              |              | Faanamia       |                 |              |                        |  |
| Components         20%         20%         10%         182,528           Design         12,615         38%         0%         0%         62%         11,185           Civil works O&M <sup>c</sup> 11,832         50%         20%         20%         10%         10,952           LIGs support and agricultural development         100,822         8%         2%         6%         35%         91,962  |                               | cost (\$) <sup>a</sup> | Local<br>(%) | Foreign<br>(%) | Un-skill<br>(%) | Skill<br>(%) | cost (\$) <sup>b</sup> |  |
| Civil works197,20050%20%20%10%182,528Design12,61538%0%0%62%11,185Civil works O&M°11,83250%20%20%10%10,952LIGs support and agricultural100,8228%2%6%35%91,962development   | Components                    |                        |              |                |                 |              |                        |  |
| Design         12,615         38%         0%         0%         62%         11,185           Civil works O&M <sup>c</sup> 11,832         50%         20%         20%         10%         10,952           LIGs support and agricultural development         100,822         8%         2%         6%         35%         91,962   | Civil works                   | 197,200                | 50%          | 20%            | 20%             | 10%          | 182,528                |  |
| Civil works O&M <sup>c</sup> 11,832         50%         20%         20%         10%         10,952           LIGs support and agricultural         100,822         8%         2%         6%         35%         91,962           development         35%         100,822         8%         2%         6%         35%         91,962  | Design                        | 12,615                 | 38%          | 0%             | 0%              | 62%          | 11,185                 |  |
| LIGs support and agricultural         100,822         8%         2%         6%         35%         91,962           development <t< th=""><th>Civil works O&amp;M<sup>c</sup></th><th>11,832</th><th>50%</th><th>20%</th><th>20%</th><th>10%</th><th>10,952</th></t<>   | Civil works O&M <sup>c</sup>  | 11,832                 | 50%          | 20%            | 20%             | 10%          | 10,952                 |  |
| development   | LIGs support and agricultural | 100,822                | 8%           | 2%             | 6%              | 35%          | 91,962                 |  |
| •   | development                   |                        |              |                |                 |              |                        |  |
| Other support <sup>d</sup> 39,862         165%         5%         0%         54%         35,658   | Other support <sup>d</sup>    | 39,862                 | 165%         | 5%             | 0%              | 54%          | 35,658                 |  |
| Project management         16,901         55%         0%         0%         45%         15,203  | Project management            | 16,901                 | 55%          | 0%             | 0%              | 45%          | 15,203                 |  |
| Total 379,232 347,488   | Total                         | 379,232                |              |                |                 |              | 347,488                |  |

#### Table 11: Subproject's main costs

O&M = operation and maintenance.

- <sup>a</sup> Inclusive of taxes and physical contingency. Total values are not discounted.
- <sup>b</sup> Derived from financial value by first netting out taxes, and applying the standard conversion factor (SCF) of 0.92 on local component, and a conversion factor of 0.83 (Shadow wage rate factor SWRF of 0.9 multiplied by SCF) on unskilled labor.
- <sup>c</sup> 2% of construction costs per year, between Year 3 and 5.

<sup>d</sup> Include agriculture information and communication technology, DRR training, and multi-stakeholder value chain platforms. Benefits were not captured in the EFA.

Source: PPTA consultant.

116. The assessment of the subproject's benefit stream was based on historical experience, under TSSD, as regards technology adoption rate of the beneficiary households for the various farm enterprises considered as well as their willingness to grow a second and a third short-maturity crop during the dry season when water for irrigation becomes available. Un-quantified benefits, which may include fishing, animal watering, washing, are not included in the economic analysis.

117. The exchange rate used in the analysis is KR4023.0 to \$1.0. Financial farm gate prices were based on field findings (March-April 2017). World price numéraires, based on the World Bank's Commodity Outlook Reports, were applied to traded crop inputs and outputs. A standard conversion factor (SCF) of 0.92 was applied to local component and local labor (both skilled and unskilled); in addition, local unskilled labor was further adjusted by a shadow wage rate factor (SWRF) of 0.90.

118. Economic evaluation demonstrates that the subproject is feasible and attractive at the cutoff discount rate (or cost of capital) of 12%. The period of the evaluation is 20 years, assuming that the irrigation scheme construction would be based on DRR-responsive design and using DRR-resilient materials with no or limited maintenance cost after the TSSD-AF implementation timeframe (2018-2023). At 12% cut-off point the base-case NPV is \$140,300 (Table 12). The subproject's base-case EIRR is 19.1%.

119. Sensitivity tests of the economic analysis were performed on five variables: (i) increased capital cost, (ii) increased recurrent cost, (iii) 10% decrease in benefits, (iv) 20% decrease in benefits, and (v) one-year delay in benefits. The tests' summary results are given in the same Table 12 below. The sensitivity tests show that the most sensitive economic indicators are the 20% reduction in benefits followed by the one-year delay in benefits. While the one-year delay in benefits will reduce the EIRR to 16.1%, the reduction in benefits by 20% will see the EIRR of the subproject decline to 15%. The subproject is highly sensitive to these two variables.

| Iable                      | 12. Summary econ |       | calors    |           |
|----------------------------|------------------|-------|-----------|-----------|
| Case                       | ENPV ('000 US\$) | EIRR  | SI (ENPV) | SV (ENPV) |
| 0. Base case               | 140.30           | 19.1% | -         | -         |
| 1. Capital costs + 10%     | 123.87           | 18.0% | 2.0       | 49%       |
| 2. Recurrent costs + 10%   | 129.32           | 18.4% | 2.0       | 49%       |
| 3. Benefits decrease - 10% | 97.79            | 17.1% | 3.0       | 33%       |
| 4. Benefits decrease - 20% | 55.29            | 15.0% | 3.0       | 33%       |
| 5. Benefits delay - 1 year | 87.07            | 16.1% | 3.0       | 38%       |

 Table 12: Summary economic indicators

EIRR = economic internal rate of return; ENPV = economic net present value; SI = sensitivity indicator (the ratio that compares percentage change in ENPV with percentage change in a variable); SV = switching value (the percentage change in a variable sufficient to reduce ENPV to zero).

Source: PPTA consultant.

#### C. Environmental Impacts

120. Pre-construction and design issues for the Lvea commune irrigation subproject focus on matching the total irrigation area for a new dry season crop to the availability of water, without impacting on other water users. There is also recognition of the benefit of canal bank vegetation on the local environment and provisions to prevent its wanton removal.

121. During construction, the main environmental issues will be air and water pollution and soil erosion, all of which must be managed by strict control of construction contractors and effective implementation of EMP mitigation and monitoring measures. Additional localized traffic congestion is anticipated, especially during planting and harvesting, and this will be minimized by responsible work scheduling and transport planning.

122. Post-construction, the main concerns for the irrigation subproject are local increases in the levels of agricultural fertilizer and pesticide residues and their effects on water quality and people. Post-construction mitigation will benefit from capacity building and training under the project to use fertilizers and pesticides efficiently and responsibly. There is also a concern that the irrigation scheme must be sustainable and responsibly managed, to ensure that agreed irrigation flows are maintained and other water users are not disadvantaged.

123. Mitigation of construction-phase impacts relies heavily on responsibility of works contractors to follow specification clauses specifically designed to minimize pollution of air and water and soil erosion. This mitigation will in turn rely on enforcement by NCDDS's National Safeguards Officer and the commune councils.

124. A climate risk and vulnerability assessment (CRVA) has been prepared for the project and includes adaptation measures to be applied to irrigation subprojects. These have been included in the subproject design.

#### VII. CRITICAL RISKS

- 125. The major risks relate to water availability.
  - (i) That PDOWRAM stops funding the pumps.
  - (ii) That the whole scheme designed by the Chinese becomes viable and all five pumping stations start operation. This could lead to water shortage from February to May and prevent farmers growing a third crop.

#### I. INTRODUCTION

1. Under the subproject three secondary canals either side of Highway No. 1 (NR1) in Lvea Commune, Preah Sdach District, Prey Veng Province will be rehabilitated. They will serve a total command area of 305 ha owned by 141 families. The rehabilitated canals will enable the area double cropped with rice to increase from the present 40 ha to the full 305 ha, a total increase of 265 ha. A third rice crop is possible four years out of five.

#### II. EXISTING IRRIGATION SYSTEM

2. Canals were first constructed in Lvea commune during the Pol Pot era, but they quickly deteriorated and silted up. In 2013 the Republic of China built five pumping stations along the Kampong Trabaek river, each with 2 large irrigation pumps and two large drainage pumps. Some poor quality primary and secondary canals in several communes were provided with the aim of eventually irrigating a total of 8,000 ha on the flood plain either side of the river. These mostly follow the alignment of the Polo Pot era canals.

3. In Lvea Commune the Chinese project funded Pump Station 2 and the first 2.6 km section of MC10, as far as Highway No. 1. In 2014 MOWRAM built an extension from MC10 southward from Highway No. 1, giving the canal a total length of about 7 km. Part of the south of Lvea is irrigated by a main canal which follows the commune's eastern border from Pump Station 3.

4. Farmers cultivate a number of varieties of rice, varying in duration of growing period from 90 to 150 days.<sup>1</sup> Sowing patterns to minimize drought risk in response to the prevailing climatic constraints is currently changing, with new rice varieties and farming techniques adopted from farmers in the Mekong Delta in Vietnam. A substantial majority of farmers now use short season IR504 and direct seeding, rather than transplant.

5. At present it is estimated that about 2,000 ha of wet season rice is grown in Lvea commune, some of which can receive supplementary irrigation in dry periods. A second crop of about 500 ha of rice is grown under irrigation, pumping water direct from MC10, another main canal from Pump Station 3, from the few existing secondary canals or from groundwater.

6. At present MOWRAM funds the electricity costs of running the main pumps, with help from a local businessman. One of the two pumps in Pump Station 2 is run for about 10 hours a night when electricity charges are lower (\$ 0.17/kWh during the day, \$ 0.12/kWh at night)<sup>2</sup>. The pump can be operated for longer when necessary. Farmers claim that they cannot afford to contribute as they have to pay to pump to their fields from the main and secondary canals, as gravity irrigation is not possible.

7. In 2014 MOWRAM supported the establishment of a Farmer Water User Community (FWUC) in Lvea and 11 Water User Groups (WUG), one for each village. Capacity building was provided to the FWUC to: (i) Plan and manage irrigation water from the Pump Station; (ii) Manage fund raising and O&M spending; (iii) Intervene on time when farmers face a water shortage; and

<sup>&</sup>lt;sup>1</sup> Varieties used at present in Lvea included IR504 (75-90 days), IR66 (110 days) Kror Sang Teap (180 days), Smer (180-200 days) Phkar Rumduol (150 days), Banla Pdai (180 days) and Senpidao (110-115 days).

<sup>&</sup>lt;sup>2</sup> Also, there are doubts about the capacity of the electricity grid to supply sufficient power for all the pumps along the river if they are run during the day.

(iv) Solve local conflicts between farmers. The commune chief together with the FWUC, and with the agreement of village WUGs, works out the timetable for rotation of water between secondary canals. Farmers can request extra water through their village chiefs who pass on the request to the FWUC and PDWRAM. Farmers may take water from any nearby canal whenever it is available.

8. According to FWUC regulations each farmer must pay \$25/ha/season for access to irrigation water. This raises between \$8,750 and \$12,500 a year, of which 30% goes to the Committee, 10% is spent on administration and 60% on repairs and maintenance. Farmers provide labor for small-scale repairs and maintenance of canals. The FWUC is responsible for larger works costing over \$500. At present, few farmers pay more than \$25 a year, and some say they cannot afford that much. At some future date, they will be expected to pay the pump running costs.

#### III. PHYSICAL CONDITIONS

#### A. Topography

9. The Lvea subproject area is located south of the Kampong Trabaek river (see Figure 1 below) in a relatively flat area, less than 7m above mean sea level.

# Figure 1: Map showing the subproject area terrain and the locations of the 3 proposed canals (Map source: MRC 2003)



#### B. Climate

- 10. The subproject area has a monsoon climate with pronounced wet and dry seasons:
  - (i) Wet season from May/June to November this is the warmer time of year during which heavy rain occurs, the wettest months are September and October.
  - (ii) Dry season from December to May January/February are the driest months.

11. Average yearly rainfall in Prey Veng is 1,379 (see Table 2 below). Substantial rainfall variability often results in serious difficulties for rice farmers during the first few months of the wet season, when rainfall can be erratic, and early season droughts are common. False starts to the rainy season result in a high incidence of early crop failure under rainfed conditions. In July and early August there are sometimes lengthy dry spells, or periods with only light showers, during times of high crop-water demand. The cessation of heavy rain at the end of the wet season can also be very abrupt and is unpredictable, so if long-duration rice is planted too late there is a potential for water shortage at the end of the growing season.

#### C. Rainfall

12. The annual rainfall at Prey Veng between 1984 and 2011 varies from 864 mm to 2,183 mm. The average annual rainfall<sup>3</sup> is 1,379 mm.

| Year Months     | Jan  | Feb  | Mar  | Apr | May | Jun  | Jul | Aug  | Sep  | Oct | Nov  | Dec     | Annual |
|-----------------|------|------|------|-----|-----|------|-----|------|------|-----|------|---------|--------|
| 1984            | 0    | 0    | 0    | 117 | 0   | 150  | 35  | 94   | 450  | 0   | 12   | 6       | 864    |
| 1985            | 11   | 0    | 0    | 125 | 221 | 158  | 104 | 142  | 176  | 195 | 118  | 0       | 1,249  |
| 1966            | 1    | 0    | 0    | 34  | 166 | 137  | 83  | 208  | 246  | 291 | 171  | 12      | 1,348  |
| 1987            | 0    | 0    | 0    | 0   | 44  | 48   | 89  | 191  | 317  | 239 | 212  | 0       | 1,140  |
| 1988            | 9    | 33   | 49   | 142 | 241 | 247  | 189 | 134  | 233  | 311 | 97   | 3       | 1,688  |
| 1989            | 6    | 0    | 31   | 105 | 95  | 108  | 280 | 144  | 178  | 0   | 0    | 0       | 947    |
| 1990            | 0    | 0    | 22   | 69  | 146 | 137  | 202 | 204  | 159  | 273 | 43   | 0       | 1,255  |
| 1991            | 0    | 0    | 0    | 96  | 67  | 206  | 182 | 112  | 90   | 166 | 0    | 0       | 918    |
| 1992            | 0    | 1    | 2    | 120 | 43  | 92   | 140 | 139  | 182  | 190 | 21   | 18      | 947    |
| 1993            | 23   | 0    | 80   | 10  | 161 | 195  | 287 | 0    | 233  | 348 | 98   | 1       | 1,437  |
| 1994            | 6    | 0    | 124  | 85  | 97  | 216  | 71  | 221  | 312  | 95  | 11   | 32      | 1,269  |
| 1995            | 0    | 0    | 46   | 39  | 235 | 171  | 198 | 233  | 488  | 312 | 112  | 20      | 1,854  |
| 1996            | 51   | 2    | 0    | 138 | 117 | 267  | 291 | 143  | 283  | 406 | 167  | 52      | 1,915  |
| 1997            | 0    | 118  | 18   | 262 | 309 | 95   | 182 | 155  | 207  | 438 | 51   | 13      | 1,846  |
| 1998            | 0    | 0    | 0    | 87  | 58  | 83   | 304 | 432  | 196  | 304 | 309  | 126     | 1,898  |
| 1999            | 77   | 16   | 34   | 345 | 206 | 131  | 101 | 341  | 277  | 241 | 141  | 55      | 1,965  |
| 2000            | 35   | 47   | 47   | 206 | 220 | 302  | 207 | 199  | 259  | 344 | 158  | 159     | 2,183  |
| 2001            | 86   | 11   | 123  | 86  | 28  | 31   | 51  | 188  | 66   | 231 | 0    | 0       | 901    |
| 2002            | 0    | 0    | 0    | 22  | 76  | 131  | 42  | 69   | 179  | 195 | 193  | 113     | 1,020  |
| 2003            | 0    | .0   | 21   | 33  | 36  | 54   | 253 | 199  | 134  | 154 | 22   | 0       | 906    |
| 2004            | 24   | 0    | 0    | 69  | 124 | 140  | 110 | 139  | 208  | 181 | 53   | 0       | 1.049  |
| 2005            | 0    | 0    | 5    | 31  | 31  | 97   | 124 | 112  | 260  | 406 | 156  | 31      | 1,252  |
| 2006            | 0    | 52   | 56   | 109 | 33  | 210  | 111 | 217  | 183  | 187 | 11   | 12      | 1 181  |
| 2007            | 0    | 0    | 58   | 77  | 44  | 170  | 171 | 344  | 208  | 217 | 38   | 5       | 1 331  |
| 2008            | 10   | 5    | 51   | 119 | 102 | 133  | 203 | 261  | 254  | 277 | 235  | 77      | 1.726  |
| 2009            | 0    | 24   | 64   | 171 | 308 | 107  | 114 | 210  | 209  | 93  | 23   | 0       | 1.323  |
| 2010            | 53   | 0    | 122  | 115 | 81  | 150  | 216 | 235  | 256  | 520 | 62   | 20      | 1.829  |
| 2011            | 0    | 1    | 35   | 100 | 242 | 110  | 173 | 286  | 240  | 117 | 53   | 5       | 1 370  |
| 2011            |      |      |      | 100 | LIL | 110  | 110 | 200  | 2.10 |     | Au   | erano = | 1 379  |
| Maximum         | 85   | 118  | 124  | 345 | 309 | 302  | 304 | 437  | 488  | 520 | 309  | 159     | 2183   |
| Average         | 14.0 | 11.0 | 35.7 | 104 | 126 | 146  | 161 | 191  | 232  | 240 | 91.6 | 27.2    | 1379.0 |
| Minimum         | 0    | 0    | 0    | 0   | 0   | 31   | 35  | 0    | 66   | 0   | 0    | 0       | 864    |
| 20% Exceedence  | 24   | 14   | 57   | 133 | 220 | 201  | 212 | 234  | 270  | 331 | 163  | 44      | 1830   |
| 50% Exceedence  | 0    | 0    | 26   | 08  | 99  | 137  | 172 | 195  | 221  | 235 | 58   | 9       | 1206   |
| 80% Exceedence  |      |      | 0    | 36  | 43  | 95   | 94  | 135  | 179  | 150 | 16   |         | 976    |
| as a careequire |      | 0    |      | 30  | 43  | - 73 |     | 1.30 | 113  | 100 | +0   | v       | 2/0    |

 Table 1: showing monthly rainfall distribution at Prey Veng (mm)

<sup>3</sup> M-IWRM Volume 2 Feasibility Report of Bopear Irrigation Scheme, Final Draft, September 2012.

13. For the years 1984 to 2011 nearly 90% of rain fell during the period May to November with highest rainfall recorded in September and October. The Hydrological Report for the proposed Bopear Project<sup>3</sup> found the maximum 24 hours rainfall at Prey Veng was 145 mm recorded in October 2002.

14. According to the National Adaptation Program of Action to Climate Change (NAPA) of all provinces in Cambodia, Prey Veng Province is the one most vulnerable to floods and second most vulnerable for droughts. The likelihood of drought in Cambodia is once in 3 years.

15. Dry spells of 10 days or more, with little or no rain, can occur at any time during the wet season and affect rice yields if supplementary irrigation is not available, particularly in the early stages of crop growth before the root system has developed sufficiently to use sub-surface soil moisture.

#### D. Evapotranspiration (ETo)

16. Climatic data on insolation, evaporation and sunshine hours were used to calculate ETo using the Penman-Monteith method. Values tend to rise during the dry season and fall in response to the heaviest monsoon rainfall. This decrease during the rainy season is partly due to cloud-top reflection of insolation, and partly to the suppressive effect of humidity during and after rain.

| Month        | Av. Rainfall | Temp Max | Temp Min | Humidity | Wind speed | Sunshine | Solar Radiation | ETo    |
|--------------|--------------|----------|----------|----------|------------|----------|-----------------|--------|
| MOILI        | mm/day       | °C       | °C       | %        | m/sec      | hrs/day  | MJ/m2/day       | mm/day |
| Jan          | 13           | 33.9     | 17.5     | 73       | 1.8        | 8        | 12.2            | 3.5    |
| Feb          | 12           | 35.4     | 19       | 71       | 1.6        | 8.4      | 13.7            | 3.8    |
| Mar          | 32           | 36.7     | 20.6     | 72       | 1.9        | 7.7      | 16.2            | 4.6    |
| Apr          | 104          | 36.8     | 21.2     | 73       | 1.5        | 7.5      | 15.6            | 4.2    |
| May          | 123          | 35.5     | 22.6     | 77       | 1.5        | 6.8      | 15.6            | 4      |
| Jun          | 147          | 36.1     | 21.7     | 78       | 2          | 6.3      | 14.6            | 4.1    |
| Jul          | 159          | 34.9     | 21.8     | 79       | 2.9        | 6        | 15.4            | 4.4    |
| Aug          | 186          | 34.4     | 21.8     | 80       | 2.6        | 5.6      | 13.7            | 3.9    |
| Sep          | 230          | 34       | 21.8     | 83       | 1.7        | 5.8      | 12.9            | 3.3    |
| Oct          | 234          | 33       | 21       | 83       | 1.9        | 6.2      | 12.7            | 3.2    |
| Nov          | 94           | 32.3     | 18.7     | 78       | 1.5        | 7.6      | 12.8            | 3.2    |
| Dec          | 28           | 32.8     | 17.7     | 74       | 2.9        | 7.9      | 13.8            | 4.1    |
| Year/Average | 1362         | 34.7     | 20.5     | 77       | 2          | 7        | 14.1            | 1408   |

 Table 2: Showing climatic data and calculated ETo

N.B. Rainfall from Prey Veng. Humidity, wind speed, sunshine hours and solar radiation from Phnom Penh. ETo computed using Penman-Monteith method (FAO Irrigation and Drainage Paper 56)

#### E. River flows

17. There is one river gauging station on the Kampong Trabaek river, located in Kampong Trabaek town. Average monthly flows (in m<sup>3</sup>/s), together with their statistics for the Kampong Trabaek river are shown in the table below. As the river is a distributary of the Mekong river, its monthly flow distribution follows the same pattern as the Mekong, with the highest flow in September and October and lowest from March to May. During the preparation of both the Bopear Canal Irrigation System Project and the CAVAC Anlung Reach Irrigation Scheme flow measurements were taken in the Kampong Traebek River. These indicated that the gauging

station figures underestimated the flow rates slightly.

| Year / Month   | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep  | Oct | Nov | Dec |  |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|--|
| 2001           | 19  | 15  | 11  | 9   | 8   | 19  | 45  | 184 | 354  | 185 | 92  | 37  |  |
| 2002           | 18  | 14  | 8   | 6   | 6   | 26  | 89  | 321 | 541  | 339 | 138 | 67  |  |
| 2003           | 31  | 19  | 9   | 5   | 7   | 15  | 36  | 79  | 367  | 269 | 67  | 22  |  |
| 2004           | 12  | 8   | 6   | 4   | 8   | 16  | 20  | 67  | 170  | 168 | 45  | 20  |  |
| 2005           | 13  | 9   | 5   | 4   | 3   | 5   | 31  | 786 | 1140 | 732 | 111 | 38  |  |
| 2006           | 13  | 5   | 5   | 5   | 5   | 10  | 40  | 343 | 455  | 633 | 122 | 37  |  |
| 2007           | 16  | 8   | 6   | 4   | 4   | 11  | 34  | 105 | 171  | 532 | 142 | 45  |  |
| 2008           | 18  | 8   | 6   | 7   | 12  | 24  | 55  | 190 | 268  | 300 | 149 | 87  |  |
| 2009           | 32  | 17  | 9   | 7   | 12  | 24  | 67  | 201 | 256  | 751 | 117 | 33  |  |
| 2010           | 16  | 9   | 7   | 9   | 9   | 11  | 14  | 59  | 136  | 171 | 78  | 26  |  |
|                |     |     |     |     |     |     |     |     |      |     |     |     |  |
| Maximum        | 32  | 19  | 11  | 9   | 12  | 26  | 89  | 786 | 1140 | 751 | 149 | 87  |  |
| Average        | 19  | 11  | 7   | 6   | 8   | 16  | 43  | 234 | 386  | 408 | 106 | 41  |  |
| Minimum        | 12  | 5   | 5   | 4   | 3   | 5   | 14  | 59  | 136  | 168 | 45  | 20  |  |
|                |     |     |     |     |     |     |     |     |      |     |     |     |  |
| 20% exceedance | 21  | 15  | 9   | 8   | 10  | 24  | 57  | 325 | 472  | 653 | 139 | 50  |  |
| 50% exceedance | 17  | 9   | 7   | 6   | 7   | 15  | 38  | 187 | 311  | 320 | 114 | 37  |  |
| 80% exceedance | 13  | 8   | 6   | 4   | 5   | 10  | 29  | 76  | 171  | 182 | 76  | 25  |  |

## Table 3: Showing monthly river flows (m³/s) in the Kampong Trabaek River for period2001-2010 at NR1 bridge in Kampong Trabaek

#### F. Soils

18. The subproject falls in the physiographic regions of old colluvial-alluvial plains where soils have developed from previously weathered material that has been transported and deposited to its current location. In Lvea the soil mainly comprises a shallow surface layer of clay loam over a clay subsoil. It is well suited to rice production under irrigation.

IV. IRRIGATION AND DRAINAGE RQUIREMENT S

#### A. Irrigation water requirements and pumping rates

19. Table 5 below shows the crop water requirements, subproject water requirements and pumping rates for three rice crops a year. These calculations were undertaken to ensure that adequate water will be available for the subproject and other users of the supply from Pump Station 2. The cropping pattern may vary.

20. One pump of the two at Pump Station 2 is generally operated daily for 10 hours, usually during the night. This is partly because power is cheaper, costing \$0.12/kWh at night and \$\$0.17/kWh during the day, and partly because the local electricity grid cannot supply sufficient power for all the pumps along the river during the day. When necessary the pump can be operated for longer. The pump costs \$19.2/hour to run at present. MOWRAM pays the pump running costs and for repairs costing more than \$500. The FWUC and Water User Groups (WUG) pay for repairs and spare parts costing less than \$500. At some future date beneficiary farmers will be expected to pay the pump running costs.

21. In dry years the total water requirements for existing irrigation systems and the proposed subproject may exceed the 80% dependable flow in the Kampong Trabaek, which could lead to
conflicts over water between the various diversion schemes. There may be a need to propose a modified cropping pattern and other water conservation options for the optimum use of the available water resources.

# B. Drainage requirements

22. Based on 1 in 5 year rainfall in Prey Veng, drains should be designed for a discharge of 4.5 l/s/ha. As the three canals will serve for both irrigation and drainage and the drainage requirement is larger than the irrigation requirement, canals will be designed for drainage flows. The canal/drains will be large enough to dispose of excess rainfall most of the time, but may overtop about once every five years.

|                  |           | JAN  | 1    | FEB  |      | MA      | ۲    | APF  | l    | MA   | Y    | JUL  | Ν    | JU  | JL  | AU  | G      | SEP   | Т    | OC.  | г   | NO         | V      | DEC       |      |
|------------------|-----------|------|------|------|------|---------|------|------|------|------|------|------|------|-----|-----|-----|--------|-------|------|------|-----|------------|--------|-----------|------|
|                  |           | 1    | Ш    | 1    | Ш    | 1       | Ш    | 1    | Ш    | 1    | Ш    | 1    | П    | I   | П   | I   | П      | 1     | П    | 1    | П   | I          | П      |           | Ш    |
|                  |           |      |      |      |      | Dry Sea | ison |      |      |      |      |      |      |     |     |     | Wet Se | eason |      |      |     |            |        | Dry Sea   | son  |
| Eto (Penman)     | mm/day    | 3.5  | 3.5  | 3.8  | 3.8  | 4.6     | 4.6  | 4.2  | 4.2  | 4    | 4    | 4.1  | 4.1  | 4.4 | 4.4 | 3.9 | 3.9    | 3.3   | 3.3  | 3.2  | 3.2 | 3.2        | 3.2    | 4.1       | 4.1  |
| Crop 1           |           |      |      |      |      |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 1         |      |
| 15 day periods   |           |      |      |      |      |         |      |      |      |      |      |      |      |     | 15  | 15  | 15     | 15    | 15   | 15   |     |            |        | 1         |      |
| Stage            |           |      |      |      |      |         |      |      |      |      |      |      |      |     | V   | V   | Р      | Р     | R    | R    |     |            |        | 1         |      |
| Crop factor Kc   |           |      |      |      |      |         |      |      |      |      |      |      |      |     | 1.1 | 1.1 | 1.05   | 1.05  | 0.95 | 0.95 |     |            |        | 1         |      |
| Etc (=Kc*Eto)    | mm/day    |      |      |      |      |         |      |      |      |      |      |      |      |     | 4.8 | 4.3 | 4.1    | 3.5   | 3.1  | 3.0  |     |            |        | 1         |      |
| Crop requirement | mm/period |      |      |      |      |         |      |      |      |      |      |      |      |     | 73  | 64  | 61     | 52    | 47   | 46   |     |            |        | 1         |      |
| Percolation      | mm/day    |      |      |      |      |         |      |      |      |      |      |      |      |     | 1   | 1   | 1      | 1     | 1    | 1    |     |            |        | 1         |      |
| Percolation      | mm/period |      |      |      |      |         |      |      |      |      |      |      |      |     | 15  | 15  | 15     | 15    | 15   | 15   |     |            |        | 1         |      |
| Land preparation | mm/period |      |      |      |      |         |      |      |      |      |      |      |      | l   |     |     |        |       |      |      |     |            |        | 1         |      |
| Crop 2           |           |      |      |      |      |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 1         |      |
| 15 day periods   |           | 15   | 15   | 15   | 15   |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     | <b></b>    |        | 15        | 15   |
| Stage            |           | Р    | Р    | R    | R    |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            | LP     | V         | V    |
| Crop factor Kc   |           | 1.05 | 1.05 | 0.95 | 0.95 |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 1.1       | 1.1  |
| Etc (=Kc*Eto)    | mm/day    | 3.7  | 3.7  | 3.6  | 3.6  |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 4.5       | 4.5  |
| Crop requirement | mm/period | 55   | 55   | 54   | 54   |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 68        | 68   |
| Percolation      | mm/day    | 2.5  | 2.5  | 2.5  | 2.5  |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 2.5       | 2.5  |
| Percolation      | mm/period | 37.5 | 37.5 | 37.5 | 37.5 |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | 37.5      | 37.5 |
| Land preparation | mm/period |      |      |      |      |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     | L          | 100    | ·         |      |
| Crop 3           |           |      |      |      |      |         |      |      |      |      |      |      |      |     |     |     |        |       |      |      |     |            |        | l         |      |
| 15 day periods   |           |      |      |      |      | Г       |      | 15   | 15   | 15   | 15   | 15   | 15   |     |     |     |        |       |      |      |     |            |        | 1         |      |
| Stage            |           |      |      |      |      |         | LP   | V    | V    | Р    | Р    | R    | R    |     |     |     |        |       |      |      |     |            |        | 1         |      |
| Crop factor Kc   |           |      |      |      |      |         |      | 1.1  | 1.1  | 1.05 | 1.05 | 0.95 | 0.95 |     |     |     |        |       |      |      |     |            |        |           |      |
| Etc (=Kc*Eto)    | mm/day    |      |      |      |      |         |      | 4.6  | 4.6  | 4.2  | 4.2  | 3.9  | 3.9  |     |     |     |        |       |      |      |     | LP =       | = land | prepar    | atio |
| Crop requirement | mm/period |      |      |      |      |         |      | 69   | 69   | 63   | 63   | 58   | 58   |     |     |     |        |       |      |      |     | <u>-</u> . |        | F. 5601   |      |
| Percolation      | mm/day    |      |      |      |      |         |      | 2.5  | 2.5  | 2.5  | 1    | 1    | 1    |     |     |     |        |       |      |      |     | V =        | veget  | ative sta | age  |
| Percolation      | mm/period |      |      |      |      |         |      | 37.5 | 37.5 | 37.5 | 15   | 15   | 15   |     |     |     |        |       |      |      |     |            | Ũ      | 1         | 5    |
| Land preparation | mm/period |      |      |      |      |         | 100  |      |      |      |      |      |      |     |     |     |        |       |      |      |     | P =        | produ  | ction sta | age  |
|                  |           |      |      |      |      |         |      |      |      |      |      |      |      |     |     |     |        |       |      | 1    |     | L          |        | ·         |      |

# Table 4: Showing irrigation water requirements and pumping rates required for 305 ha commanded by SC1, SC2 and SC3

|                               |           | JAL     | N      | FE    | В     | MA   | R     | AP    | R     | MA    | ٩Y    | JUL  | N    | JU   | IL    | AU   | G    | SEP   | Τ     | 00    | Т     | NO   | V     | DE    | С     |
|-------------------------------|-----------|---------|--------|-------|-------|------|-------|-------|-------|-------|-------|------|------|------|-------|------|------|-------|-------|-------|-------|------|-------|-------|-------|
|                               |           | 1       | П      | 1     | П     | I    | П     | 1     | П     | I.    | Ш     | I    | П    | 1    | Ш     | 1    | П    | 1     | П     | -     | П     | I    | П     | 1     | П     |
| Rainfall (monthly average)    | mm/month  | 13      | ;      | 12    | 2     | 32   |       | 10    | 4     | 12    | 3     | 14   | 7    | 15   | 9     | 18   | 6    | 23    | 0     | 234   | 4     | 94   | ł     | 28    | 3     |
| Rainfall (period average)     | mm/period | 6.6     | 6.6    | 5.9   | 5.9   | 16.0 | 16.0  | 51.9  | 51.9  | 61.7  | 61.7  | 73.4 | 73.4 | 79.4 | 79.4  | 92.9 | 92.9 | 115.2 | 115.2 | 117.2 | 117.2 | 47.1 | 47.1  | 14.2  | 14.2  |
| Effective rainfall (80%)      | mm/month  | 10.     | 5      | 9.4   | 1     | 25.  | 5     | 83    | .0    | 98    | .6    | 117  | .4   | 127  | 7.0   | 148  | .6   | 184   | .2    | 187.  | .4    | 75.  | 4     | 22.   | .6    |
| Effective rainfall (80%)      | mm/period | 5.2     | 5.2    | 4.7   | 4.7   | 12.8 | 12.8  | 41.5  | 41.5  | 49.3  | 49.3  | 58.7 | 58.7 | 63.5 | 63.5  | 74.3 | 74.3 | 92.1  | 92.1  | 93.7  | 93.7  | 37.7 | 37.7  | 11.3  | 11.3  |
| Total net irr. requirements   | mm/period | 87      | 87     | 87    | 87    | 0    | 87    | 65    | 65    | 51    | 29    | 15   | 15   | 0    | 24    | 5    | 2    | 0     | 0     | 0     | 0     | 0    | 62    | 94    | 94    |
| Total net irr. requirements   | mm/day    | 5.8     | 5.8    | 5.8   | 5.8   | 0    | 5.8   | 4.4   | 4.4   | 3.4   | 1.9   | 1.0  | 1.0  | 0    | 1.6   | 0.3  | 0.1  | 0     | 0     | 0     | 0     | 0    | 4.2   | 6.3   | 6.3   |
| Net crop water requirement    | l/sec/ha  | 0.7     | 0.7    | 0.7   | 0.7   | 0    | 0.7   | 0.5   | 0.5   | 0.4   | 0.2   | 0.1  | 0.1  | 0    | 0.2   | 0    | 0    | 0     | 0     | 0     | 0     | 0    | 0.5   | 0.7   | 0.7   |
| Field application efficiency  | 0.6       | 0.6     | 0.6    | 0.6   | 0.6   | 0    | 0.6   | 0.6   | 0.6   | 0.6   | 0.6   | 0.6  | 0.6  | 0    | 0.6   | 0.6  | 0.6  | 0     | 0     | 0     | 0     | 0    | 0.6   | 0.6   | 0.6   |
| Field crop water requirements | l/sec/ha  | 1.1     | 1.1    | 1.1   | 1.1   | 0    | 1.1   | 0.8   | 0.8   | 0.7   | 0.4   | 0.2  | 0.2  | 0    | 0.3   | 0.1  | 0.0  | 0     | 0     | 0     | 0     | 0    | 0.8   | 1.2   | 1.2   |
| SC efficiency                 | 0.75      | 0.75    | 0.75   | 0.75  | 0.75  | 0    | 0.75  | 0.75  | 0.75  | 0.75  | 0.75  | 0.75 | 0.75 | 0    | 0.75  | 0.75 | 0.75 | 0.75  | 0.75  | 0.75  | 0.75  | 0.75 | 0.75  | 0.75  | 0.75  |
| SC head water requirements    | l/sec/ha  | 1.5     | 1.5    | 1.5   | 1.5   | 0    | 1.5   | 1.1   | 1.1   | 0.9   | 0.5   | 0.3  | 0.3  | 0    | 0.4   | 0.1  | 0.0  | 0     | 0     | 0     | 0     | 0    | 1.1   | 1.6   | 1.6   |
| Major canal efficiency        | 0.75      | 0.75    | 0.75   | 0.75  | 0.75  | 0    | 0.75  | 0.75  | 0.75  | 0.75  | 0.75  | 0.75 | 0.75 | 0    | 0.75  | 0.75 | 0.75 | 0.75  | 0.75  | 0.75  | 0.75  | 0.75 | 0.75  | 0.75  | 0.75  |
| Intake water requirements     | l/sec/ha  | 2.0     | 2.0    | 2.0   | 2.0   | 0    | 2.0   | 1.5   | 1.5   | 1.2   | 0.7   | 0.3  | 0.3  | 0    | 0.6   | 0.1  | 0.0  | 0     | 0     | 0     | 0     | 0    | 1.4   | 2.1   | 2.1   |
| Intake water requirements     | m³/sec    | 0.61    | 0.61   | 0.61  | 0.61  | 0    | 0.61  | 0.46  | 0.46  | 0.36  | 0.20  | 0.10 | 0.10 | 0    | 0.17  | 0.04 | 0.01 | 0     | 0     | 0     | 0     | 0    | 0.43  | 0.65  | 0.65  |
| Command area in ha            |           | 305     | 305    | 305   | 305   | 0    | 305   | 305   | 305   | 305   | 305   | 305  | 305  | 0    | 305   | 305  | 305  | 305   | 305   | 305   | 0     | 0    | 305   | 305   | 305   |
| Gross Requirement             | mm/day    | 17      | 17     | 17    | 17    | 0    | 17    | 13    | 13    | 10    | 6     | 3    | 3    | 0    | 5     | 1    | 0    | 0     | 0     | 0     | 0     | 0    | 12    | 19    | 19    |
| Requirement for subproject    | m³/day    | 52647   | 52647  | 52373 | 52373 | 0    | 52559 | 39353 | 39353 | 30834 | 17279 | 8883 | 8883 | 0    | 14532 | 3030 | 1268 | 0     | 0     | 0     | 0     | 0    | 37546 | 56530 | 56530 |
| Pumping rate required         | l/s       | 609     | 609    | 606   | 606   | 0    | 608   | 455   | 455   | 357   | 200   | 103  | 103  | 0    | 168   | 35   | 15   | 0     | 0     | 0     | 0     | 0    | 435   | 654   | 654   |
| Assuming 10hr pumping/day     | l/s       | 1462    | 1462   | 1455  | 1455  | 0    | 1460  | 1093  | 1093  | 857   | 480   | 247  | 247  | 0    | 404   | 84   | 35   | 0     | 0     | 0     | 0     | 0    | 1043  | 1570  | 1570  |
| PS2 actual pumping rate       | l/s       | 2700    | 2700   | 2700  | 2700  | 0    | 2700  | 2700  | 2700  | 2700  | 2700  | 2700 | 2700 | 0    | 2700  | 2700 | 2700 | 0     | 0     | 0     | 0     | 0    | 2700  | 2700  | 2700  |
| Vegetative Stag               | je        | 25 to 6 | 5 days | S     |       |      |       |       |       |       |       |      |      |      |       |      |      |       |       |       |       |      |       |       |       |
| Productive Stac               | je        | 35 days | S      |       |       |      |       |       |       |       |       |      |      |      |       |      |      |       |       |       |       |      |       |       |       |
| Ripening Stage                | •         | 30 days | 5      |       |       |      |       |       |       |       |       |      |      |      |       |      |      |       |       |       |       |      |       |       |       |

23. The water supply for the three secondary canals proposed for rehabilitation will come from Main Canal No. 10 (MC10) which is supplied by the Chinese funded Pump Station No 2 on the Kampong Trabaek River in Lvea commune. Pump Station 2 has two irrigation pumps each able to pump 2.6 m<sup>3</sup>/s and two drainage pumps each with a capacity of 5 m<sup>3</sup>/s. Generally only one irrigation pump is run at a time.

24. The subproject will be developed over one or two years, depending on the contractor. If works cannot be completed in one year, in the first year 2.5 km of Boeung Snao/Takork canal (SC2) and associated structures will be constructed. In the second year Boeung Snao canal will be completed and the Thnaot Chros (SC1) and Peany canals (SC3) will be constructed.

25. The three canals will serve for both irrigation and drainage. Calculations show that the maximum irrigation flow required in the subproject canals is 1.6 l/s/ha, but the drainage requirement of 4.5 l/s/ha is larger. Design of the canals will therefore be based on the drainage requirement. PVC pipes will be placed through the canal banks at regular intervals to allow farmers to drain their fields without cutting through the banks.

26. A head regulator where the Boeung Snao/Takork canal comes off MC10 was constructed by MOWRAM in 2014 and is in working order. Four pipe culverts will be provided where tracks bisect the canal line to allow pedestrians and vehicles to cross without damaging the canal banks.

27. Thnaot Chros canal will take water from MC10 via an existing secondary canal with flow regulated by an existing head regulator. Two pipe culverts crossing structures will be provided.

28. Peany canals is at present supplied with water from MC10 by a culvert with no gate. This will be replaced with a head regulator. One pipe culvert crossing structure will be needed.

29. Construction materials will come from Neak Loeung market, on the banks of the Mekong river about 18 km north west of the subproject site and just off Highway No. 1.

30. Based on local conditions and available water three rice crops a year over the entire command area are possible in most years.

|       |              |        |          |            |            | _     |           |             |
|-------|--------------|--------|----------|------------|------------|-------|-----------|-------------|
|       | Proposed     |        | Proposed | Present    | cropping   | Pro   | posed cro | pping       |
| Canal | Village      | canal  | command  | Wet season | 2nd rice   | Rice  | Rice      | Rice        |
| Canar | village      | length | area     | rice       | crop       | crop1 | crop 2    | crop 3      |
|       |              | (m)    | (ha)     | (ha)       | (ha)       | (ha)  | (ha)      | (ha)        |
| SC1   | Thnaot Chros | 1.02   | 57       | 57         | ≈ 2 – 3    | 57    | 57        | ≤ 57        |
|       |              |        |          |            | pumping    | -     |           |             |
|       |              |        |          |            | from       |       |           |             |
|       |              |        |          |            | ground-    |       |           |             |
|       |              |        |          |            | water or   |       |           |             |
|       |              |        |          |            | ponds      |       |           |             |
| SC2   | Boeung Snao  | 3.14   | 179      | 179        | ≈ 18       | 179   | 179       | ≤ 179       |
|       | / Takork     |        |          |            | pumping    |       |           |             |
|       |              |        |          |            | from MC10  |       |           |             |
| SC3   | Peany        | 0.93   | 69       | 69         | ≈ 20       | 69    | 69        | <u>≤</u> 69 |
|       |              |        |          |            | pumping    |       |           |             |
|       |              |        |          |            | from MC10  |       |           |             |
|       |              |        |          |            | & existing |       |           |             |
|       |              |        |          |            | poor       |       |           |             |
|       |              |        |          |            | quality    |       |           |             |
|       |              |        |          |            | SC3        |       |           |             |
| Total |              | 5.09   | 305      | 305        | ≈ 40       | 305   | 305       | ≤ 305       |

# Table 5: Lvea subproject proposed canals, command areas and present and proposed cropping

31. The field distribution system (tertiary and quaternary canals, and the field bunds) are the responsibility of the farmers. Farmers will pump the water from the secondary canals to their fields using small pumps.

VI. TYPICAL DRAWINGS

32. Drawings showing the layout of Lvea Subproject, typical canal cross sections and a typical pipe culvert are shown in Figures 1 to 3 below.

VII. BILL OF QUANTITIES

33. Table 6 shows the Bill of Quantities for the proposed civil works.

34. During the PPTA Aruna Technology Ltd. prepared detailed designs and costs for the subproject. Drawings and the BOQ are from their report.

#### Rate Total No. **Description of works** Unit Quantity (USD) (USD) 1.0 Mobilization, site preparation and site clearing 1.1 Staff mobilization and site preparation LS 1.00 120.00 120 1.2 Demolish old Pol Pot era structures, fence, etc. LS 12.00 500.00 6,000 1.3 Site clearing after completed work m² 143,600.00 0.02 2,621 Subtotal 1 8,741 2.0 Earthwork 2.1 Excavation m³ 46,594.00 1.00 46,594 2.2 Backfill with 95% DD compaction m³ 45,600.00 1.50 68,400 Subtotal 2 114,994 3.0 Crossing structures 3.1 Concrete m³ 108.50 135.00 14,648 3.2 Rebar 11.94 800.00 9,550 ton 3.3 Lean concrete 50mm thick m³ 24.18 75.00 1,814 3.4 Stone masonary 250mm thick 239.99 30.00 7,200 m³ 3.5 RC pipe - 800mm diam. 33.80 30.00 1,014 m Subtotal 3 34,225 4.0 Head regulator 4.1 Concrete m³ 20.45 135.00 2,761 4.2 Rebar ton 3.68 800.00 2,944 4.3 Lean concrete 50mm thick 75.00 266 m³ 3.55 4.4 Stone Masonary 250mm thick 24.80 30.00 744 m³ 4.5 RC pipe - 800mm diam. 6.40 30.00 192 m 4.0 Steel Gate 1.00 300.00 300 no. Subtotal 4 7,207 5.0 PVC pipe outlets 5.1 PVC Pipe - 200mm diam. 309.00 7.50 2,318 m Subtotal 5 2,318 6.0 Removal of vegetation 6.1 Palm, coconut, mango tree, etc no. 250 10.00 2,500 6.2 Bushes 150 5.00 750 no. Subtotal 6 3,250 Grand Total 170,734 Contingencies 5% 179,271

Total including 10% VAT 197,198

Table 6: Bill of Quantities



Figure 1: Layout of Lvea Subproject



Figure 3: Typical pipe culvert

SECTION A-A SCALE 1:50 TYPICAL I CELL PIPE CULVERT ON SC2 AND SC3



# ANNEX 2: PRESENT AGRICULTURE AND AGRICULTURAL DEVELOPMENT PLAN

# A. Current Agriculture Profile

# 1. Demographics and Land Use

1. The strategy for Royal Government of Cambodia for the agriculture sector is to maintain and accelerate the pace of agricultural diversification and intensification with increased productivity per unit of land, improved value-added processing, expanded marketing and sales.

2. Lvea Commune has 11 villages.<sup>1</sup> The Lvea Irrigation Subproject will rehabilitate irrigation canals to Thnaot Chros, Boeung Snao/Takork and Peany villages. This Agriculture Plan is confined to the villages affected by the irrigation plan.

3. The Commune has a total population of 8,833 comprising 1,910 households. This represents a 3.1% increase in the population since 2010. The 2010 Commune census indicates that over 50% of the population are under the age of 17 and that approximately 300 households are female headed. Households fall into four income groups: better off households, 359, medium income households 812, IDP2 households 294 and IDP1 households 245.

4. Rice cultivation remains the most important source of household income for high and middle income groups however across all income groups approximately 30% of households receive off-farm income from family members working for the government or the private sector. In the case of the latter most are working in garment factories.

5. Buffaloes are still used to prepare land however there is an increasing trend towards mechanization and the commune has over 100 power tillers and 40 small-scale rice mills.<sup>2</sup>

# 2. Access and Infrastructure

6. Lvea commune is located along highway 1 and is approximately 11 kilometers from Prah Sdak district center and 50 kms from Prey Veng provincial center. Some internal roads are subject to flooding cutting off access to agriculture land. The majority of houses have electricity.

# 3. Land Use

7. The total land area of the commune is 2,133 ha, of which 2,101 ha are cultivated to paddy rice. Of the cultivated rice area 1,400 ha are cultivated as wet season rice meaning that it involves both irrigated and rain fed rice. The remaining 650 ha are cultivated as dry season rice meaning that they are planted at the end of the wet season in non-irrigated land using residual moisture for germination and growth.

8. The irrigated land is divided into four zones.

9. Zone 1: Soil type: 95% prateah lang (acrisols – Food and Agriculture Organisation (FAO) classification); 5% prey khmer (dystric fluvisols, FAO classification). Use: suitable for wet season lowland rice cultivation

<sup>&</sup>lt;sup>1</sup> Samraong, Tnaot Chroh, Pea Ny, Thum. Boeng Snao, Lvea, Svay Kdieh, Prey Kduoch, Kampong Thnai, Ta Kouk, Prum Khsach.

<sup>&</sup>lt;sup>2</sup> Figures are extrapolated from the 2010 Commune Census.

# 10. Zone 2: Similar to zone 1

11. Zone 3: Soil type: 80% bakan soil (luvisols FAO classification) and 20% prateah lang. Use: suitable for rice production in both wet and dry seasons

12. Zone 4: Soil type: bakan 60% and prateah lang 40%. Use: suitable for both wet and dry and can produce three rice crops/year.

# 4. Crops

# a. Rice

13. Prior to 2007 farmers only produced local rice varieties, neang nou and banla pdoa. The average yield was 1.5 tons / ha. After 2007 there was a shift towards ir66, vn 504 and senpidao varieties that can yield over 4 tons / ha. And have shorter growth cycles. Other varieties grown include: phka rumduol, reng chey, banla pdai, smer and kror sang teap.

14. Ir 66 and vn 504 varieties are produced during the dry season and are mainly for sale whereas the wet season varieties are mainly for home consumption. Long cycle dry season varieties are planted in October utilizing residual soil moisture for germination and early growth. Harvesting takes place mid-march.

15. The average production costs are approximately 500 / ha. of which seed and fertilizer make up almost 70% of the total costs. Sowing is usually done by broadcasting and farmers use up to 300 kg / ha.<sup>3</sup> due largely to the belief that high plant densities are needed for weed suppression. Saving seed for a second year reduces the average annual cost. The average selling price for rice for the 2016 / 2017 season was R 650 – R 700 / kg. Producers have produced local varieties under contract however this was discontinued when the buyer failed to purchase grain.

# b. Other Crops

16. Bananas are produced year round for domestic consumption. A small volume of fruit is produced on homeland. Jackfruit are produced and harvested from June – October while mangoes are harvested from March to early May. Palm trees are tapped for sugar year round. Vegetables are produced on a small scale for both home consumption and for sale.

# 5. Livestock

17. Cows and buffalo are grazed on paddy land during the dry season. There are approximately 3,000 head of cattle and buffalo. The Commune Census surveys (2007 & 2014) show that the number of households raising livestock has declined with cows and chickens showing a 20% reduction in the number of households while pigs and ducks recorded a 10% decline.

<sup>&</sup>lt;sup>3</sup> Farmers pay \$25/40 kg for VN 504

| Туре             | % h/h before 2007 | % h/h 2014 |
|------------------|-------------------|------------|
| cows & buffaloes | 80                | 60         |
| pigs             | 60                | 50         |
| chickens         | 100               | 80         |
| ducks            | 30                | 20         |

 Table 1: Percentage of Households Raising Livestock.

Source: Commune Surveys, 2010, 2014

#### 6. Other Income Generating Activities

18. Commercial fish farming was introduced by CEDAC in 2014 and a savings group was formed. In 2016 approximately 15% of households<sup>4</sup> are engaged in pond fish farming. A variety of species are produced however recently there has been interest in cat fish. The fingerlings are supplied by Vietnamese traders, who also train farmers in production and harvesting techniques. Feed makes up a large proportion of the production costs. Capture fish stocks are depleted by illegal fishing.

19. A small number of households are engaged in basket weaving using locally produced bamboo. Household income from basket weaving is about \$15 / week.

# 7. Opportunities and Constraints

20. Rice farmers are currently locked in a cycle of low productivity and price taking. Increasing the irrigated area provides an opportunity to increase total production however increasing profitability will involving consideration of other strategies including:

- (i) reducing the cost of inputs through bulk purchasing,
- (ii) reducing seed costs through use of drum seeders
- (iii) use of better quality fertilizer and agrichemicals
- (iv) improving application methods of fertilizer and agrichemicals
- (v) value adding through aggregation and grading to improve uniformity.

21. Livestock sales make up a significant part of household income however productivity is constrained by poor nutrition, disease and animal husbandry. Productivity can be increased through:

- (i) establishing improved ruminant pasture species on uncultivated land
- (ii) training on the benefits of vaccination and drenching programs for endemic diseases and parasites in cows, buffalos, chickens and pigs
- (iii) training and transfer of technology to improve chicken and duck productivity.

22. Commercial vegetable production offers an opportunity for farmers to significantly increase their income however it is currently constrained by lack of irrigation and farmers perceptions and understanding of market opportunities. Up to 30 ha of high value crops could be established during the dry season as an alternative to rice. Zone 1 land currently not used for rice production if farmers are able to purchase small pumps and practice water conservation techniques such as drip irrigation and use of mulch. This area could be further increased through reducing the area under rice but farmers would need to establish and maintain secure market linkages. The use of mobile telephones and of smartphones especially to access technical

<sup>&</sup>lt;sup>4</sup> PPTA field surveys.

information about agricultural production and inputs can also contribute to improved outcomes by allowing for better informed decisions by farmers. The CMAWs and brokers in the 100 smartphone equipped MIGs will all be equipped with Internet enabled tablets and smartphones that will help them access market information that will help them sell their produce at the best prices.

# B. TSSD-AF Activities

23. Improving agriculture productivity will involve a number of inter-related activities that aim to:

- (i) reduce input costs through bulk purchasing and use of IPM
- (ii) increase farm gate prices for rice and other products through value adding activities including aggregation, grading and strengthened market linkages
- (iii) increase yields and productivity through use of irrigation and improved technologies
- (iv) reduce market and climate change related risks through diversifying the farming system and use of climate resilient varieties

# 1. Strategies for Increasing Returns from Rice

24. Dry periods during April / May reduce root formation in early wet season rice plantings. Further extensions of the dry periods into June and July inhibit tillering and reduce plant density and yield. Similarly unseasonal dry periods during October/ November will result in reduced yields of dry season rice grown without irrigation.

25. Upgrading of the Thnaot Chros, Peany and Boeung Snao canals will allow farmers to extend their overall dry season rice producing area by 275 ha and increase average yields from 2.0 - 2.5 tons / ha to 3.5 - 4.0 tons / ha. Based on single cropping only, this will increase total yield over the area by 275 - 400 tons. Further benefits from irrigation both financial and for food security will be derived from diversification of rice cropping patterns that would include double cropping and extending the growing season for both commercial and local varieties.

26. Gross returns from rice are low (table 2) and beyond the immediate benefit resulting from an increase in the area under year round production, future financial gains are likely to accrue from incremental benefits derived from reducing production costs and increasing market prices.

| Dry season rice     | With Project | Without Project |  |  |
|---------------------|--------------|-----------------|--|--|
| Yield (kg/ha)       | 4,000        | 3,500           |  |  |
| Price (R/kg)        | 700          | 750             |  |  |
| Income (R/ha)       | 2,800,000    | 2,625,000       |  |  |
| Costs (R/ha)        | 2,301,563    | 2,204,000       |  |  |
| Gross margin (R/ha) | 498,438      | 421,000         |  |  |
|                     |              |                 |  |  |
| Wet season rice     | With Project | Without Project |  |  |
| Yield (tons/ha)     | 2,400        | 2,000           |  |  |

Table 2: Gross returns from rice

| Price (R/kg)        | 780       | 800       |
|---------------------|-----------|-----------|
| Income (R/ha)       | 1,872,000 | 1,600,000 |
| Costs (R/ha)        | 1,640,333 | 1,486,657 |
| Gross margin (R/ha) | 231,667   | 114,622   |

| Source: | PPTA | Economic | Analysis |
|---------|------|----------|----------|
|---------|------|----------|----------|

27. A rice MIG comprising up to 30 members will be established to negotiate higher rice prices through value adding activities including aggregation that will reduce the time that buyers have to spend travelling to individual farms. Experience elsewhere indicates that buyers are prepared to pay a premium for this. The MIG will also promote grading to improve quality depending on market requirements. The MIG will undertake trials on climate resilient and other varieties that have an identified market demand. Trials may also include organic production techniques to assess yield and market demand.

28. A Service Team comprised of women will be established and trained in rice production techniques. The Service Team will provide contract labor for households with access to land but where labor is a constraint. The Service Team will aim to increase yields through using certified seed with high germination rates. The Service Team will only use fertilizers and agrichemicals from trusted sources and reduce the cost of seed and fertilizer through following MAFF recommendations for application rates and placement.

#### 2. Strategies for Diversification

29. The production of chickens and vegetables provides an opportunity to diversify and increase income. A cost / benefit analysis of commercial chicken and vegetable production based on national averages indicates that both products have the potential for high returns (table 3). A maximum of 30 commercial vegetable producers and 50 commercial broiler producers will be established.

| Chicken             | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (kg)          | 1.5          | 0.5             |
| Price (R/kg)        | 14,000       | 17,000          |
| Income (R/ha)       | 21,000       | 8,500           |
| Costs (R/ha)        | 9,900        | 5,500           |
| Gross margin (R/ha) | 11,100       | 3,000           |

# Table 3: Gross Margins

| Watermelon          | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 23,000       | 18,000          |
| Price (R/kg)        | 6,300        | 8,000           |
| Income (R/ha)       | 14,490,000   | 144,000,000     |
| Costs (R/ha)        | 2,995,000    | 2,268,000       |
| Gross margin (R/ha) | 141,904,500  | 141,732,000     |

| Yard long beans     | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 22,000       | 18,000          |
| Price (R/kg)        | 1,7000       | 2,000           |
| Income (R/ha)       | 37,400,000   | 30,000,000      |
| Costs (R/ha)        | 23,323,333   | 22,178,000      |
| Gross margin (R/ha) | 14,076,667   | 13,822,200      |

| Cucumber            | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 21,500       | 17,000          |
| Price (R/kg)        | 1,300        | 1,500           |
| Income (R/ha)       | 27,950,000   | 22,500,000      |
| Costs (R/ha)        | 13,434,176   | 11,163,470      |
| Gross margin (R/ha) | 14,515,824   | 14,336,529      |

| Morning Glory       | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 20,000       | 18,000          |
| Price (R/kg)        | 900          | 950             |
| Income (R/ha)       | 18,000,000   | 17,100,000      |
| Costs (R/ha)        | 8,510,000    | 8,278,000       |
| Gross margin (R/ha) | 9,490,000    | 8,822,000       |

| Bitter Gourd        | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 18,000       | 15,000          |
| Price (R/kg)        | 2,300        | 2,500           |
| Income (R/ha)       | 41,400,000   | 37,500,000      |
| Costs (R/ha)        | 11,120,171   | 7,949,198       |
| Gross margin (R/ha) | 30,420,829   | 29,686,285      |

| Sweet melon         | With Project | Without Project |
|---------------------|--------------|-----------------|
| Yield (tons/ha)     | 22,500       | 18,700          |
| Price (R/kg)        | 2,500        | 3,000           |
| Income (R/ha)       | 56,250,000   | 56,100,000      |
| Costs (R/ha)        | 51,607,852   | 52,020,857      |
| Gross margin (R/ha) | 4,642,143    | 4,079,143       |

Source: PPTA Economic Analysis.

30. A Specialized Service Provider (SSP 8) will be contracted to promote and provide support

for establishing commercial chicken production. Extension activities will involve chicken training schools that will enable farmers to gain hands on experience in raising producing chicks and broiler chickens. The chick raising unit will not be established until there are sufficient broiler units to provide a secure market.

31. The same SSP 8 will also promote and support commercial vegetable production. Support will be provided in the form of vegetable training schools that will require farmers to perform and demonstrate competence in the tasks needed to prepare land, raise and transplant seedlings, build support structures, irrigate, apply fertilizer, identify and control important pests and disease and harvesting.

# 3. Livelihood Improvement Groups

32. A special service provider for Livelihood Improvement Group (LIG) support (SSP7) will establish Livelihood Improvement Groups (LIGs) of up to 25 members each based on the establishment of a savings fund. Households will be able to draw down funds totaling \$240 in three separate tranches to assist in the establishment and further development of livelihood activities including rice, vegetable and chicken production.

# 4. LIG Support

33. A **Commune Mobile Access Worker** (CMAW) will be appointed by the Commune Council to facilitate communication between LIG members and value chain stakeholders. The CMAWs will also work with SSP8 and DAO to coordinate training for farmers. The CMAWs will work with the team of individual consultants for ICT support to collect and share data and information to better understand the technical and marketing needs and circumstances of farmers and to transfer knowledge to and facilitate sharing between farmers. CMAWs will be provided with a tablet to demonstrate videos of best practices and other digital content produced by the ICT consultants.

34. **Value Chain Working Groups** (VCWGs) will be formed That the District level with membership comprising representatives from LIGs, input suppliers, traders and the rice MIGs. The Value Chain Working Groups will (i) develop a relationship of trust and confidence between producers, buyers and suppliers, (ii) facilitate the dialogue between all market players, (iii) coordinate extension and business support between all market players to match the market offer with the demand (product, quality, timing, etc.), (iv) enable best price deals between market players, (v) expedite transactions between market players. Over time the VCWGs will transition into Market Improvement Groups (MIGs).

35. **Market Improvement Groups** (MIGs) will be formed in year 3 based on an evaluation of LIG performance, marketing issues, the level of interest and social cohesion. MIGs will be informal groups of LIG and non-LIG farmers producing rice, chickens, vegetables and perhaps fish / prawn farming that have a common interest in improving marketing opportunities through value adding activities such as group buying and aggregation.

36. **VAHWs.** SSP 8 will work in cooperation with the Provincial Office of Animal Health and Production (OAHP) to support the livestock improvement program by the delivery of capacity building training and mentoring for VAHWs, the provision of veterinary kits and the strengthening of the network of VAHW Associations.

# ANNEX 3:SOCIAL IMPACT ASSESSMENT

# I. INTRODUCTION

1. This social impact assessment (SIA) report is for the Tonle Sap Poverty Reduction and Smallholder Development-Additional Financing (TSSD-AF) Project. TSSD-AF will rehabilitate up to 450 kilometers (km) of disaster risk reduction (DRR) roads in commune areas prone to floods. Infrastructure designs are expected to incorporate the latest recommendations from the climate risk and vulnerability assessment on climate change resilience and to include modifications to reduce disaster risk in the concerned communes. In addition, resettlement issues and environmental concerns must be addressed and incorporated into the TSSD-AF project's and its subprojects' plans.

2. This assessment is part of the feasibility studies prepared for the two proposed subprojects: the Rural Road Improvement Subproject, which has been proposed by the Batheay and Chbar Ampov commune councils in Kampong Cham province and the Small Scale Irrigation Rehabilitation Subproject, which has been proposed by the Lvea commune council in Prey Veng province. Funding for these two subprojects is to be allocated under the TSSD-AF output 1: Rural productive infrastructure and livelihood improved with capacity in disaster risk management enhanced. The social impact assessment was conducted from early March to early April, 2017 and this report summarizes the assessment results, and provides basic information regarding the current socio-economic conditions and livelihood development activities of the two proposed subprojects. It also presents information on the potential positive and negative social impacts which could result from the proposed subprojects, and provides recommendations for mitigation measures.

# A. TSSD-AF Project Background Information

3. The Tonle Sap Poverty Reduction and Smallholder Development (TSSD) project was approved by ADB on 8 December, 2009 and commenced on 31 March 2010 with a loan of \$3.41 million and a grant of \$27.30 million. TSSD's completion date has been scheduled for 31 August, 2017 and the project's closing date is on 28 February 2018. TSSD has been co-financed by the International Fund for Agricultural Development (IFAD) with a loan of \$6.69 million and a grant of \$6.69 million, and the Government of Finland with a grant of \$5.75 million<sup>1</sup> which were released on 15 February 2010 and 3 December 2010, respectively. The Ministry of Agriculture, Forestry and Fisheries (MAFF), and the National Committee for Sub-National Democratic Development Secretariat (NCDDS) are the executing agencies. The Council for Agricultural and Rural Development is the chair of the project's steering committee which is to provide policy advice and strategic guidance to the project.

4. The TSSD-AF has the following two implementing agencies: (i) NCDDS is responsible for output 1, and (ii) MAFF is responsible for output 2. Both agencies will be jointly responsible for output 3.

- 5. The TSSD-AF has three main outputs which include:
  - (i) Output 1: Rural productive infrastructure and livelihood improved with capacity in disaster risk management enhanced. The additional financing will focus on

<sup>&</sup>lt;sup>1</sup> On 24 February 2014, this amount was reduced to \$1.595 million due to the modification of ICT component of TSSD, and the completion date was revised from 15 March, 2014 to 31 December, 2014.

climate- and disaster-resilient roads and irrigation schemes. It will rehabilitate an additional 450 kilometers of roads and upgrade irrigation infrastructure for an additional 6,000 hectares of land to allow for at least two crops per year.2 Infrastructure subprojects will also be registered in the national asset inventory to ensure O&M beyond the additional financing implementation period. The existing 1,241 LIGs will be strengthened and an additional 750 LIGs will be established. An LIG association will also be established with financial contribution from LIG members themselves to improve the group sustainability. Further, DRM in target communes will be strengthened through training on identifying, planning, and implementing disaster risk reduction (DRR) measures, including incorporating DRR considerations in infrastructure subprojects.

- (ii) Output 2: Enabling environment for increased agricultural productivity, diversification, and climate resilience created. Training on climate-smart agriculture practices will be provided through 200 paddy selling groups, LIGs and market improvement groups. Production of four climate-resilient rice seed varieties will be promoted upon confirmation of market demand. Beyond production, the additional financing will also improve value addition for rice, vegetables, and chicken value chains through (i) establishing multistakeholder value chain platforms, (ii) establishing 364 market improvement groups, (iii) strengthening 103 existing small-scale agribusinesses, and (iv) establishing at least a further 97 agribusinesses.
- (iii) Output 3: Project management strengthened. The existing executing agencies will continue to manage the project. Support in project management will continue for project staff at national, provincial, district, and commune levels. Consulting services and special service providers' support will be extended or recruited as required.

#### B. Location and Description of the Proposed Subprojects

6. A long list of potential subprojects was proposed which were individually assessed during the course of the project's preparation. All proposed subprojects were filtered through the selection criteria for finalizing the preferred projects with these two short-listed:

- (i) The proposal for the road improvement subproject was submitted by the Chbar Ampov commune. They proposed to improve the 3 km road which runs through Chbar Ampov village and then connects Batheay commune to Highway No. 6. As the middle section of road floods frequently to a depth of 2m or more the cost of rehabilitating the entire road would be high and beyond the scope of the TSSD-AF. TSSD-AF will therefore rehabilitate a 1.37 km section of the road through Chbar Ampov village. In a southerly direction, the proposed road joins a recently improved road which, through a longer route, links to Highway No. 6 through Chealea commune (see map below). This is the route villagers use when the road through Batheay commune to Highway No. 6 is flooded.
- (ii) The irrigation subproject proposal was submitted by Lvea commune council (CC), involving the rehabilitation of three secondary canals to provide irrigation for rice and other crops. It should be noted that surveys were undertaken prior to the

<sup>&</sup>lt;sup>2</sup> Infrastructure in the additional financing involves a higher level of improvement in climate resilience than in the original project and therefore requires a much higher unit cost.

reduction in scope and therefore social and agricultural data covers the full road length and all proposed canal catchments from the original proposal.



Figure 1: Location of the Two Proposed Subprojects

# 1. Rural Road Improvement Subproject

7. TSSD-AF will rehabilitate a 1.37 km section of the road running through Chbar Ampov village. In a southerly direction, the proposed road joins a recently improved road which eventually links to Highway No. 6 after passing through Chealea commune. This is the route the villagers use when the road through Batheay commune to Highway No. 6 is flooded.

8. The rehabilitation of the road is expected to benefit about 5,393 households. Firstly the residents of Chbar Ampov will gain direct benefits by being able to quickly access the National Highway, and also they have convenient market access to sell rice that has been produced from about 1,000 ha of paddy fields.

Source: NIRVn - Map created using QGIS, CC BY-SA 3.0, https://en.wikipedia.org/w/index.php?curid=43121523



Figure 2: Location of the Proposed Rural Road Improvement Subproject-Bathaey-Chbar Ampov Communes

# 2. Irrigation Rehabilitation Subproject

The irrigation rehabilitation subproject is located in Lvea commune, Preah Sdach district, 9. in Preh Veng province. The irrigation canals that have been proposed for renovation are currently dry and therefore ineffective. Once they have been renovated these irrigation canals are expected to provide enough water for two seasonal crops per year on 350 hectares of land in the three villages of Beoung Snao, Takork and Peany. A total of 6,000 hectares will benfit under the overall TSSD-AF target. The total length of the proposed irrigation canals is just over 5 kilometers. and these are divided into three separate sections. The first section is about 1,020 meters (m) in length which is known as the Thnoat Chros village canal. The second section is about 3.104 m and this runs between the villages of Beoung Snao and Takork, and the third section is about 1.040 m known as the Peany village canal. However, as the canal currently does not have water running through it, some of the poor farmers have been using the current proposed irrigation section about 600 m long for rain-fed paddy fields. If this section of the canal is rehabilitated these farmers will lose their plots for rice farming; therefore the project will avoid this section and only cover a distance of about 400 m so that the rehabilitated section will not cover the part where the farmers are currently using the land.

10. All of these proposed irrigation sections are to connect with the main canal that has been constructed through donations by the Chinese government and its operation is now the responsibility of the Provincial Department of Water Resources and Agriculture Management (PDOWRAM). The water for these proposed canals will therefore be diverted from the main canal so that the farmers will be able to cultivate rice for two seasons as well as other non-rice crops. These proposed canals will be supplied with water that is being pumped from the Kampong Trabek River into the main canal. During the dry season, the water level in the river becomes

very low from February to May, and so these renovated canals can also be used to store water during the dry season.



Figure 3: Location of the Proposed Irrigation Rehabilitation Sections (red)

11. Currently most of the farmers in this area heavily rely on rain to water their fields, and some of them who are able to afford the use of portable diesel pumps (either owned or rented) pump water from whichever source is available in the vicinity in order to water their rain-fed rice fields. In general rice yields can be described as ranging from moderate to good, with farmers harvesting between 1.5 and 2 tons/ha, with only a few farms harvesting 2.5 tons/ha. Post- harvest drying and processing practices are considered to be potentially wasteful resulting in significant losses.

# II. SOCIAL ASSESSMENT DATA AND INFORMATION

# A. Social and Livelihood Information

# 1. Assessment Methodology

12. The community/village consultations and interviews with individual households and affected persons' were conducted in 6 villages, while the household survey covered 200 houses in 20 villages, which were divided into 10 villages per subproject. The social information has mostly been gathered from primary data from the following sources: (i) interviews with national government staff at the central level, as well as two provincial officials and the staff of district offices; (ii) coordinated interviews with commune council leaders and village representatives; (iii)

community/village consultations in six villages; (iv) interviews with individual potentially affected persons and households; and (v) a survey of 200 individual households.

13. The assessment engaged two teams. The first team was the project preparation technical assistance (PPTA) social team which was responsible for conducting the initial social safeguards screening according to ADB safeguards policy requirements. They also conducted community consultations, so as to assess broad community support, the current socio-economic and livelihoods status as well as to verify the community's desire for development priorities. The second team was the survey consultancy firm, which was selected to conduct the household survey and to collect detailed socio-economic information of the two proposed subproject sites. The survey consultancy firm focused on the collection of statistical data and recorded an inventory of the potential asset loss of the households who are likely to be impacted by the proposed two subprojects. Community/village consultations and interviews with individual households and affected persons took place in 6 villages, while the household survey covered 200 houses in 20 villages.

| Province     | District         | Subproject    | Commune | No. of<br>Surveyed<br>Villages | No. of<br>Surveyed<br>Households | No. of<br>Affected<br>Households |
|--------------|------------------|---------------|---------|--------------------------------|----------------------------------|----------------------------------|
| Kampong Cham | Batheay          | Road          | Batheay | 6                              | 73                               | 36                               |
| -            |                  |               | Chbar   | 4                              | 27                               | 14                               |
|              |                  |               | Ampov   |                                |                                  |                                  |
|              | Sub-total for ro | ad subproject |         | 10                             | 100                              | 50                               |
| Prey Veng    | Preah Sdach      | Irrigation    | Lvea    | 10                             | 100                              | 40                               |
|              | TOTAL            |               |         | 20                             | 200                              | 90                               |

Table 1: Scope of the Targeted Households Survey Areas

# 2. Summary of Potential Affected Households and Impacts

A detailed household survey revealed that there are a total of 64 houses from the Lvea 14. commune which are likely to be affected by the rehabilitation of the irrigation canals. An estimation of the area of impacted land is 6,433 square meters. Out of this number there are 31 houses which are likely to lose a small strip of land and 43 houses which will lose palm trees and coconut trees which they have planted along the proposed canals (note that some of these affected houses have affected trees on the affected land). Additionally, there are two houses belonging to two different families which are likely to be impacted by the expansion of the width of the irrigation canals. These two families/households were visited and interviewed by the PPTA social team. The team inquired whether the canal expansion and the potential impacts on their house will cause a severe setback and disturbance for their families. One family answered that the impacts will not have any effect on them as they have already planned to move and live in another village. It is closer to town and there they plan to run a small family business – a rice mill and a shop. This family is currently in the process of preparing to relocate to the new village and a house is being built there. The survey team then went to visit the new village in order to validate this information and found that the construction of the house is nearly completed. The family members also informed the team that currently there is no one living in the potentially affected house.

15. The second potentially impacted house was also visited by the PPTA survey team to verify the scope of impact and their willingness to support the subproject. This family informed the team that they are willing to relocate their house because they wish to gain the benefits from the improved irrigation canal. They have been waiting for the moment that they have sufficient water for their paddy field, and that in fact they built the house on the land where the government had

already planned to expand the canals (about 20 years ago). They stated that they are willing to move to make way for a better irrigation system as soon as the project has been confirmed and the subproject will begin. They acknowledged that the subproject will cause a temporary disturbance and will inconvenience them during the construction period due to the need to shift the house further. They requested that when the time comes, they would like the commune council and the villagers to assist with the physical relocation/movement of the house.

| Commune | Proposed | Village      | Total | No. | No. of affected land |         |     | and    | No. | No. | No. |    |    |
|---------|----------|--------------|-------|-----|----------------------|---------|-----|--------|-----|-----|-----|----|----|
|         | Improved |              | HH    | AHs | AL                   |         | RL  |        | IS  | IT  | SDF |    |    |
|         | Section  |              |       |     | No.                  | m²      | No. | m²     |     |     |     |    |    |
| Lvea    | 1.02 km  | Thnoat Chros | 208   | 27  | 24                   | 4232.66 | 5   | 653.4  | 0   | 6   |     |    |    |
|         | 3,14 km  | Beoung       | 207   | 17  |                      | 0       |     | 0      |     | 0   | 0   | 17 | 17 |
|         |          | Takork       | 202   | 20  | 2                    | 121     | 4   | 1426.7 | 2   | 20  | 20  |    |    |
|         | 0.93 km  | Peany        | 172   | 0   |                      | -       |     | -      | -   | -   | 0   |    |    |
| Total   | 5.9 km   | Total        | 1203  | 64  | 26                   | 4353.66 | 9   | 2080.1 | 2   | 43  | 37  |    |    |

Table 2: Proposed Irrigation Canals: Number of Affected Households

AHS = affected households; AL = agriculture land; HH = households; IS = impacted structure; IT = impacted trees; km = kilometer; m<sup>2</sup> = square meter; RL = residential land; SDF = signed donation forms.

16. For the proposed road subproject, a total of 90 households are likely to be affected by the proposed section of rehabilitated road. The affected assets consist of mostly a small strip of land along the road and some plots of land have a fence and life-fence trees, as well as fruit frees. During the assessment, the PPTA team visited a few houses, which will potentially be affected by the activities involved in the improvement of the road. All of the visited houses informed the survey team that they are quite willing to donate the impacted land because they want to have a better road and be able to travel during the rainy season. Some of the visited houses proposed that during the construction stage, they would like the road construction company to excavate earth from their field in order to fill up the road. In doing so they would not only gain the benefits of having a fishpond on their land but also would have a better/higher road which is not be subject to flooding.

| Commune     | Village     | No.   | No. | FHHs | No. of affected land |         |     |         | No. SDF |
|-------------|-------------|-------|-----|------|----------------------|---------|-----|---------|---------|
|             |             | HH    | AHs |      |                      | AL      |     | RL      |         |
|             |             |       |     |      | No.                  | m²      | No. | m²      |         |
| Batheay     | Srah Pring  | 251   | 39  | 1    | 9                    | 3289.58 | 16  | 715.75  | 34      |
|             | Svay Pok    | 543   | 0   | -    | -                    | -       | -   | -       | 0       |
| Chbar Ampov | Chbar Ampov | 405   | 51  | 4    | 11                   | 2151.2  | 34  | 1157.94 | 40      |
|             | Total       | 1,199 | 90  | 5    | 20                   | 5440.78 | 50  | 1873.69 | 74      |

Table 3: Proposed Road: Number of Affected Households in the Surveyed Villages

AHS = affected households; AL = agriculture land; HH = households; m<sup>2</sup> = square meter; RL = residential land; SDF = signed donation forms.

17. These impacts suggested that the subproject will need to conduct a due diligence in order to verify the impact and confirm the willingness of the affected household to donate the impacted assets. Additionally, a Donation Confirmation Report (DCR) needs to be prepared for these two subprojects.

# 3. Community Support

18. During the social impact assessment conducted in Preh Veng and Kampong Cham provinces from 7 to 13 March 2017 all the consulted communities and villages expressed their desire to have better road conditions and functioning irrigation systems. They reported that they are in support of the commune councils' decision to rehabilitate the existing infrastructure of the

village. These proposed road and irrigation improvements have been submitted several times by commune council leaders for the government's consideration. However they have been unsuccessful because of the lack available of resources of the commune development fund which has been unable to cover all of the necessary construction costs. According the consulted villagers in the Lvea commune, the proposed irrigation canals have not been in use for several decades due to a lack of water. In the last few years the Chinese government assisted in the improvement of one of the main canals and as a result the villagers who have had access to this water have been able to practice intercropping and cultivate crops in two seasons, which has improved their living conditions dramatically. The consulted villagers suggested that the irrigation canal should have a width of between two to four meters. If the subproject acquires a larger area of land than this, there are some houses (three), that will lose more than 5% of their land due to the proposed irrigation canal and that they are quite unlikely to obtain replacement land elsewhere. This message was delivered to the project's detailed design engineering team and it was confirmed that the rehabilitation of the irrigation canals will be within the proposed width.

19. As for the road subproject, the consulted villagers in Batheay and Chbar Ampov communes informed the survey team that the proposed road has been developed by the community through the commune development fund. Some parts of the road have been well maintained by the community, but there are some parts of the road which are subject to flooding each rainy season making it difficult for the community to constantly repair and maintain the road. All of the consulted commune leaders, communities and villagers expressed their full support for the project, and they also informed PPTA team that they are willing to donate the affected land, including the fences and fruit trees which are on these pieces of land.

20. All of the consulted persons met during the community consultations expressed their support for the two subprojects, and the detailed household survey revealed that a total of 94.5% support the subprojects. One household per subproject or 1% of the total surveyed households stated that they do not support the subproject while 4.5% replied that they did not know.

| Subproject | Do you support this Subproject? | Sex of the head of the household |        |    |        |       |        |  |  |  |
|------------|---------------------------------|----------------------------------|--------|----|--------|-------|--------|--|--|--|
|            |                                 | I                                | Male   | F  | emale  | Total |        |  |  |  |
|            |                                 | Ν                                | %      | n  | %      | n     | %      |  |  |  |
| Road       | No                              | 0                                | 0.0%   | 1  | 2.6%   | 1     | 1.0%   |  |  |  |
|            | Yes                             | 59                               | 96.7%  | 36 | 92.3%  | 95    | 95.0%  |  |  |  |
|            | Don't know                      | 2                                | 3.3%   | 2  | 5.1%   | 4     | 4.0%   |  |  |  |
|            | Sub-total                       | 61                               | 100.0% | 39 | 100.0% | 100   | 100.0% |  |  |  |
| Irrigation | No                              | 1                                | 2.1%   | 0  | 0.0%   | 1     | 1.0%   |  |  |  |
|            | Yes                             | 44                               | 93.6%  | 50 | 94.3%  | 94    | 94.0%  |  |  |  |
|            | Don't know                      | 2                                | 4.3%   | 3  | 5.7%   | 5     | 5.0%   |  |  |  |
|            | Sub-total                       | 47                               | 100.0% | 53 | 100.0% | 100   | 100.0% |  |  |  |
| Total      | No                              | 1                                | 0.9%   | 1  | 1.1%   | 2     | 1.0%   |  |  |  |
|            | Yes                             | 103                              | 95.4%  | 86 | 93.5%  | 189   | 94.5%  |  |  |  |
|            | Don't know                      | 4                                | 3.7%   | 5  | 5.4%   | 9     | 4.5%   |  |  |  |
|            | TOTAL                           | 108                              | 100.0% | 92 | 100.0% | 200   | 100.0% |  |  |  |

# 4. Population, Ethnicity and Household Size

21. There are more than 30,000 people (7,183 households) living in the targeted areas of the subprojects who will benefit from the improved irrigation canals and rural access road, according to the social survey conducted in early March 2017. Out of this number there were a total of 2,411 households in the twenty surveyed villages (see Table 2 and 3). It could be suggested that the total direct beneficiaries of the proposed road subproject number 5,393 households and with the

proposed irrigation subproject it is 320 households. These 320 households are either located along the proposed canals or have their land located next to or near by the canals, and so are likely to benefit from having a sufficient water supply for their fields. The surveyed villages do not have indigenous peoples or ethnic minorities living in them and therefore, an indigenous plan was not prepared for these two subprojects. The average household size is 7.5 members with the majority of households being made up of about 4 to 5 members. The number of female family members is slightly higher than male family members.

# 5. Education and Healthcare Situation

22. In terms of access, both of the proposed subprojects share similar characteristics regarding access to education and healthcare systems. Overall the distance from villages to primary education is around 1 kilometer (km), to secondary education it is about 2 to 3 km and to high school it is about 4 to 5 km. A similar scale of distance can be applied to healthcare as a drug store or pharmacy is available within about 1 km, with a health center it is about 2 to 3 km and with a hospital it is about 4 to 5 km. Having said that, one village is located near the National Highway 6, at the starting point of the proposed road improvement and therefore this village is located within 1 km from the local hospital.

23. It is interesting to note that the household survey revealed that the education level of the head of the households of the targeted villages is relative low, especially amongst women. The percentage of females who have not attended school from the surveyed villages of the road subproject is 64.1% and for the irrigation subproject the figure is 36%. Meanwhile the percentage of the male household heads from these villages who have not attended school is 14.8% and 4.3% for road and irrigation subprojects respectively. The majority of the heads of households, living in the targeted villages from both proposed subproject areas, have only attained primary and lower secondary education and there are only a handful of female heads of households who have attended college and university (2.6% of female and 4% female from road and irrigation subprojects respectively).

24. Regarding community health, the surveyed households reported that most of the health issues are related to the common cold, fever and stomachache (about 24% to 26% of the total survey households), followed by high-blood pressure (18% for the road and 12% for the irrigation subproject) and heart diseases (4% for the road and 6% for the irrigation subproject). On average, a much higher percentage of females reported that they have some kind of health issue. Additionally more than 25% of the females reported that they have someone in their family who has a chronic health issue (see Table 5).

25. The survey data shows that when people face some health issue which is not too serious, they often go to the nearby health center. However, if the health issue is considered to be serious, most of the people go to a public/government hospital. Additionally, the surveyed data revealed that more than 30% of the surveyed households are unable to tend to their healthcare needs due to a lack of money, whilst 6.8%% of the surveyed households reported that they lack a means of transportation. Furthermore 4.6% stated that the health care facilities are too far away and that the physicians are not friendly and therefore are discouraging them to seeking healthcare.

| Subproject | Does someone in the family | 1. Sex of the head of the household |        |    |        |       |        |  |
|------------|----------------------------|-------------------------------------|--------|----|--------|-------|--------|--|
|            | have a chronic illness?    |                                     | Male   |    | emale  | Total |        |  |
|            |                            | n                                   | %      | n  | %      | n     | %      |  |
| Road       | No                         | 51                                  | 83.6%  | 29 | 74.4%  | 80    | 80.0%  |  |
|            | Yes                        | 10                                  | 16.4%  | 10 | 25.6%  | 20    | 20.0%  |  |
|            | Sub-total                  | 61                                  | 100.0% | 39 | 100.0% | 100   | 100.0% |  |
| Irrigation | No                         | 45                                  | 95.7%  | 40 | 75.5%  | 85    | 85.0%  |  |
| -          | Yes                        | 2                                   | 4.3%   | 13 | 24.5%  | 15    | 15.0%  |  |
|            | Sub-total                  | 47                                  | 100.0% | 53 | 100.0% | 100   | 100.0% |  |
| Total      | No                         | 96                                  | 88.9%  | 69 | 75.0%  | 165   | 82.5%  |  |
|            | Yes                        | 12                                  | 11.1%  | 23 | 25.0%  | 35    | 17.5%  |  |
|            | TOTAL                      | 108                                 | 100.0% | 92 | 100.0% | 200   | 100.0% |  |

 Table 5: Households with a family member who has a chronic illness

#### 6. Hygiene and Sanitation Conditions

26. Although the majority of the surveyed households reported that they use toilets, more than 30% reported that they do not have a toilet and these people stated that they use the rice fields and bushes around the village for defecating. Almost all of the toilets are squat toilets and these are mostly located outside of their homes.

| Subproject | Households with Toilets | Sex o | of the head | of the | household | Total |        |  |  |  |  |  |
|------------|-------------------------|-------|-------------|--------|-----------|-------|--------|--|--|--|--|--|
|            |                         |       | Male        |        | Female    | ]     |        |  |  |  |  |  |
|            |                         | n     | %           | n      | %         | n     | %      |  |  |  |  |  |
| Road       | No                      | 23    | 37.7%       | 21     | 53.8%     | 44    | 44.0%  |  |  |  |  |  |
|            | Yes                     | 38    | 62.3%       | 18     | 46.2%     | 56    | 56.0%  |  |  |  |  |  |
|            | Sub-total               | 61    | 100.0%      | 39     | 100.0%    | 100   | 100.0% |  |  |  |  |  |
| Irrigation | No                      | 8     | 17.0%       | 14     | 26.4%     | 22    | 22.0%  |  |  |  |  |  |
|            | Yes                     | 39    | 83.0%       | 39     | 73.6%     | 78    | 78.0%  |  |  |  |  |  |
|            | Sub-total               | 47    | 100.0%      | 53     | 100.0%    | 100   | 100.0% |  |  |  |  |  |
| Total      | No                      | 31    | 28.7%       | 35     | 38.0%     | 66    | 33.0%  |  |  |  |  |  |
|            | Yes                     | 77    | 71.3%       | 57     | 62.0%     | 134   | 67.0%  |  |  |  |  |  |
|            | TOTAL                   | 108   | 100.0%      | 92     | 100.0%    | 200   | 100.0% |  |  |  |  |  |

Table 6: Households with Toilets

# 7. Water Sources and Availability

27. The majority of the survey households from the road subproject reported that they use stored rain water (39.9%) and ground water (38.3%), while most of the households from the irrigation subproject said that they use ground water –from pumping wells and shallow wells (69.4%). Similarly the water they use for agricultural purposes is mostly from rain (17.3%) and ground water (57.3%). Additionally, there are a few families (19%), which have their land located near a lake, pond and stream, and they use electric pumps to get water for their agricultural fields. With the irrigation subproject, the water source will come from the existing main irrigation canal where the water is pumped from the Kampong Trabek River.

# 8. Livelihoods and Income Sources.

28. The social impact assessment found that the targeted communities have mixed livelihood activities but that these are predominately in the agricultural sector as well as the sale of labour for farming activities and in factories. Furthermore others migrate to the other main cities such as Phnom Penh in order to work. The household survey data confirmed that about 57% of the surveyed households currently are involved in agricultural related activities, and out of this number 40% reported that are working directly on their own farms and that their agricultural products are

for both consumption and commercial purposes. About 25% of the surveyed households reported that they are being supported by other members of the family, and so they are relying on remittances from a family member who is working elsewhere either inside or outside of the country. Additionally, about 9% reported that are selling their labor on a local farm.

29. Furthermore, the collected data also shows that more than 70% of the informants said that the agricultural products for sale are collected by market dealers who come to their village to buy these products. Meanwhile more than 24% of the informants said that they sell their products to the local commune markets. Only a small percent (4%) of the informants said that they travel to sell agricultural products outside of their village or the commune markets.

| Subproject | Туре                | Sex o | f the head o | nousehold | Total  |       |        |
|------------|---------------------|-------|--------------|-----------|--------|-------|--------|
|            |                     |       | Male         | F         | emale  |       |        |
|            |                     | n     | %            | n         | %      | n     | %      |
| Road       | No                  | 24    | 39.3%        | 19        | 48.7%  | 43    | 43.0%  |
|            | Yes                 | 37    | 60.7%        | 20        | 51.3%  | 57    | 57.0%  |
|            | Sub-total 61 100.0% |       | 100.0%       | 39        | 100.0% | 100   | 100.0% |
| Irrigation | No                  | 16    | 34.0%        | 27        | 50.9%  | 43    | 43.0%  |
|            | Yes                 | 31    | 66.0%        | 26        | 49.1%  | 57    | 57.0%  |
|            | Sub-total           | 47    | 100.0%       | 53        | 100.0% | 100   | 100.0% |
| Total      | No                  | 40    | 37.0%        | 46        | 50.0%  | 86    | 43.0%  |
|            | Yes 68 63.0%        |       | 46           | 50.0%     | 114    | 57.0% |        |
|            | TOTAL               | 108   | 54.0%        | 92        | 46.0%  | 200   |        |

Table 7: Households Currently Involved in Agricultural Activities

# 9. Poverty and Vulnerability

30. Regarding poverty levels an average of about 55% of the total surveyed informants from both subprojects reported that are poor, according to their own self-evaluation of their household's wealth status. Looking at the poverty data of each subproject, 49% of the respondents from the road subproject reported that they are poor while about 61% of the respondents from the irrigation subproject reported the same. It is interesting to note that the percentage of females who reported that they are poor is much higher than the percentage of males (36.1% of males and 62% of females from the road subproject, compared to 46.8% of males and 73.6% of females from the irrigation subproject).

| Subproject | Туре             | Sex | of the hea | d of the ho | ousehold | Total |        |  |
|------------|------------------|-----|------------|-------------|----------|-------|--------|--|
|            |                  | -   | Male       | Fen         | nale     |       |        |  |
|            |                  | n   | %          | Female      | %        | Total | %      |  |
| Road       | Poor             | 22  | 36.1%      | 27          | 69.2%    | 49    | 49.0%  |  |
|            | Normal / average | 32  | 52.5%      | 12          | 30.8%    | 44    | 44.0%  |  |
|            | Well off         | 7   | 11.5%      | 0           | 0.0%     | 7     | 7.0%   |  |
|            | Sub-total        | 61  | 100.0%     | 39          | 100.0%   | 100   | 100.0% |  |
| Irrigation | Poor             | 22  | 46.8%      | 39          | 73.6%    | 61    | 61.0%  |  |
|            | Normal / average | 20  | 42.6%      | 13          | 24.5%    | 33    | 33.0%  |  |
|            | Well off         | 5   | 10.6%      | 1           | 1.9%     | 6     | 6.0%   |  |
|            | Sub-total        | 47  | 100.0%     | 53          | 100.0%   | 100   | 100.0% |  |
| Total      | Poor             | 44  | 40.7%      | 66          | 71.7%    | 110   | 55.0%  |  |
|            | Normal / average | 52  | 48.1%      | 25          | 27.2%    | 77    | 38.5%  |  |
|            | Well off         | 12  | 11.1%      | 1           | 1.1%     | 13    | 6.5%   |  |
|            | TOTAL            | 108 | 54.0%      | 92          | 46.0%    | 200   |        |  |

Table 8: Self-evaluation of the Household's Wealth Status

31. Regarding vulnerability and poor households, the data indicates that those individuals who are aged 65 and over may be at risk of becoming vulnerable. For instance, the data shows that

33% of the surveyed households for the road subproject and 27% of the surveyed households for the irrigation subproject are aged 65 and over. Additionally, the data shows that more than half of the surveyed households of the irrigation subproject hold a poor ID, (24% poor 1 and 28% poor 2); compared to a total of 38% of the surveyed households of the road subproject (23% poor 1 and 15 poor 2). This data suggests that although the proposed road subproject has a higher percentage of people aged 65 and over, it has fewer households that hold a poor ID. The data also reveals that that irrigation subproject has more poor 2 ID households (note that poor 2 is poorer than poor 1).

| Subproject | Physical condition         | Sex | of the head | of the | household | ٦   | <b>Total</b> |  |  |
|------------|----------------------------|-----|-------------|--------|-----------|-----|--------------|--|--|
|            | 2                          |     | Male        | F      | emale     |     |              |  |  |
|            |                            | n   | %           | n      | %         | n   | %            |  |  |
| Road       | Normal                     | 45  | 73.8%       | 22     | 56.4%     | 67  | 67.0%        |  |  |
|            | Elderly (aged 65 and over) | 16  | 26.2%       | 17     | 43.6%     | 33  | 33.0%        |  |  |
|            | sub-total                  | 61  | 100.0%      | 39     | 100.0%    | 100 | 100.0%       |  |  |
|            | Household with poor ID     |     |             |        |           |     |              |  |  |
|            | No                         | 46  | 75.4%       | 16     | 41.0%     | 62  | 62.0%        |  |  |
|            | Poor 1                     | 7   | 11.5%       | 16     | 41.0%     | 23  | 23.0%        |  |  |
|            | Poor 2                     | 8   | 13.1%       | 7      | 17.9%     | 15  | 15.0%        |  |  |
|            | sub-total                  | 61  | 100.0%      | 39     | 100.0%    | 100 | 100.0%       |  |  |
| Irrigation | Normal                     | 40  | 85.1%       | 33     | 62.3%     | 73  | 73%          |  |  |
|            | Elderly (aged 65 and over) | 7   | 14.9%       | 20     | 37.7%     | 27  | 27%          |  |  |
|            | sub-total                  | 47  | 100.0%      | 53     | 100.0%    | 100 | 100.0%       |  |  |
|            | Household with poor ID     |     |             |        |           |     |              |  |  |
|            | No                         | 25  | 53.2%       | 23     | 43.4%     | 48  | 48.0%        |  |  |
|            | Poor 1                     | 11  | 23.4%       | 13     | 24.5%     | 24  | 24.0%        |  |  |
|            | Poor 2                     | 11  | 23.4%       | 17     | 32.1%     | 28  | 28.0%        |  |  |
|            | sub-total                  | 47  | 100.0%      | 53     | 100.0%    | 100 | 100.0%       |  |  |

Table 9: Vulnerable Household

# 10. Financial Circumstances

32. Looking at the levels of financial stability and difficulty of the two proposed subprojects, the data reveals that in general the percentage of the surveyed households of the road subproject experiencing financial difficulties as well as those in financial debt is slightly higher. For instance 81% of the respondents from the road subproject reported that they have experienced a financial deficit within the past twelve months and 65 % have been in debt, while 70% of respondents from the irrigation subproject reported that they have experienced financial difficulties and 47% of them have been in debt.

33. The data also reveals interesting figures regarding the financial circumstances of males and females. Firstly it shows that the percentage of males in debt in both of the proposed subprojects is higher than the percentage of females. However, it also shows that while the percentage of females experiencing a financial deficit from the road subproject is higher than the percentage of males (82% of females compared to 80% of males), the same ratio does not apply to the irrigation subproject where the percentage of females reporting that they have experienced a financial deficit in the past twelve months is lower than the percentage of males (62.3% of females compared to 78.7% of males).

| Subproject                     | Experienced a financial deficit | Sex o | f the head o | Total  |        |     |        |  |
|--------------------------------|---------------------------------|-------|--------------|--------|--------|-----|--------|--|
|                                | within the last 12 months       | Male  |              | Female |        |     |        |  |
|                                |                                 | n     | %            | n      | %      | n   | %      |  |
| 1. Financial difficulty        |                                 |       |              |        |        |     |        |  |
| Road                           | No                              | 12    | 19.7%        | 7      | 17.9%  | 19  | 19.0%  |  |
|                                | Yes                             | 49    | 80.3%        | 32     | 82.1%  | 81  | 81.0%  |  |
|                                | Sub-total                       | 61    | 100.0%       | 39     | 100.0% | 100 | 100.0% |  |
| Irrigation                     | No                              | 10    | 21.3%        | 20     | 37.7%  | 30  | 30.0%  |  |
|                                | Yes                             | 37    | 78.7%        | 33     | 62.3%  | 70  | 70.0%  |  |
|                                | Sub-total                       | 47    | 100.0%       | 53     | 100.0% | 100 | 100.0% |  |
|                                | TOTAL                           | 108   | 100.0%       | 92     | 100.0% | 200 | 100.0% |  |
| 2. Household currently in debt |                                 |       |              |        |        |     |        |  |
| Road                           | No                              | 17    | 27.9%        | 18     | 46.2%  | 35  | 35.0%  |  |
|                                | Yes                             | 44    | 72.1%        | 21     | 53.8%  | 65  | 65.0%  |  |
|                                | Sub-total                       | 61    | 100.0%       | 39     | 100.0% | 100 | 100.0% |  |
| Irrigation                     | No                              | 19    | 40.4%        | 34     | 64.2%  | 53  | 53.0%  |  |
|                                | Yes                             | 28    | 59.6%        | 19     | 35.8%  | 47  | 47.0%  |  |
|                                | Sub-total                       | 47    | 100.0%       | 53     | 100.0% | 100 | 100.0% |  |

**Table 10: Financial Circumstances** 

#### 11. Landless Households

34. According to the communes' data, there are four villages in Batheay commune with a total population of 15,294 people; four villages in Chbar Ampov commune with a population of 6,363 people and 11 villages in Lvea commune with a total of 7,901 people. Given these population numbers, the commune data shows that there are 35 households in Batheay, 31 households in Chbar Ampov and 18 households in Lvea that are landless. The data on the landless households has not been incorporated into the 200 households sample as this survey addresses the potentially impacted land and other assets by the proposed subprojects. The commune data does not include information on landless households within the individual villages; therefore this information will be included during the detailed alignment measurement survey to feed into the detailed subproject design.

| Subproject | Commune     | No of<br>Village | No. of<br>Families | Total Land<br>(Ha) | Total<br>Residential<br>(Ha) | Total<br>Agriculture<br>(Ha) | Hill<br>Area<br>(Ha) | Flooded<br>(Ha) | I |
|------------|-------------|------------------|--------------------|--------------------|------------------------------|------------------------------|----------------------|-----------------|---|
| Road       | Batheay     | 6                | 3,689              | 9,370.00           | 296.00                       | 5,004.00                     | 150.00               | 3,920.00        |   |
|            | Chbar Ampov | 4                | 1,557              | 3,900.00           | 42.00                        | 1,249.00                     | -                    | 2,609.00        |   |
| Irrigation | Lvea        | 11               | 5,246              | 2,352.23           | 250.31                       | 2,101.33                     | -                    | 0.59            |   |

Table 11: Landless Households

Ha = hectare; HH = household.

#### 12. Female-Headed Households

35. The recent agricultural socio-economic analysis revealed that in 25% of the communes in the TSSD-AF targeted provinces there are more than 20% of households that are headed by females. This social impact assessment also confirmed that in the subproject areas the percentage of female headed households is very high.

36. The household survey data below (Table 12) shows the percentage of female headed households within the three surveyed communes; more precisely the percentage in Chbar Ampov

and Batheay communes for the proposed road subproject, and in Lvea commune for the irrigation subproject. The percentage of female headed households in Chabar Ampov is 13%, in Batheay it is 29.3% and in Lvea it is as high as 57.6%.

| Subproject | Commune     | Sex o | of head of | Total |        |     |        |  |
|------------|-------------|-------|------------|-------|--------|-----|--------|--|
|            |             | Male  |            | F     | emale  |     |        |  |
|            |             | n     | %          | n     | %      | n   | %      |  |
| Road       | Batheay     | 46    | 42.6%      | 27    | 29.3%  | 73  | 36.5%  |  |
|            | Chbar Ampov | 15    | 13.9%      | 12    | 13.0%  | 27  | 13.5%  |  |
| Irrigation | Lvea        | 47    | 43.5%      | 53    | 57.6%  | 100 | 50.0%  |  |
|            | TOTAL       | 108   | 100.0%     | 92    | 100.0% | 200 | 100.0% |  |

Table 12: Female-Headed Households

# 13. Community Problems and Concerns

37. The household survey information also disclosed the communities' problems, which have frequently occurred in the subproject areas. The problems are rated on the scale with the lowest being 'none', going up to 'a little', then 'moderate', rising to 'a lot of', right up to the 'most challenging' problems currently occurring in the subproject areas. The data shows that the proposed road subproject did tend to have a larger number of the informants reporting that there have been some social/community issues.

38. Of the hundred surveyed households for road subproject, more than 20% of them reported that they have had problems with a lack of potable water and a lack of proper hygiene and sanitation. This same group of households also reported that 28% of them lack proper public infrastructure and that 44% of them have to endure difficult road conditions. It is interesting to note that 51% of the total surveyed households from the road subproject and 30% of the irrigation subproject have experienced financial difficulties. In general, the irrigation subproject tends to have fewer social/community problems in comparison to the road subproject.

| The most challenging problems happening within the area |    | Road  |    | Irrigation |    | Total |  |
|---|----|-------|----|------------|----|-------|--|
|   |    | %     | n  | %          | n  | %     |  |
| Drug-use  | 5  | 5.0%  | 0  | 0.0%       | 5  | 2.5%  |  |
| Criminal  | 4  | 4.0%  | 1  | 1.0%       | 5  | 2.5%  |  |
| Domestic violence                                       | 4  | 4.0%  | 2  | 2.0%       | 6  | 3.0%  |  |
| Presence of communicable diseases                       | 6  | 6.0%  | 2  | 2.0%       | 8  | 4.0%  |  |
| Presence of gangsters                                   | 9  | 9.0%  | 3  | 3.0%       | 12 | 6.0%  |  |
| Lack of potable water                                   | 20 | 20.0% | 4  | 4.0%       | 24 | 12.0% |  |
| Lack of proper hygiene and sanitation                   | 26 | 26.0% | 6  | 6.0%       | 32 | 16.0% |  |
| Lack of housing   | 21 | 21.0% | 13 | 13.0%      | 34 | 17.0% |  |
| Lack of/far from public infrastructure                  | 28 | 28.0% | 9  | 9.0%       | 37 | 18.5% |  |
| Difficult road conditions                               | 44 | 44.0% | 13 | 13.0%      | 57 | 28.5% |  |
| Unemployment  | 34 | 34.0% | 22 | 22.0%      | 56 | 28.0% |  |
| Financial issues/debt                                   | 51 | 51.0% | 30 | 30.0%      | 81 | 40.5% |  |

#### Table 13: Financial Circumstances

#### III. SOCIAL ASSESSMENT/ANALYSIS

# A. Socio – Economic Conditions

39. The communities in the subproject project areas have mixed livelihood activities but these are predominately in the agricultural sector and also involve the sale of labour for farming activities and in factories. The other main core socio-economic activity is migration to the other main cities such as Phnom Penh in order to work. The social assessment found that the main priorities in regard to development that have been requested by the consulted communes, villages and households are the improvement of the rural road and the rehabilitation of the existing irrigation canals.

40. The assessment found that many of the consulted households have experienced unemployment due to a lack of agricultural activities and this has led to both rural-urban as well as cross-border migration. In some communes, illness, a lack of safe drinking water and livestock epidemics have been identified as the main factors that place people in a vulnerable position rather than food shortages. Furthermore this sense of insecurity is heightened as the poor who do not have access to microfinance institutions must borrow money from local money lenders at unregulated high interest rates. Due to this reason, the assessment found that nearly half of the community in the irrigation subproject area and more than half of the community in the road subproject area are currently in financial debt.

41. Additionally, on average more than 50% of the surveyed households reported that they are poor. Poverty, measured in terms of food and nutrition security and a lack of income, is correlated with a lack of proper infrastructure to increase agricultural production and diversification. Furthermore people have experienced limited market access; have lacked exposure to technology, extension activities and training. They have also had limited access to credit as well as a low level of education and skills. All these limitations are partly due to the poor road conditions. It is because of this reason that the communities readily expressed their desire to have a sufficient and properly functioning irrigation system and an improved transportation network to support the agricultural extension and livelihood improvement programs that are currently being promoted by the government. Additionally, the community reported that the government together with international development agencies and donors have provided assistance to improve the quality of agricultural production, and promoted a variety of crops and livestock for consumption and commercial purposes as well as supported capacity development related to good agricultural practices.

# B. Social Impact

42. The assessment found no direct negative impacts on the communities in both the subproject areas as the irrigation canals and the rural road access will be an improvement of the existing facilities, and this will provide ample benefits to the communities. The only negative impact will be the acquisition of small strips of land from both sides of the proposed road and irrigation subprojects. For the proposed rural access road subproject, the social survey and the household survey confirmed that the road rehabilitation will only involve an improvement of the road conditions within/almost the same current road alignment (about a width of 4-5 m along the sections running through the villages and about a width of 6-9 m along the sections through the rice fields). There is no government/commune reserved right of way (ROW) and thus it will involve limited land acquisition. Some minor impacts are expected, which involve mainly palm trees and "life" fences (see Tables 2 and 3). Some of the potential impacted households (life-fences and strips of land) were visited by the survey team in order to assess the actual scope of the impacts

and the intentions of the land/life-fence owners. The owners informed the team that they are happy to either remove the trees and fences by themselves or that the road construction company can use a bulldozer to clear these particular trees for them.

43. The proposed irrigation scheme will involve an improvement of the existing canals. According to the commune council members, who joined the meeting during the assessment, that the government township plan has already included "reserved right of way (ROW)" of these proposed irrigation sections. For some of them the width of the reserved irrigation land is 23 m and for some it is 30 m. The reason is that the government plans to have irrigation canal and road running parallel so as to facilitate the transportation of agricultural products. Currently, the villagers are using the land which is part of this reserved ROW and if the subproject were to acquire "all" of the land under the ROW, significant impacts could be expected for some households. It is because of this reason that some individuals expressed their concern of losing their land whilst others expressed their desire to have the irrigation canal during the village consultations. However, all of them agreed that if the rehabilitation involves a canal width between 2 to 4 m that only a few strips of land will be needed and the community will be able to continue using the land. Therefore, the project will design an irrigation system within this proposed width.

# C. Gender

44. The social assessment conducted in early March and in April 2017 indicates that in general both females and males have equal access to all the available resources and public facilities. The villagers consulted in all three communes informed the assessment that in general they are currently satisfied with their divided and shared household tasks and responsibilities. They also stated that gender in development is one of the priority areas that the government has actively been promoting and that gender mainstreaming is practiced in most of the rural development projects. However, the challenge often is associated with the social structure of the villages in the subproject areas, which still favor men over women in regard to public engagement, whilst giving the women responsibility for general household chores. Traditional roles and work norms for women mean that income generation is generally seen as the men's responsibility, whereas sourcing and preparing food for the household and child-caring are the women's responsibility. However, the assessment suggests that presently there are more and more women who are entering the workforce and that these roles are in flux. This is especially the case in urban and periurban areas where increasing numbers of women are found in various workplaces. Nevertheless, taking care of children and feeding the family remain to be seen as the women's responsibility.

45. Village meetings informed the assessment that the women are preferred for various jobs, especially in the age range of 16 to 40. As more and more women enter the workforce, women have less time to take care of their families and children. This role is then transferred to the older female members of the family, their mothers, which means that the grandmother has to take care of the housework and be responsible for child-caring tasks. In one of the villages in Batheay commune, for instance, a grandmother is looking after six children belonging to her two daughters and one son. He is working in Phnom Penh and the daughters have jobs at a garment factory located near the commune. During the discussions it became apparent that the women often send a larger amount of money back to their parents than the men. When asked for an explanation, most of the informants said that men often have greater expenses and as soon men are married they also tend to provide financial support to their wives' families.

46. Regarding women's education, all of the informants in the consulted villages stated that the education level of the females is very low and that it is much lower amongst the older

generation. In some villages the informants claimed that more than half of the adult females in their villages are illiterate. At the moment young girls aged between 16 and 19 often drop out/leave school to work in factories near their villages, in Phnom Penh and/or in different locations in other provinces. The reason is that females are preferred to fulfil the positions of service providers, factory workers and fruit pickers (eggplants, chilly, tomatoes, beans, etc.). Meetings with the provincial authorities from both Kampong Cham and Prey Veng provinces suggested that the educational level of women adds to the difficulties in forming and maintaining female Livelihood Improvement Groups (LIG) committees and members with the current TSSD project. The female illiteracy rate is also affecting the effective implementation of the Good Agriculture Practices (GAP) programs because most of them do not know how to write and/or read the information that has been provided. Therefore, they are unable to provide feedback and information as well as communicate with the project within the given timeframe.

47. In relation to women's health issues, the information from the village' meetings and community consultations suggested that women and men have equal access to health care services. However, the data from the household survey revealed that the percentage of females who reported that they have someone in the family who has chronic health issues was much higher than that of males.

48. The survey data shows that on average more than 30 % of the surveyed households are headed by females. In general, Cambodia has a high percentage of female headed households as the national census data in 2012 indicated that 22% of all households and 28.6% of rural households were headed by women. Households headed by women are likely to be more vulnerable; they are also likely to experience shocks differently than male-headed households, largely due to social norms and more limited economic opportunities and income. Nonetheless, not all of the female headed households are considered as poor if they own sufficient productive agricultural land, derive income from off-farm or non-farm-based activities, or have adult members of the household engaged in waged employment outside of the commune.

49. Villagers consulted in the subproject areas engage in a mixture of livelihood activities but are predominantly engaged in agricultural activities. Additionally, although more and more people are migrating for work, most of the income is being generated from the sale of agricultural products or wage labour from farming activities. Men and women share their different work roles in the cultivation of crops. When activities involve machinery (such as clearing land and harvesting crops), men tend to take the leading role, and when physical inputs are needed, females tend to take the leading role (such as weeding and nurturing). Women, especially the older generation, also take over the role of childcare for their own offspring, who are engaged in upland-agriculture or are employed as garment workers. Additionally, as the female head of the household becomes older and there are fewer economically active members of the household, the poverty level becomes more deeply entrenched than for those households that are headed by men. In conclusion women in the subproject areas are active in socio-economic arena through the generation of household income as well as participation in livelihood development activities and also remain the key person who is responsible for household chores.

#### D. Potential Social Benefits

50. Both proposed subprojects will be developed over two years and they will directly improve the livelihoods of rural households who will gain direct and indirect benefits from the improved irrigation systems, roads, as well as from enhanced disaster risk management. Potential benefits under the TSSD-AF Output 1, are that the communities in the subproject areas will be encouraged to join community-driven development plans and activities related to the improvement of construction of small-scale infrastructure at the village level. The benefits will include the following: (i) expand the irrigated agricultural area; (ii) gain access to better road conditions, reduce transport costs and improve access to markets; (iii) be given the opportunity to participate in capacity improvement programs related to smallholder farmers' groups and become a member of the new or existing livelihood improvement groups; and (iv) gain knowledge in disaster risk management.

51. Additionally, potential benefits under the TSSD-AF Output 2, the communities in the subprojects' areas will have the opportunity to be involved in support programs that create an enabling environment for increased agricultural productivity and diversification through: (i) improving agriculture, food security and the nutrition policy environment, especially in crop diversification with climate smart agricultural practices for rice and two non-rice crops; (ii) increasing the availability and access to quality seeds of climate-resilient rice and non-rice crops; (iii) increasing access to agricultural information and market data; and (iv) further developing the value chains of agricultural products by strengthening and expanding the agribusiness enterprises established through the current project.

52. Furthermore, a better transport network and connectivity will enable government services to be delivered to rural communities; allow farmers to purchase inputs for agricultural production, and bring surplus produce to markets. It will give rural people easier access to health services, education and other amenities. Other demand-driven small-scale infrastructure, such as schools, facilities for safe drinking water as well as toilets, will contribute in reaching other social development goal-related indicators. In addition to the small scale infrastructure the project will also assist the poor in developing skills that enable them to add value to their agricultural produce and also lead to a diversification of crops. Providing the poor with the access to financial resources will give them a greater sense of security and enable them to engage in new livelihood activities. This eased access to credit together with more well-established farmer organizations will empower the poor.

53. The benefits the communities will gain through better irrigation systems include the following: (i) the availability and sufficiency of the water supply for the irrigated areas; (ii) an increase in irrigated areas in all seasons and for rice crops will lead to an increase in rice yield and production; (d) the high yields of other crops that can be grown during the dry season; and (e) the resulting increase in income from the sale of this agricultural produce.

# E. Recommendations

54. Based on the results of the assessment, both of the proposed subprojects are socially acceptable for implementation. They are strongly supported by the communities and since the improvement of the rural access road and the irrigation canals are the villagers' primary request in terms of development, there is a much greater chance of creating the communities' sense of ownership.

55. Additionally, both subprojects will be the driving force to promote more agricultural activities, create employment opportunities and secure people's incomes. In this regard, the support provided by the subproject implementation will not only help to improve small-scale infrastructure development but will also help reduce the financial difficulties, which almost the majority of the communities are currently facing. As more people are employed locally, it will eventually reduce the flow of rural-urban migration and also help mothers to take care of their offspring as they are closer to home, instead of leaving these responsibilities to the grandmothers.

56. Even given the communities' support and their request to implement these proposed subprojects, there are few social impacts, disturbances and issues related to the distribution of benefits, which should be clearly addressed and with appropriate mitigation measures put in place, prior the projects' approval. These recommendations include the following:

- (i) Issues related to land, trees and other structural impacts. These subprojects must have proper procedures for land acquisition as well as compensation plans. Where the communities are willing to donate their lost assets, the total amount of the lost asset should be less than 5% of the entire impacted household asset and a donation confirmation report should be prepared in accordance with the Resettlement Framework.
- (ii) The donation confirmation report should focus on a rigorous due diligence procedure with a full documentation to verify the voluntary donation bona fides. The voluntary donations should be directly linked to benefits for the affected households and adequate grievance procedures should be provided for the affected people.
- (iii) The affected vulnerable households should be included in the project development and mitigation plans to ensure that they participate in the projects' activities and gain benefits from the subprojects.
- (iv) In relation to gender issues as the assessment found that the percentage of the female-headed households is relatively high, the subproject's Gender Action Plan should include special measures to ensure that they gain from the projects benefits on an equal basis.

# F. Grievance Redress Mechanism

57. TSSD-AF will use the GRM under the Commune/Sangkath fund and the NCDDS mechanism, as follows:

58. The complaints can be made against any person who is engaged in the irregularity of all fund in the NCDD annual work plan and budget, and the performance of sub-national government officials. Complaints can also be filed against persons who engage in the project implementation such as contractor, Commune Councilors, Commune Clerk, Provincial treasury, Provincial administration staff, District councilors, Provincial councilors, development partners' staff.

59. Complaints can be made by three ways: (1) Writing complaint, (2) phone call and (3) report to PAWG member. To file a written complaint, people can use paper or complaint form which is available at the PAWG office in the province. People can call straight away to any member via his or her phone number in the leaflets (that should be in the Accountability Box).

60. People also can meet in person with any PAWG member who are listed as PAWG members in the province. Name and contact address for each PAWG members are written in the leaflet. Each PAWG is required to set up the hotline for receiving complaints.

61. The process of investigation and complaint resolution is clearly written in the manual that was used during training to Provincial Support Officers and others. DFTs/PFTs of ExCom are responsible to collect complaints from Accountability Boxes. To open the box at Sala Khum, it is required that at least 3 persons such DFT, Commune administrative representative are present, but they are not allowed to read the complaints. At least, 2 PAWG members are assigned to monitor the screening of complaints which is done by Provincial Support Group (PSG). An investigation team is appointed by PAWG. The complaints are not take action if the complaints

are not within the PAWG mandate. PAWG meeting is held to make decision based on the investigation report.

62. Confidentiality is one of key principles for complaint investigation process which is applied by the Investigation Team. All complaints that are received from different sources are confidentially kept. People could submit anonymous complaints. PAWG is obligated to raise awareness of people and stakeholders about this matter.

63. Any person and any stakeholder has the right to complaint to Provincial/Municipal Accountability Working Group (PAWG) on any issues of irregular use of C/S Funds and any irregularities they observe in the C/S Fund project preparation, project procurement and project implementation by placing a written complaint in the "Accountability Box" located near to their house or by making a verbal report, including phone calls, to any one of the PAWG members. The PAWG member who receives such a phone call shall prepare a written report/minutes of the complaint. The complaints and the minutes are submitted to the PAWG meeting for discussion and resolution.

64. The procedures for solving the irregular issues and complaints will follow the procedures described in the Guidelines on the Establishment of the PAWG and the Procedures described in the NCDD guidelines.

# 1. Sanction against the Abuse Persons

65. Each PAWG adopts the sanctions in line with Guideline No. 014 issued by NCDD. Sanctions include the followings:

- (i) Termination of staff contract if incentives are provided;
- (ii) Take measurements against The Royal Government of Cambodia's Co-Statute of Civil Servant Law
- (iii) A financial fine
- (iv) Cancellation of Contractor's name from the Pre-Qualified Contractor List.
- (v) Apply verbal or written worming and/or financial fine against the Administrative and Management Law of Commune/Sangkat

# G. Training and Capacity Building

66. In order to support the construction of these civil works and to ensure their sustainability capacity building will be provided. This will include a training of trainers course in the national climate smart curriculum. The curriculum is being developed by the Ministry of Agriculture Forestry and Fishery (MAFF) in collaboration with the Food and Agriculture Organisation (FAO), which was required under the service provision contract for rice and diversified production. The TSSD-AF project will also facilitate quarterly meetings in each commune between the input suppliers, farmers and processors / traders in order to develop their value chain clusters.

67. Several training courses will be provided to both of the subprojects by the TSSD-AF Project. These training courses will include:

- (i) Training for Commune Mobile Access Workers
- (ii) Livelihood Improvement Group (LIG) Association Support
- (iii) Aquaculture Value Chain
- (iv) Development of Multi-media Materials for the Mobile Commune Access Program
- (v) Design and Supervision Contractor(s), including road safety awareness and training services
- (vi) Rice and Vegetable Value Chain, including Integrated Pest Management
- (vii) Farmers Water User Group/Operation and Maintenance
- (viii) New LIG Establishment & Support + service teams
- (ix) Grievance Redress Mechanism and Public Consultation

#### H. Project Implementation

68. The subproject civil works for the irrigation canals and village road will be included in the commune development plan, confirming the community's interest and funds to the contractors will be paid by the relevant commune councils. The final design for the subprojects, support in bid preparation, and construction supervision will be undertaken by an Infrastructure Design and Supervision consultant team (DSC). A provincial support team (PST) will be established for each province incorporating provincial staff of the executing and implementing agencies ministries. The PST will ensure that all subproject designs are technically cleared by relevant provincial technical departments and in particular that road designs are approved at the provincial level by the provincial department of rural development, and registered in the Ministry of Rural Development's road inventory, and that irrigation designs are approved by the provincial departments of water resources and meteorology, and registered in the Ministry of Water Resources and Meteorology's Cambodia Information System on Irrigation Schemes.

69. The DSC will support the commune councils and PST to prepare tender documents and to contract out construction. The commune councils will therefore act as the project's implementation units for the infrastructure outputs. The commune councils will remain the project owners and will award the contract, manage the contract and monitor the construction. The DSC will assist the commune councils to monitor construction standards and facilitate monthly coordination at the provincial level.

70. Project implementation consultants (PIC) will include Social Safeguards, Gender, and Environmental Safeguards and Climate Change Specialists who will work with the national specialists and assist the PSTs and commune councils to fulfil their social and environmental responsibilities in implementing subproject safeguards related plans.

71. To enable effective national government oversight of the project, the innovative steering committee arrangement of TSSD will be continued, and will provide guidance to the executing and implementing agencies without creating an excessive additional institutional burden. CARD will handle the steering committee functions as part of its regular meetings as well as other meetings as needed, and will ensure that the project's performance is monitored throughout implementation, right up to its completion.

#### I. Monitoring and Evaluation

72. The TSSDP-AF will use the same overall benefit monitoring and evaluation system that was developed for the original TSSD project and it will include indicators that will disclose whether the subproject beneficiaries were able to benefit from the project's interventions. It will also include qualitative indicators such as the beneficiaries' satisfaction with consultation process during the subproject's preparation. In addition, an external monitoring agency will be recruited to monitor the project to the satisfaction of ADB.

73. The monitoring should focus on the following to ensure that: (i) the principles of voluntary donation are observed; (ii) those who opted for donation are not forced to donate their land and assets; and (iii) the living standards of those who opted for donation are not negatively affected. The external monitoring agency will be a qualified NGO or consultant with recognized experience

in Cambodia. The external monitoring agency's observation will be included in the project's quarterly progress reports and overall evaluation report.

74. During the construction stage, the commune councils will make appropriate arrangements for monitoring according to the progress and actual work requirements during the projects implementation. When complaints are received from the public (either directly or via the formal grievance redress mechanism), the commune council staff will immediately conduct additional inspections.

| Subproje                 | ect: Rehabilitation of irrig  | jation scheme   |                                    |   |  |  |  |
|--------------------------|---|---|------------------------------------|---|--|--|--|
| DATE                     | LOCATION AND TIME   | FACILITATING ACTORS   | PARTICIPANTS                       | DISCUSSION / RESPONSES / OUTCOMES<br>FOLLOW-UP ACTIONS WITH RESPONSIBILITY  |  |  |  |
| 7<br>March<br>2017       | Commune/s: Lvea<br>Venue: Tnaot Chros<br>Village<br>Time: 2:30 to 3:30PM<br>Photo | PPTA consultant staff     -Ms. Chansouk Insouvanh     -Mr. Tem Sereivouth     -Mr. Heng Bunny                                 | Female: 11<br>Male: 8<br>Total: 19 | <ul> <li>Presentation:</li> <li>Introduction about the TSSD-AF</li> <li>Safeguard requirement under ADB SPS</li> <li>Confirmation on the need of development within the commune/discussion on willingness for donation</li> <li>Asking for support for the proposed road subproject</li> <li>Discussion on SES condition of the people Comments – Questions – Answers:</li> <li>Q1: What is the proposed canal width in this village?</li> <li>Q2: If take more than 7.5 meters each side, my house will be affected.</li> <li>Q3: Will the road along the canal to be built? We afraid without road we can not transport crop from field.</li> <li>Q4: I can't lose my land if the project acquires bigger land.</li> <li>Q5: Will the project provide famers with good rice seeds? Since the project is to improve agricultural project, there should be provision of good seeds to people</li> </ul> |  |  |  |
| 08<br>March<br>2017      | Commune/s: Lvea<br>Venue: Boeng Snao<br>village<br>Time: 8:30 to 10:30AM<br>Photo | <ul> <li>PPTA consultant staff</li> <li>Ms. Chansouk Insouvanh</li> <li>Mr. Tem Sereivouth</li> <li>Mr. Heng Bunny</li> </ul> | Female: 32<br>Male: 7<br>Total: 39 | <ul> <li>Presentation:</li> <li>Introduction about the TSSD-AF</li> <li>Safeguard requirement under ADB SPS</li> <li>Confirmation on the need of development within the commune/discussion on willingness for donation</li> <li>Asking for support for the proposed road subproject</li> <li>Discussion on SES condition of the people Comments – Questions – Answers:</li> <li>Q1: Will the rehabilitation of canal install the culvert?</li> <li>Q2: Please rehabilitate the canal as big as people voluntary donate to the project. Experience from other commune showed that people donate bigger land to the project but the canal built very small canal that cannot supply the farm areas.</li> <li>Q3: From the engineer design, there should be a proper design to let water flow easily in to the farmland.</li> </ul>  |  |  |  |
|                          |   | Totals  |                                    |   |  |  |  |
| Number of meetings:<br>2 |   | Participant<br>Female: 43<br>Male: 15<br>Total: 58  | s:<br>3                            |   |  |  |  |
| Subproje                 | ect: Road improvement p   | roject in Batheay and Chbar   | Ampov Commune                      | S   |  |  |  |
| DATE                     | LOCATION AND TIME   | FACILITATING ACTORS   | PARTICIPANTS                       | DISCUSSION / RESPONSES / OUTCOMES FOLLOW-<br>UP ACTIONS WITH RESPONSIBILITY   |  |  |  |
|                          | Commune/s: Batheay  | PPTA consultant staff   |                                    |   |  |  |  |

#### Attachment 1: Social Assessment and Consultation Records

| Subproje            | ect: Road improvement p   | S  |                                     |  |
|---------------------|---|--|-------------------------------------|--|
| DATE                | LOCATION AND TIME   | Facilitating Actors  | PARTICIPANTS                        | DISCUSSION / RESPONSES / OUTCOMES FOLLOW-<br>UP ACTIONS WITH RESPONSIBILITY  |
| 10<br>March<br>2017 | Venue: Champou Prerk<br>Pagoda<br>Time: 9:30 to 11:00 AM<br>Photo                         | - Ms. Chansouk Insouvanh<br>- Mr. Tem Sareivouth<br>- Mr. Heng Bunny                       | Female: 9<br>Male: 14<br>Total: 23  | <ul> <li>Presentation:</li> <li>Introduction about the TSSD-AF</li> <li>Safeguard requirement under ADB SPS</li> <li>Confirmation on the need of development within the commune/discussion on willingness for donation</li> <li>Asking for support for the proposed road subproject</li> <li>Discussion on SES condition of the people Comments – Questions – Answers:</li> <li>Q1: Will the drainage system to built along the road?</li> <li>Q2: What is the proposed road width and type of road, laterite or concrete?</li> <li>Q3: Will my fence get impact by the road?</li> <li>Q4: Will the project acquire land equally from both sides?</li> <li>Q5: Is there any plan to build irrigation system at the rice field? We are lacking of water source for two time cropping.</li> </ul>  |
| 10<br>March<br>2017 | Commune/s: Chbar Ampov<br>Venue: Chbar Ampov<br>Village<br>Time: 2:00 to 3:00 PM<br>Photo | PPTA consultant staff     Ms. Chansouk Insouvanh     Mr. Tem Sareivouth     Mr. Heng Bunny | Female: 11<br>Male: 17<br>Total: 28 | <ul> <li>Presentation:</li> <li>Introduction about the TSSD-AF</li> <li>Safeguard requirement under ADB SPS</li> <li>Confirmation on the need of development within the commune/discussion on willingness for donation</li> <li>Asking for support for the proposed road subproject</li> <li>Discussion on SES condition of the people Comments – Questions – Answers:</li> <li>Q1: What is the proposed road width?</li> <li>Q2: Will the project compensate for the lose of trees or fences?</li> <li>Q3: Will the canal along the proposed road be constructed?</li> <li>The villagers really need the water for rice cultivation. During the construction, the project can dig the pond inside the people rice field and get the soil to upgrade the road and people will reserve the pond for water usage.</li> <li>Some families may affect by road rehabilitation and they may not agree for donation.</li> </ul> |
| Nu                  | umber of meetings:  | Totals<br>Participant  | s:                                  |  |
|                     | 2   | Female: 20<br>Male: 31<br>Total: 51  | 0                                   |  |

| Pa                             | rticinant   | s' Fa                    | acilitating Co  | ommune   | ia nnta co                              | nsultant          |                           |  |                           | Particina  | ants <sup>.</sup> Vil   | lagers  |                                 |
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| Total 12 (female/4 and male/8) |   |                          |   |  | Total 19 (female 11 and male 8)         |                   |                           |  |                           |  |   |   |                                 |
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| កាលា<br>ទីតាំង<br>ស្រុករ       | Torie Sa<br>Sty9/ Date :<br>/ Located in: La<br>District <u>pr.ca</u> ) | Poven<br>igg_O<br>ea.Com | y Reduction and Smal<br><u>- ខែ ma ឆ្នាំ២០១៧</u><br><u>សារ ឆ្នាំ១០</u> តនៅ៖ ភូមិ/<br>្នូរខត្ត/ Province | lholders Developm<br>ໜີເຊັ/ Time: 🧕<br>Village | ent Project (TSSD<br>30 pm Bitly To<br> | AP)<br>3130px<br> | 1                         | antipang   | the ce                    |  | 2   | 030444880   |                                 |
| 110                            | win:  | 199                      | តនាទី   | หลากคอานัส                                     | ແນຮອເໜັດ                                | ທຸສາຍສ            | 0                         | 0  |                           |  | -   | 0851193686  | COST -                          |
| No.                            | Name  | Sex                      | Position  | Organization                                   | Phone Number                            | Signature         | -3                        | 50075 6008   |                           |  |   | 0.0040.00400  | Silasi                          |
| 1                              | - ma  | 75                       | 333 37 16.  | ~~   | 010494658                               | -AL               | 4                         | 3" 22  | cr                        |  |   | 010 444 660 .   | 39.84                           |
| 2                              | AE 84   | 127                      | newstr  | ent'   | 010444834                               | CIC-              |                           |  |                           |  |   | 1.10  | Contra la                       |
| 4                              | 1 9   | 22                       | Tentokonz   | Red  | 010124 660                              | -tal-             | 2                         | 22 20  | 0                         | -  | V   |   | 10000                           |
| 5                              | new Transfe   | 20                       | anter   | Lon to X:                                      | 010100-832                              | Charles .         | 6                         | 14 23  | or                        | IJ   |   |   | -                               |
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| 7                              | 12 8 20   | N.                       | Ula   | ad as any                                      | 396 84290                               | 11 01 -           | 7                         | 627453   | 0.                        |  | ^   | -   | 1                               |
| 8                              | a gir average   | , 11                     | 19 2 10 200 200 251   | 750.   | 077737804                               | -SM               | 8                         | and a  | m                         |  |   |   | 1                               |
| 10                             | - le/s  | 45<br>567                | Contraction   | <i>PPIM</i> − <i>T8SQ</i> −                    | 012912926                               | 11-               |                           | 1  |                           |  |   |   | 12.00                           |
| 11                             | in with   | ()                       | SCODO SPID  | CPTR-TSOD                                      | 0/2518202                               | Tor               | 9                         | 273 5343   | 0                         |  | *   |   | CONTRACTOR OF                   |
| 12                             | Sout-1  | F                        | Consultant  | SHEC   |   | Jan,              |                           | 10   |                           |  |   | - The second  | 1 Sugar                         |
| 13                             | 1   |                          |   |  |   |                   | 10                        | COAL FARD  | - Ar                      | U  | -   |   | 6.0                             |
| 14                             |   |                          |   |  |   |                   | И                         | 22 22  | 62                        | ,  |   |   | 1000                            |
| 15                             |   |                          |   |  |   |                   |                           | A. 4   |                           |  |   |   | 1000                            |
| 17                             |   |                          |   |  |   |                   | 12                        | incipition   | 2 00                      | *  | 0   |   | ALC: N                          |
| 18                             |   |                          |   |  |   |                   | 10                        | 2.00   |                           |  |   | and the second second   | ASS.                            |
| 19                             |   |                          |   |  |   |                   | 13                        | 1 Stoper   | a                         |  | -   |   |                                 |
| 20                             |   |                          |   |  |   |                   |                           |  |                           |  |   |   |                                 |
|                                |   |                          |   |  |   |                   | Note 1<br>Note 2          | : Show   | wn is<br>comp             | the first p<br>lete and  | age out<br>original   | of 2 attendan<br>set of attenda   | ice she<br>ance sh              |

#### Attachment 2: List of Persons Met

| Commune/s: Lvea   |                                 |
|---|---------------------------------|
| Venue: Tnor Chroh Village, Lvea Commune, Preah Sdach D  | istrict, Prey Veng Province     |
| Date: 08 March 2017                                     |                                 |
| Participants: Facilitating Commune, ia, ppta consultant | Participants: Villagers         |
| Total 8 (female:1 and male:7)                           | Total 39 (female:32 and male:7) |
|   |                                 |

| nui        | ជុំសាធារណៈ ស្តីពីរ               | ា ៨សូមាង      | Attendance L<br>រាជ់បន្ថយភាពក្រីក្រ និងអា | ist at Meeting<br>កំរិន្យារ៍ពសិកម្មខ្នាភត្ | ចនៅតំបន់ទន្លេសាប (         | ជំណាក់កាល ២)          | ទីតាំងរ<br>ចំនួនប្រ | រជាជនចំលាំកហាំ<br>ហ៊ីជានេរ៖<br>លើណាសៃ | u 39         | າຍີ່ <u>ເຊັ່ນ</u><br> | nin<br>nin<br>1000_100 | Threads 180 fr | 84         |
|------------|----------------------------------|---------------|---|--|----------------------------|-----------------------|---------------------|---------------------------------------|--------------|-----------------------|------------------------|----------------|------------|
|            | Tonle Sap                        | Powerts       | Public Consulta<br>Reduction and Small    | ation Meeting for<br>Incidens Developm     | ent Project (TSSD-)        | AD .                  | 111                 | ពេរេ្តរ:                              | <b>N</b> 18. | Цĝ                    | ų                      | ມູດເອຍທາ       | ស្វាមរមវិជ |
| លាប<br>ពំង | ពិរត្តទ/ Date :<br>/ Located in: | 159 <u>rs</u> | ្រាទ្រ<br>ស្ថិញនៅរ ភូមិសេទជ               | TEOB/ Time:<br>Vitage                      | <u></u>                    | -62                   | 1.                  | mars.                                 | 25           | en tiggene            | · 04                   | 015310136.     |            |
| rv         | District                         | ALC:          | _18 V Province                            | <u></u>                                    |                            | 0                     | 2                   | restrutes                             | N            | (TT/Himme             | 52                     |                | 8. 3       |
| 1          | លម្លា:<br>Name                   | 1/10<br>Sax   | ສູຫອັ<br>Position                         | អង្គភាពស្តារើខ<br>Organization             | ແນະສູແນ້ດູ<br>Phone Number | ហត្ថលេខា<br>Signature | 3                   | 1800 Jane                             | N            | / 60.0005             |                        |                | * 25       |
|            | 12 de                            | 77            | enter Strong                              | Discog.                                    | 010 444 937                | and a                 | 4                   | 13.4mm                                | er.          | 11 570972             |                        |                |            |
|            | Made .                           | 25            | 638 MA                                    | en and                                     | 196.9741140                | Ster.                 | 5                   | nd zowa                               | 80           | 11-12-                | 11                     |                | 2.         |
|            | nogs State                       | U.            | Neveran H                                 | 750.<br>PDTA.TOD.                          | 017 757 86.U               | -sil<br>STES          | 6                   | 37.                                   | 85           | 11-                   | ß                      |                | 2          |
|            | Saily                            | F             | Consultant.                               | PPTA THO!<br>PPTA                          | F.01291792                 | 6-2-                  | X                   | gen sons.                             | <u>\$7</u>   | 11-                   | 11                     |                | i i        |
|            |                                  |               |   |  |                            | Ø ]                   | 8                   | anglams.                              | 27           | 12 friding            | 4                      |                | 1          |
|            |                                  |               |   |  | 7                          |                       | 9                   | gangs                                 | ₽V           | 11-                   | //                     |                | 20 A       |
|            |                                  | 2             |   |  |                            | *                     | 10                  | 377.0987                              | N            | Л                     | 11                     |                | 2.4        |
|            |                                  |               |   |  |                            |                       |                     | FOF PETT                              | W            |                       | 1/                     |                | Hermonica  |
|            |                                  |               |   |  |                            |                       | 12                  | Ros S                                 | 24           |                       | //                     | 1. E           | they a     |
|            |                                  |               |   |  |                            |                       | 143                 | ms 2.                                 | 24           | //                    | 11                     |                | 1          |
|            |                                  |               | · · ·                                     |  | 6                          |                       |                     | 10                                    |              | 1                     |                        |                |            |

| e: 10 March 2017   |                          |  |            |   |  |   |  |
|--|--------------------------|--|------------|---|--|---|--|
| Participants: Facilitating Commune, ia, ppta consultant  |                          |  |            | Particip  | ants: Villa  | igers   |  |
| Total 9 (female:3 and male:6)  |                          |  | tota       | l 23 (ferr  | nale:9 and   | male:14)  |  |
| នេះអ៊ីខដ្ឋមនេះប្រជុំ<br>Attendance List at Meeting<br>ប្រជុំសាធារណៈ ស្តីពីតម្រោង កាត់បន្ថយរណព្រីក្រ និងអភិវឌ្ឍន៍កសិកម្មម្នាតកូចនៅតំបន់ទន្លេសាប (ដំណាក់កាល ២) | កិច្ចក្រ<br>កាល<br>ទីនុវ | រជុំសាធារណៈ ស្ដីវ៉<br>ឃើរក្លទ៖ ថ្ងៃទី<br>រស្ថិពនៅ៖ វិ <sub>ស្តែ</sub> ស្ដី<br>ប្រដាជនចូលរួមស | Intination | <b>២ភូរីខត្តម</b><br>៣៣បន្ថយភាពក្រីព្រ<br><u>(3 ឆ្នាំ៦០</u><br>ភូមិ <u>គ្រោះ ស</u> ំយំ<br>2 ឆាក់ ត្រី | រា និងអូមិលិខិនទំពល់អង្ក<br>១៨ ម៉ោង_0<br>ក្រោសលា ស្រុក<br>ភ្លាសលា ស្រុក<br>ភ្លាសលា ស្រុក | មម្រជុំ<br>ខ្លាតពូចនៅតំបន់ទន្លេសាប (<br><u>-3.0 ដល់ H : ៣</u><br> | Ramina v)<br>-<br>-<br>-<br>-<br>-<br>-<br>- |
| Public Consultation Meeting for<br>Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF)  | 83.2                     | រណ្ណះ  | 1010       | 1/8   | ų  | លេខទូស័ព្ទ  | emada  |
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|  |                          |  |            |   |  |   |  |
|  |                          |  |            |   |  |   |  |

| Venue: Chbar Ampov Village, Chbar Ampov Commune, Batheay District, Kampong Cham Province         Date: 10 March 2017         Participants: Facilitating Commune, ia, ppta consultant<br>Total:7 (female:2 and male:5)         Participants: Villagers<br>Total:28 (female:11 and male:7)         Streamage Computer integrate<br>Total:7 (female:2 and male:5)         Streamage Computer integrate<br>Total:28 (female:11 and male:7)         Streamage Computer integrate<br>Total:29 (female:10 and male:7)         Streamage Computer integrate<br>Mighthorman integrate integrat   | Commune/s:   | Chbar Ampo   | VC  |                                       |              |                                   |   |                         |  |  |  |                         |
|---|--|--|---|---------------------------------------|--------------|-----------------------------------|---|-------------------------|--|--|--|-------------------------|
| Date: 10 March 2017       Participants: Facilitating Commune, ia, ppta consultant<br>Total:7 (female:2 and male:5)       Participants: Villagers<br>Total:28 (female:11 and male:7)       Strengenergy Consultant<br>Total:7 (female:2 and male:5)       Strengenergy Consultant<br>Total:29 (female:11 and male:7)       Strengenergy Consultant<br>Materian of the strengen of the s  | Venue: Chba  | r Ampov Villag   | e, Chbar A  | mpov Cor                              | nmune, Bat   | heay Dis                          | strict, Ka  | mpo                     | ng Chan  | n Province   |  |                         |
| Participants: Facilitating Commune, ia, ppta consultant<br>Total:7 (female:2 and male:5)  Participants: Villagers<br>Total:28 (female:11 and male:7)  Statestasc List Meeting<br>Attention List Meeting<br>Attention of mainteening<br>Attention of mainteening<br>Atten  | Date: 10 Mar   | rch 2017   |   |                                       |              |                                   |   |                         |  |  |  |                         |
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Please review this carefully. There is a mix up of TSSD and TSD-AF.

#### Annex 4: Due Diligence Report

#### **Definition of Terms**

1. **Beneficiary** – all persons and households from the villages who voluntarily seek to avail themselves of, and be part of, the project.

2. **Compensation** – payment in cash or in kind at the replacement cost of the acquired assets for the project.

3. **Cut-off Date** – the cut-off date is defined as the date prior to which the occupation or use of the Project areas makes residents/users eligible to be categorized as project affected persons. The cut-off date for this Project will be the date of conducting public consultation for each subproject that requires land acquisition with the project-affected persons before conducting inventory of loss (IOL) or the detailed measurement survey (DMS).

4. **Displaced persons** – refers to all of the people who, on account of the activities listed above, would have their (1) standard of living adversely affected; or (2) right, title, interest in any house, land (including premises, agricultural and grazing land) or any other fixed or movable asset acquired or possessed temporarily or permanently; (3) access to productive assets adversely affected, temporarily or permanently; or (4) business, occupation, work or place of residence or habitat adversely affected; and "displaced person" means any of the displaced persons.

5. **Eligible land holders** – refers to affected persons who (a) hold title to land; or (b) do not hold title but whose possession of land can be legalized with a title pursuant to the Land Law of Cambodia including those with recognizable rights.

6. **Entitlement** – range of measures comprising compensation, income restoration support, transfer assistance, income substitution, and relocation support which are due to affected people, depending on the nature of their losses, to restore their economic and social base. The entitlements adopted for TSSD-AF were guided by the applicable national laws, regulations, and ADB SPS. The entitlements may be further revised based on actual status of impact, if applicable, in an updated version of the resettlement framework.

7. **Household** – means all persons living and eating together as a single social unit.

8. **Income restoration** – means re-establishing income sources and livelihoods of projectaffected households to at least maintain to their pre-project level.

9. **Improvements** – structures constructed (dwelling unit, fence, waiting sheds, pigpens, utilities, community facilities, stores, warehouses, etc.) and crops/plants planted by the person, household, institution, or organization.

10. **Land acquisition** – the process whereby a person involuntarily loses ownership, use of, or access to, land as a result of the project. Land acquisition can lead to a range of associated impacts, including loss of residence or other fixed assets (fences, wells, tombs, or other structures or improvements that are attached to the land).

11. **Project Authorities** – refers to the Ministry of Agriculture, Forestry and Fishery (MAFF), the National Committee for Sub-National Democratic Development Secretariat (NCDDS), the Ministry of Economy and Finance (MEF), the General Department of Resettlement (GDR) of MEF.

12. **Project Executive Agency** – Refer to Ministry of Agriculture, Forestry and Fishery (MAFF) and NCDDS

13. **Project Affected Persons (PAPs)** – includes any person, households, entity, organizations, firms or private institutions who, on account of changes that result from the project will have their (i) standard of living adversely affected, (ii) right, title, or interest in any house, land (including residential, commercial, agricultural, forest, plantations, grazing, and/organizing land), water resources, fish ponds, communal fishing grounds, annual or perennial crops and trees, or any other moveable or fixed assets acquired, possessed, restricted, or otherwise adversely affected, in full or in part, permanently or temporarily; and/or (iii) business, occupation, place of work or residence, or habitat adversely affected, permanently or temporarily, with or without displacement.

14. **Rehabilitation** – refers to assistance provided to persons seriously affected due to the loss of productive assets, incomes, employment or sources of living, to supplement payment of compensation for acquired assets, in order to achieve, at a minimum, full restoration of living standards and quality of life. Compensation for assets often is not sufficient to achieve full rehabilitation.

15. **Replacement cost** – is the method of valuation of assets, which determines the amount of compensation sufficient to replace lost assets, including any necessary transaction costs. Compensation at replacement cost is defined as follows: For agricultural land, it is the pre-project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes. For land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in vicinity of the affected land, plus the cost of any registration and transfer taxes. For houses and other structures, it is the market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes. In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset. Where domestic law does not meet the standard of compensation at full replacement cost, compensation under domestic law is supplemented by additional measures to meet the replacement cost standard. Such additional assistance is distinct from resettlement measures to be provided under other clauses in the ADB SPS 2009.

16. **Resettlement –** means that all measures should be taken to mitigate any and all adverse impacts of a project on PAP property and/or livelihood's, including compensation, relocation (where relevant) and rehabilitation as needed.

17. **Vulnerable groups** - are distinct groups of people who might suffer disproportionately or face the risk of being marginalized from the effects of resettlement and specifically include: (i) female headed households with dependents, (ii) disabled household heads, (iii) households falling under the generally accepted indicator for poverty, (iv) elderly households with no means of support and landlessness, and (v) indigenous peoples. The vulnerability of each household will depend on the impact and their socio-economic status that will be assessed as the result of detail baseline socio-economic survey during the detail measurement survey or inventory of lose assets.

#### I. DESCRIPTION OF THE PROJECT

#### 1. Tonle Sap Poverty Reduction and Smallholder Development Project-Additional Financing

2. The current Tonle Sap Poverty Reduction and Smallholder Development Project is designed to improve the living standards of an estimated 1.75 million rural Cambodians living in 196 communes within five provinces (Banteay Meanchey, Siem Reap, Kampong Thom, Kampong Cham, and Tbong Khmum) along the East-West corridor stretching from Vietnam in the east to Thailand in the West. The project has been a foster community driven development through investments in the improvement of productivity, rural infrastructure and capacity development in the 196 communes in the selected five provinces. The Ministry of Agriculture, Forestry and Fisheries, and the National Committee for Sub-National Democratic Development Secretariat are the executing agencies. The Council for Agricultural and Rural Development is the chair of the project steering committee which is to provide policy and strategic guidance to the project. The Tonle Sap Poverty Reduction and Smallholder Development Project aims to impact the livelihoods in the target communes within the five provinces in the Tonle Sap Basin so that these are improved by 2020. The proposed outcome is an increase in agricultural productivity as well as an improved access to markets in these 196 communes within the Tonle Sap Basin. Given the previous successes of the Tonle Sap Poverty Reduction and Smallholder Development Project and the persisting poverty in the Tonle Sap Basin, both the executing agencies have requested ADB's support in the form of additional financing in order to scale up the current project activities. Furthermore, by using the additional financing modality the previous successes can be built upon, and the use of the project's current resources can be optimized.

#### A. Impacts, Outcome, and Outputs

1.

2. The additional financing will scale up project activities in the original five provinces and the additional two provinces. It will also change the original project scope by enhancing climate and disaster resilience. The aggregate impact will be livelihoods in target communes and climate resilience in seven provinces in the Tonle Sap Basin improved. The aggregate outcome will be agricultural productivity increased, climate and disaster resilience strengthened, and access to markets improved in 271 communes in seven provinces in the Tonle Sap Basin.

3. Output 1: Rural productive infrastructure and livelihood improved with capacity in disaster risk management enhanced. The additional financing will focus on climate- and disaster-resilient roads and irrigation schemes. It will rehabilitate an additional 450 kilometers of roads and upgrade irrigation infrastructure for an additional 6,000 hectares of land to allow for at least two crops per year. Infrastructure subprojects will also be registered in the national asset inventory to ensure O&M beyond the additional financing implementation period. The existing 1,241 LIGs will be strengthened and an additional 750 LIGs will be established. An LIG association will also be established with financial contribution from LIG members themselves to improve the group sustainability. Further, DRM in target communes will be strengthened through training on identifying, planning, and implementing disaster risk reduction (DRR) measures, including incorporating DRR considerations in infrastructure subprojects.

4. Output 2: Enabling environment for increased agricultural productivity, diversification, and climate resilience created. Training on climate-smart agriculture practices will be provided through 200 paddy selling groups, LIGs and market improvement groups. Production of four climate-

resilient rice seed varieties will be promoted upon confirmation of market demand. Beyond production, the additional financing will also improve value addition for rice, vegetables, and chicken value chains through (i) establishing multistakeholder value chain platforms, (ii) establishing 364 market improvement groups, (iii) strengthening 103 existing small-scale agribusinesses, and (iv) establishing at least a further 97 agribusinesses.

5. Output 3: Project management strengthened. The existing executing agencies will continue to manage the project. Support in project management will continue for project staff at national, provincial, district, and commune levels. Consulting services and special service providers' support will be extended or recruited as required.

#### B. Small Scale Irrigation Subproject in Lvea Commune

#### 1. Objectives

3. Lvea Commune Committee has identified rehabilitation of irrigation canals as a high priority. The water source for the canals is the Kampong Trabaek river. The river is a distributary of the Mekong.

4. The subproject investment is aimed at improving farm productivity and diversification of 320 beneficiary households. Such an investment is expected to help the beneficiary households to reduce their poverty and improve their livelihoods and living conditions. Potential land area that will be served by the would-be-rehabilitated irrigation scheme was estimated to be 305 ha. The scheme will provide supplementary irrigation to wet season crop, especially wet season paddy rice, during the monsoon season (May-October), and full irrigation for a second and a third non-photosensitive, short-maturity crop during the dry season (November-April).

5. The subproject will bring about three main benefits to the target households: (i) certain improvement of wet season rice yield due to availability of water for supplementary irrigation during the monsoon season if and when prolonged dry spell would occur, (ii) diversified dry season crops (incl. lotus, vegetables) with availability of water for irrigation, and (iii) diversification into high-value farm enterprises (esp. improved practice of native-breed chicken keeping, fish growing, frog raising and giant prawn culture) because of support to LIGs.

#### 1. Existing Facilities

6. In 2013 the Republic of China built five pumping stations along the Kampong Trabaek river, each with 2 large irrigation pumps and two large drainage pumps. Some poor quality primary and secondary canals were provided with the aim of eventually irrigating a total of 12,000 ha on the flood plain either side of the river. These mostly follow the alignment of old canals developed in the Pol Pot era. MOWRAM to has built an extension from one of the Chinese built primary canals (Canal No. 10) to the area in Lvea where the Commune Council has requested assistance with canal rehabilitation. This was not part of the original scheme design.

7. The Republic of China has also provided a dyke along the south bank of the Kampong Traebek river to reduce the risk of flooding. The proposed subproject area is in the area protected.

8. Neither PDWRAM nor the farmers are able to pay the electricity bills for all of the main pumps and a local businessman pays the electricity bill for one or two of them. Farmers generally have to pump water from the canals as the water level is below ground level, which is costly.

9. River flow levels are always much lower between January and June. In some years, it is virtually none existent by April. Under these conditions water will probably be available for supplementary irrigation in the rainy season and to irrigate a second crop. If the main scheme is sorted out, there may be insufficient water, but it is likely to be some years before the Chinese system is developed further.

#### 2. **Proposed Improvements**

10. Under this subproject it is proposed to rehabilitate 3 canals with a total length of 5.08km. Water will come from primary and secondary canals supplied by Pumping Station No. 2 on the Traebek River. These are:

- (i) A 1 km canal north of Highway 1 in Thnaot Chros village, flowing south from a secondary canal,
- (ii) A 3 km long canal south of Highway 1, starting at an intake gate on main canal no.
   10 and flowing eastward through Boeung Snao and Takork villages and finishing at a ruined Pol Pot era gate;
- (iii) A 1.08 km long canal south of Highway 1, starting at a main canal no. 10 (a culvert appears to go from the canal under a bund to the start of the canal but is blocked) and flows westward through Peany village. A 1 km canal was proposed, but after the initial 400m the entire area is under paddy and to continue through this area would lead to resettlement issues. Figure 1.1 shows the subproject canals in relation to the primary canal and the pumping station on the Traebek River.



Figure 1: Location of Lvea Commune Irrigation Subproject Components

11. Expected increases in dry season cropping areas from the rehabilitation of these three secondary canals is 344 ha; i) 60 ha at Thnaot Chros Village, ii) 224 ha at Boeung Snao and Takork Villages, and 60 ha at Peany Village.

| Table 1: Proposed Canals for Rehabilitation in Lvea Commune, Preah Sdach District Prey |
|--|
| Veng Province – Coordinates, Length and Total Width. Base From The IOL Team            |

| Lvea Canals proposed for rehabilitation/ construction | Lvea Canals proposed for Location rehabilitation/ construction |          | Approximate<br>canal length<br>(km) | Width of proposed<br>canal including<br>banks (m) using<br>ROW |    |
|---|--|----------|-------------------------------------|--|----|
|   |  | Latitude | Longitude                           |  |    |
| Canal 1 Thnaot Chros village                          | Start  | 11 10 55 | 105 24 49                           | 1  | 15 |
|   | End  | 11 10 22 | 105 24 49                           |  |    |
| Canal 2 Boeung Snao/Takork                            | Start  | 11 09 54 | 105 23 57                           | 3  | 20 |
| village   | End  | 11 09 55 | 105 23 40                           |  |    |
| Canal 3 Pea Ny village                                | Start  | 11 09 54 | 105 23 56                           | 1.08   | 15 |
|   | End  | 11 09 55 | 105 23 23                           |  |    |

12. The specifications of the subproject comprise works to improve the secondary canals. The proposed works are summarized in Table 2.

| une |
|-----|
| l   |

| Description                                       | Unit | Quantity |
|---|------|----------|
| Canal Section 1 (Thnaot Chros Village)            |      |          |
| Canal earthwork (rd 0+000 to 1)                   | Km   | tba      |
| Improvement of cross regulator                    | nos  | tba      |
| Cross regulator (new)                             | nos  | tba      |
| Offtake type III (1 cell box culvert), new        | nos  | tba      |
| Improvement works for offtake type III(b)         | nos  | tba      |
| Side escape                                       | nos  | tba      |
| Foot bridge                                       | nos  | tba      |
| Canal Section 2 (Boeung Snao and Takork Villages) |      |          |
| Canal earthwork (rd 0+000 to 3)                   | Km   | tba      |
| Improvement of cross regulator                    | nos  | tba      |
| Cross regulator (new)                             | nos  | tba      |
| Offtake type III (1 cell box culvert), new        | nos  | tba      |
| Foot bridge                                       | nos  | tba      |
| Canal Section 3 (Peany Village)                   |      | ·        |
| Canal earthwork (rd 0+000 to 0+400)               | Km   | tba      |
| Improvement of cross regulator                    | nos  | tba      |
| Cross regulator (new)                             | nos  | tba      |
| Offtake type III (1 cell box culvert), new        | nos  | tba      |
| Foot bridge                                       | nos  | tba      |

Source: Bills of Quantities prepared by the PPTA survey team, May, 2017.

13. The feasibility study design considered components of a irrigation scheme, which would require no private land acquisition. However, some household is found using the RoW for rice cultivation and several fruit trees along the RoW are affected, field visit during the conduct of Inventory of Loss by the PPTA team. This will have to be reviewed in detail during the detailed design stage.

14. The land acquisition, resettlement and compensation (LARC) related fieldwork for this subproject took place in April 2017 and included joint transect walk of participating commune/village members, NCDDS-PD, and PPTA engineer team. These participants showed always their high motivation to cooperate with the subproject.

#### A. Permanent Land Acquisition

15. The due diligence assessment on resettlement aimed at (i) using available public land rather than acquiring land for sites, and (ii) using the public RoW to the extent possible, so that there are no impacts on owners and/or users of affected assets. This has been optimized by the due diligence consultant as a result of IOL fieldwork and surveys.

16. Using the existing ROW as mentioned in Table 1 above, the IOL team has identified 64 affected households small strip of land use mainly for rice cultivation. Among those, 21 affected households will permanently loss of small strip of land partially from their total agricultural land holding, eight affected households will be affected partially to residential land part of their total land holding, one affected household will partially be affected to both residential cum agricultural land use. In addition, among 64 affected households, two affected households will partially be affected to their extended roof and a pig cage, and 32 affected households will be affected to a single and or several fruit trees along the ROW. See Table 3 for number of affected households breaking down by sections.

| Table 3: Number of affected household according to the type of uses of land identified |
|--|
| during the IOL in April 2017   |

| Proposed Canal | No. AHs<br>Affected only      | Classification o | f affected land a<br>use (No.Ahs) | ccording to type of              |              |
|----------------|-------------------------------|------------------|-----------------------------------|----------------------------------|--------------|
| Sections       | structures and<br>fruit trees | Residential      | Agricultural                      | Both residential cum agriculture | Total<br>AHs |
| 1 Km Canal     | 2                             | 4                | 20                                | 1                                | 27           |
| 3 Km Canal     | 32                            | 4                | 1                                 | 0                                | 37           |
| 1.08 Km Canal  | 0                             | 0                | 0                                 | 0                                | 0            |
| TOTAL 5.08 Km  | 34                            | 8                | 21                                | 1                                | 64           |

#### B. **Temporary Land Acquisition**

17. For any temporary site installation or other area the contractor will have to propose in a site installation and access plan and obtain approval from the Project Implementation Unit (PIU). Where possible, public land will be used for temporary land use. The contractor shall rent the private space with agreed rental fee. Both private and public space shall be returned in the same

or improved condition compared with pre-project situation. Through a transparent and contractual approach, the Employer will provide the contractor with the project's land acquisition and compensation principles to ensure that (i) official compensation rates are applied, (ii) reinstatement of affected assets contractually defined, (iii) consultation takes place, (iv) the grievance mechanism is followed, (v) the Environmental Management Plan (EMP) is applied, and (vi) other items specified are complied with.

#### C. Affectedness

18. Selected items are listed in Table 4 and indicates, that there are assets affected and with the status affected owners and/or users reported as totally voluntarily donated to the project. More details are given in the LARC fact finding and screening of Appendix 1. Pictured impressions are shown in Appendix 2. And the confirmation of voluntary donation to the project shown in Appendix 4.

|   | Item                         | Cases and Description   |
|---|------------------------------|---|
|   |                              | <ul> <li>No private land affected to report</li> </ul>  |
|   |                              | <ul> <li><u>8 Ahs affected</u> to the residential land use. <u>2 AHs out of 8 Ahs</u> identified of<br/>having affected areas more than 5% of total land holding but not more than<br/>10%. <u>One AH affected the residential land use &gt; 10% but the remaining</u><br/>areas still viable for living and confirmed for voluntary donation.</li> </ul> |
| 1 | Loss of land uses            | <ul> <li><u>21 Ahs affected</u> to agricultural land use. Of which <u>1 Ahs</u> identified of having<br/>affected areas more than 5% of total land holding but not more than 10%.</li> </ul>  |
|   |                              | <ul> <li><u>1 Ah</u> affected to both residential and agricultural land use but it is less than<br/>5% of total land holding.</li> </ul>  |
|   |                              | <ul> <li>All affected Ahs confirmed they already signed on the voluntary donation forms.</li> </ul>   |
|   |                              | <ul> <li>No cases of primary/secondary structures on private land to report.</li> </ul>   |
| 2 | Loss of houses / structures  | <ul> <li>In public RoW, one extended roof and 1 pig cage will be affected. The<br/>asset owners already signed the voluntary donation form.</li> </ul>  |
| 3 | Loss of crops                | <ul> <li>No cases of damaged crops to report.</li> </ul>  |
| 4 | Loss of trees                | <ul> <li><u>341 fruit trees</u> were identified; 175 mature palm trees, 24 mango trees, 16<br/>banana trees, 18 Pring trees, 1 papaya tree, and 3 Krasang Trees. All<br/>affected fruit trees were already signed for voluntary donation to the<br/>project.</li> </ul>   |
| 5 | Loss of services / resources | <ul> <li>No cases of loss of services and resources expected.</li> </ul>  |
| 6 | Loss of Income               | No cases expected.  |
| 7 | Relocation                   | No cases to report.   |
| 8 | Vulnerability support        | <ul> <li>No cases of physical or economic displacement to report.</li> </ul>  |

#### Table 4: Summarized LARC Screening Overview

#### III. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

#### A. Requirements

19. In general a meaningful consultation is a process that (a) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (b) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (c) is undertaken in an atmosphere free of intimidation or coercion; (d) is gender inclusive; (e) enables the incorporation of all relevant views of affected people and other stakeholders into project design and implementation; and (f) ensures the participation of AHs in planning, implementation, and monitoring and evaluation of resettlement programs.

20. For this subproject a preliminary inventory of loss and a survey of all AHs were carried out subsequent to the feasibility study during due diligence assessment determining a record of preliminary measurements of type and level of loss related to AHs' eligibility of entitlements. These steps are embedded in a transparent consultation process with further public village meetings both during detailed design and construction stages as defined by RF of the TSSD-AF. The APs have been and will be properly informed of all subproject activities. The information includes the specific activities, schedules, impacts and mitigation measures. The information is provided through public meetings led by PIU, commune authorities and/or committees as required in the consultation and participation section of the RF.

#### B. Achievements

21. The disclosure of LAC information, consultation and participation of residents in the subproject took place in 2 public meetings combined for 4 Villages in March 2017. The contacted 58 commune residents (43 female and 15 male) have a good understanding about the subproject and its land acquisition related aspects. The contacted villagers (i) showed always high interest in the subproject and repeatedly mentioned their expectations towards the subproject, as water supply to service of at least two-time cropping are topics of high importance and will benefit them directly for household income improvement.

22. Attending officials, as well as village representatives, households and families have been informed about the subproject in general and LARC aspects in particular. The subproject ensured that APs and other stakeholders have (a) obtained information about LARC aspects, and (b) opportunities to participate in the LARC process.

23. An overview about the public commune meeting is given in Appendix 3. The dissemination and consultation activities are performed as an integral part of the resettlement planning process to inform the concerned villages about LARC. During LARC related fieldwork, the staff of EA and IA, as well as the PPTA consultants initially provided information about participation of affected persons in land acquisition activities, the involvement of district and village leaders in the overall process, type of compensation and mitigation measures.

#### IV. INSTITUTIONAL ARRANGEMENT

#### A. **Project Organizations and their Roles**

24. NCDDS, which hosts the Project Coordination Office (PCO), has experience in safeguards implementation. However, the NCDDS staff need further support in the procedures for monitoring and recording environmental and social safeguards activities. Staff of other implementing agencies also need continued support, specifically during the first year of the implementation.

25. Steering Committee (PSC). The project would be supervised by a Steering Committee chaired byCARD. This committee would provide the strategic direction and guidance in the management and operations of the project, and would include members from relevant government institutions involved in rural and urban development programs. Other institutions and individuals from academia, NGOs and the private sector would also be invited to provide advice to the committee. PSC will ensure that safeguard activities under the TSSD-AF will be carried out in compliance with the provisions set forth in this LARF.

26. Project Coordination Office (PCO) will provide overall management and operation of the project would be led by NCDDS. The PCO would be headed by a Project Manager and composed of a team of specialists responsible for project operations, procurement, financial management, social and environmental safeguards, and M&E activities.

27. General Department of Resettlement (GDR) of MEF: LARF is required reviewing and approval by MEF prior to submitting to the Asian Development Bank for no objection. If there are involuntary resettlement impacts caused by the subprojects, and resettlement plan is required, NCDDS will request the GDR to deal with resettlement impacts. The MEF, through designated Inter-Ministerial Resettlement Committee (IRC) and its Working Group (WG), will work closely with Provincial Resettlement Sub-Committee (PRSC) for coordinating resettlement issues where the subproject is located and have resettlement impact. In this case, an ad-hoc Provincial Resettlement Sub-Committee Working Group (PRSC-WG) will be established as secretariat to PRSC. In this case, NCDDS through its PSC will prepare the resettlement plan and submit to MEF through DGR for review and approval prior to submitting to the Asian Development Bank for no-objection basis. GDR will take leading role in resettlement plan implementation.

28. Commune/Sangkat Council is in charge of implementing for all selected subprojects and will comply with guidelines and forms as per C/SF PIM.

#### B. Small Scale Irrigation Subproject in Lvea Commune

#### 1. Completed LARC tasks during PPTA Phase

29. During the PPTA phase, the due diligence consultant performed its resettlement related tasks between Feb and May 2017. This includes among others:

- (i) Continuous coordination with EAs and IAs.
- (ii) Reconnaissance visits to the subproject areas in Feb 2017.
- (iii) Presenting findings in the Mid-term Workshop, 28 Mar 2017.
- (iv) Planning and conducting public consultation and transect walk in Feb and March 2017. Appendices 1 to 3 provide details.
- (v) Presenting the findings in the Draft Final Report Workshop, 2 May 2017.
- (vi) Analyzing collected data and preparing resettlement documents.

#### 2. Next LARC Tasks during Implementation Phase

30. In general, the planning and executing of LARC tasks are mainly related to the preconstruction phase containing (a) detailed engineering design, (b) bid preparation & approval and (c) procurement, and have to be complete before start of the construction phase.

31. This means in particular for this subproject that at the earliest stage of the period of 2 quarters (Q2 and Q3) between April to Sept 2018 as defined by item No.3 of the implementation schedule (see figure above), the detailed design has to be verified concerning any requirements of land or related assets, and to confirm, that there will be no need for acquisition of private land. However both changed layout of the subproject and/or adjustment of the feasibility study design can lead to a change of subproject categorization and change from Category C to B of ADB defined project category on involuntary resettlement, and would make the preparation of a RP at that stage of the project implementation if necessary.

32. CC, IRC, and PMU will ensure that contractor will not be issued notice to commence (notice to mobilize) to begin construction work unless (a) it has been confirmed that the subproject is Category C, or otherwise (b) a RP has satisfactorily been completed, approved, and compensation payment made; (c) ensured that income restoration program is in place for seriously AHs; and (d) areas required for civil works are free of all encumbrances.

| IMPACTS ON LAND AND OTHER ASSETS AND RELATED FACILITIES/SERVICES |     |    |   |  |  |  |  |  |  |
|--|-----|----|---|--|--|--|--|--|--|
| GENERAL ASPECTS  | YES | NO | EXPLANATIONS  |  |  |  |  |  |  |
| Requirement of land acquisition                                  | х   |    | Using the reserved ROW as mentioned in table 2.1  |  |  |  |  |  |  |
| Sites of land acquisition  |     | х  | Required sites are governmental land.   |  |  |  |  |  |  |
| Easement utilized within existing Row                            |     | х  |   |  |  |  |  |  |  |
| Permanent land acquisition                                       | x   |    | Small strip of land use mainly for rice cultivation along the reserved ROW.   |  |  |  |  |  |  |
| Temporary land acquisition                                       |     | х  | If necessary for construction, then contractor to arrange.  |  |  |  |  |  |  |
| Change of ownership of land                                      |     | х  |   |  |  |  |  |  |  |
| Change of usage of land  |     | х  |   |  |  |  |  |  |  |
| Loss of Assets   | YES | NO | DESCRIPTION   |  |  |  |  |  |  |
| Loss of residential land   | x   |    | <ul> <li>No private land affected to report</li> <li><u>8 Ahs affected</u> to the residential land use. <u>2</u><br/><u>AHs out of 8 Ahs</u> identified of having affected<br/>areas more than 5% of total land holding but<br/>not more than 10%. <u>One AH affected the</u><br/><u>residential land use &gt; 10% but the remaining</u><br/><u>areas still viable for living and confirmed for</u><br/><u>voluntary donation.</u></li> </ul> |  |  |  |  |  |  |
| Loss of agricultural land  | x   |    | <ul> <li><u>21 Ans anected</u> to agricultural rand use. Of which <u>1 Ahs</u> identified of having affected areas more than 5% of total land holding but not more than 10%.</li> <li><u>1 Ah</u> affected to both residential and agricultural land use but it is less than 5% of total land holding.</li> <li>All affected Ahs confirmed they already signed on the voluntary donation forms.</li> </ul>                                    |  |  |  |  |  |  |
| Loss of residential structures                                   |     | х  |   |  |  |  |  |  |  |
| Loss of productive structures                                    | x   |    | In public RoW, one extended roof and 1 pig cage will be affected. The asset owners already signed the voluntary donation form.  |  |  |  |  |  |  |
| Loss of trees /crops   | x   |    | <u>341 fruit trees</u> were identified; 175 mature palm trees, 24 mango trees, 16 banana trees, 18 Pring trees, 1 papaya tree, and 3 Krasang Trees. All affected fruit trees were already signed for voluntary donation to the project.   |  |  |  |  |  |  |
| EFFECTS ON COMMUNAL/PUBLIC FACILITIES                            | YES | NO | DESCRIPTION   |  |  |  |  |  |  |
| Loss of access to facilities                                     |     | х  |   |  |  |  |  |  |  |
| Loss of access to services                                       |     | х  |   |  |  |  |  |  |  |
| Loss of community assets/ties                                    |     | х  |   |  |  |  |  |  |  |
| Loss of cultural / historical properties                         |     | х  |   |  |  |  |  |  |  |
| IMPACTS OF PEOPLE  |     |    |   |  |  |  |  |  |  |
| PHYSICAL DISPLACEMENT  | YES | NO | EXPLANATIONS  |  |  |  |  |  |  |
| Replacement of houses  |     | х  |   |  |  |  |  |  |  |
| Relocation of households   |     | х  |   |  |  |  |  |  |  |

#### **APPENDIX 1: LARC SCREENING & IR PROJECT CATEGORY**

| ECONOMIC DISPLACEMENT                         |            |                             |         | NO                            | Explanat                         | IONS                 |  |  |  |
|---|------------|-----------------------------|---------|-------------------------------|----------------------------------|----------------------|--|--|--|
| Loss of incomes                               | 1          |                             |         | х                             |                                  |                      |  |  |  |
| Loss of business                              | ses/enter  | orises                      |         | х                             |                                  |                      |  |  |  |
| Loss of access t                              | o income   | sources                     |         | х                             |                                  |                      |  |  |  |
| Loss of access t                              | o natural  | resources                   |         | х                             |                                  |                      |  |  |  |
| AFFECT  | ED HOUS    | EHOLDS / PEOPLE             | YES     | NO                            | CASES AND N                      | UMBERS               |  |  |  |
| Number of AH/A                                | P          |                             |         | х                             |                                  |                      |  |  |  |
| Vulnerable AH/A                               | νP         |                             |         | х                             |                                  |                      |  |  |  |
| Severely AH/AP                                |            |                             | х       | UARS                          |                                  |                      |  |  |  |
| Non-owning AHs                                | s (users c | of assets)                  |         | х                             |                                  |                      |  |  |  |
| FINDINGS                                      |            |                             |         |                               |                                  |                      |  |  |  |
|   | Ca         | tegory                      |         | Categorization                |                                  |                      |  |  |  |
| А   |            | Not applied by TSSD-<br>AF  |         |                               | Feasibility Study                | $\checkmark$         |  |  |  |
| В   |            |                             |         |                               | Design and Tendering             |                      |  |  |  |
| C 1   |            |                             |         | Design, Construct and Install |                                  |                      |  |  |  |
| Conclusion: There are minor impacts of assets |            |                             | and the | eir own                       | ing affected households and/or u | users                |  |  |  |
| Note:   | The list   | ed items are in accordance  | with ch | necklist                      | s as defined by ADB guidelines   |                      |  |  |  |
| Abbreviation                                  | AP = af    | fected person(s); AH = affe | cted ho | ouseho                        | ds; ha = hectare; km = kilomete  | r; m3 = cubic meter; |  |  |  |

#### APPENDIX 2: PICTURED IMPRESSIONS FROM THE SUBPROJECT AREA



#### APPENDIX 3.1: OVERVIEW AND SUMMARY OF PUBLIC LARC CONSULTATION MEETING

| Subproje  | Subproject: Rehabilitation of irrigation scheme |                          |              |  |  |  |  |  |  |  |  |
|-----------|---|--------------------------|--------------|--|--|--|--|--|--|--|--|
| DATE      | LOCATION AND TIME                               | FACILITATING ACTORS      | PARTICIPANTS | DISCUSSION / RESPONSES / OUTCOMES FOLLOW-UP ACTIONS WITH RESPONSIBILITY  |  |  |  |  |  |  |  |
| 07        | Commune/s: Lvea                                 | PPTA consultant staff    | Female: 11   | Presentation:  |  |  |  |  |  |  |  |
| March     | Venue: Tnaot Chros Village                      | - Ms. Chansouk Insouvanh | Male: 8      | <ul> <li>Introduction about the TSSD-AF</li> </ul>   |  |  |  |  |  |  |  |
| 2017      | Time: 2:30 to 3:30PM                            | - Mr. Tem Sereivouth     | Total: 19    | <ul> <li>Safeguard requirement under ADB SPS</li> </ul>  |  |  |  |  |  |  |  |
|           | Photo   | - MIL HENG BOILIN        |              | <ul> <li>Confirmation on the need of development within the commune/discussion<br/>on willingness for donation</li> </ul>      |  |  |  |  |  |  |  |
|           |   |                          |              | Asking for support for the proposed irrigation subproject  |  |  |  |  |  |  |  |
|           | B BREW SHARWAR SHARES                           |                          |              | Discussion on SES condition of the people  |  |  |  |  |  |  |  |
|           |   |                          |              | Comments – Questions – Answers:  |  |  |  |  |  |  |  |
|           |   |                          |              | <ul> <li>Q1: What is the proposed canal width in this village?</li> </ul>  |  |  |  |  |  |  |  |
|           |   |                          |              | • Q2: If take more than 7.5 meters each side, my house will be affected.   |  |  |  |  |  |  |  |
|           |   |                          |              | <ul> <li>Q3: Will the road along the canal to be built? We atraid without road we can not transport crop from field</li> </ul> |  |  |  |  |  |  |  |
|           |   |                          |              | • Q4: I can't lose my land if the project acquires bigger land.  |  |  |  |  |  |  |  |
|           |   |                          |              | • Q5: Will the project provide famers with good rice seeds? Since the project  |  |  |  |  |  |  |  |
|           |   |                          |              | is to improve agricultural project, there should be provision of good seeds to   |  |  |  |  |  |  |  |
|           |   |                          |              | people.  |  |  |  |  |  |  |  |
| 08        | Commune/s: Lvea                                 | PPTA consultant staff    | Female: 32   | Presentation:  |  |  |  |  |  |  |  |
| March     | Venue: Boeng Snao village                       | - Ms. Chansouk Insouvanh | Male: 7      | Introduction about the TSSD-AF   |  |  |  |  |  |  |  |
| 2017      | Time: 8:30 to 10:30AM                           | - Mr. Tem Sereivouth     | Total: 39    | <ul> <li>Safeguard requirement under ADB SPS</li> </ul>  |  |  |  |  |  |  |  |
|           | Photo   | - Mr. Heng Bonny         |              | <ul> <li>Confirmation on the need of development within the commune/discussion<br/>on willingness for donation</li> </ul>      |  |  |  |  |  |  |  |
|           |   |                          |              | Asking for support for the proposed road subproject  |  |  |  |  |  |  |  |
|           | A REAL PAR OF                                   |                          |              | Discussion on SES condition of the people  |  |  |  |  |  |  |  |
|           |   |                          |              | Comments – Questions – Answers:  |  |  |  |  |  |  |  |
|           |   |                          |              | Q1: Will the rehabilitation of canal install the culvert?  |  |  |  |  |  |  |  |
|           |   |                          |              | • Q2: Please rehabilitate the canal as big as people voluntary donate to the   |  |  |  |  |  |  |  |
|           |   |                          |              | project. Experience from other commune showed that people donate bigger  |  |  |  |  |  |  |  |
|           |   |                          |              | farm areas.  |  |  |  |  |  |  |  |
|           |   |                          |              | • Q3: From the engineer design, there should be a proper design to let water   |  |  |  |  |  |  |  |
|           |   |                          |              | flow easily in to the farmland.  |  |  |  |  |  |  |  |
|           |   | Totolo                   |              |  |  |  |  |  |  |  |  |
|           |   | i utais                  |              | 4  |  |  |  |  |  |  |  |
| NU        | mber of meetings:                               | Participant              | .S:          |  |  |  |  |  |  |  |  |
| 2 Female: |   |                          | 3            |  |  |  |  |  |  |  |  |

| Subproje | Subproject: Rehabilitation of irrigation scheme |                     |              |   |  |  |  |  |  |  |  |  |  |
|----------|---|---------------------|--------------|---|--|--|--|--|--|--|--|--|--|
| DATE     | LOCATION AND TIME                               | FACILITATING ACTORS | PARTICIPANTS | DISCUSSION / RESPONSES / OUTCOMES FOLLOW-UP ACTIONS WITH RESPONSIBILITY |  |  |  |  |  |  |  |  |  |
|          |   | Male: 15            | 5            |   |  |  |  |  |  |  |  |  |  |
|          |   | Total: 58           | 3            |   |  |  |  |  |  |  |  |  |  |

| Commune/s: L  | vea   |                        |  |  |  |               |  |  |   |  |  |                                |  |        |
|---|---|------------------------|--|--|--|---------------|--|--|---|--|--|--------------------------------|--|--------|
| Venue: Tnor C   | Chroh Villag  | le, Lvea Com           | mune, Pre  | eah Sdach  | n District, Pre  | ey Veng Provi | ince   |  |   |  |  |                                |  |        |
| Date: 07 Marc   | ch 2017   |                        |  |  |  |               |  |  |   |  |  |                                |  |        |
| Pa  | articipants:  |                        | Participants: Villagers  |  |  |               |  |  |   |  |  |                                |  |        |
|   | Total 12 (female:4 and male:8)  |                        |  |  |  |               |  |  | Tota  | al 19 (fem                             | ale:11 a   | and male:8)                    |  |        |
| Ag<br>ma<br>Øeb   | មេហ្គីនម្លាលសម្រជុំ<br>Attendance List at Meeting<br>កិច្ចប្រជុំសាសរណៈ ស្តីពីរម្យសង កាត់បន្ថយភាពក្រីក្រ និងអង់វេជ្ជាន៍ពសិការពួកតពូចនៅតំបន់ទណ្ឌសាប (នំណាត់កាល ២)<br>Public Consultation Meeting for<br>Torie Sap Poverty Reduction and Smalhoiders Development Project (TSSD-AF)<br>កាលឃើរថ្លូម/ Date : ថ្ងៃម <u>ី OT</u> ថ្លៃ <u>m</u> ឆ្នាំ២០%ៅ មើរដែ/ Time: <u>QL3D ស្នា,</u> ដល់/ To <u>3330 ស្រ</u><br>ទីតាំង/ Located in: Lupa Consumer ស្លឹស្តីជានៅ៖ ភូមិ/ Vilago ស្លា ឃុំ Commune Lupa .   |                        |  |  |  |               |  | adonanan: Of<br>nagos be az<br>sajanti<br>mage adaran<br>sage<br>sajanti<br>sage   | ungaanna<br>fui<br>ung<br>ung<br>ung<br>kac | 50000000000000000000000000000000000000 | ເພຍາະຄູຍ<br>ເພຍາະຄູຍ<br>ເທິນ<br>ເທິນ<br>ເທິນ<br>ເທິນ<br>ເທິນ<br>ເທິນ<br>ເທິນ<br>ເທິນ | 0104448.80<br>                 | Barminnas inj<br>no 2<br>Martin<br>Agnunda |        |
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| LUI<br>No.  | Mane Se   | ទ ពួរពទី<br>x Position | ររង្គភាណក្តាបីខ<br>Organization  | សេខទូសេច្ន<br>Phone Number   | ນາການອາ<br>Signature   |               | 3  | 5003 AME   | ~   |  |  | 0884183486                     | 1000                                       |        |
| 1<br>2<br>3<br>4<br>5<br>6<br>7<br>7<br>8<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>9<br>10<br>10<br>11<br>12<br>23<br>14<br>15<br>15<br>16<br>15<br>16<br>15<br>16<br>12<br>7<br>18<br>8<br>19<br>20 | 2 - ma<br>2 - ma<br>2 - ma<br>2 - ma<br>2 - ma<br>2 - ma<br>- | Bra Bro al             | Contente<br>Contente<br>Anora ante<br>Anora ante<br>Anor | 01044455<br>CICUMISTI<br>010122660<br>03532444<br>01012625<br>015340136<br>015340136<br>015345<br>015345<br>015518747<br>012518747 | The second secon |               | 4<br>5<br>4<br>7<br>8<br>9<br>10<br>10<br>12<br>12<br>13 | 2" 24<br>st ine<br>44 22<br>cash 200<br>cash |   | *<br>*<br>*<br>*                       | *<br>*<br>*<br>*   |                                |  |        |
|   |   |                        |  |  |  | No<br>No      | te 1: Show<br>te 2: The c<br>team                        | n is the f<br>omplete<br>and com   | irst p<br>and on<br>mun                     | age out o<br>original se<br>e council  | f 2 atter<br>et of atte  | ndance sheets<br>endance sheet | s is with the                              | e PPTA |

#### APPENDIX 3.2: ATTENDANCE LISTS OF PUBLIC LARC CONSULTATION MEETING

| Participants: Facilitating Commune, ia, ppta consultant  | Participants: Villagers   |
|--|---|
| Total 8 (female:1 and male:7)  | Total 39 (female:32 and male:7)   |
| មះរីរឹមអ្នហេទម្រក្តិ<br>Attendance List at Meeting<br>កិច្ចប្រពុំសាធាតរោះ ស្តីពីតម្លោង កាត់បន្ថយការប្រើគ្នា និងអមិវត្តរកែហិកម្មខ្នាកពូចនៅតំបន់ទទួសាប (ជំណាក់កាល ២)<br>Puble Consultation Meeting for | មញ្ជីខត្តមានប្រជាវិជនប្រជាជាក្លាល<br>កិច្ចប្រជុំសាធារណៈ ស្ថិតិតម្លោងកាត់បន្ថយភាពក្រីក្រ និងអភិវឌ្ឍន៍កសិកម្មពួកចូលនៅតំបន់ទន្លេសាប (ជំណាក់កាល ២)<br>កាលបតិក្លុច ថ្ងៃទី <u> </u>   |
| Torie Sap Poverty Reduction and Smallholders Development Project (TSSD-AF)   | ยาว เขกับ: พ.อ. นิลิ กรี เกระดับรูป ขั้นคลคระ   |
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#### Appendix Attachment 3.3: Attendance lists of public consultation meetings

APPENDIX 4: CONFIRMATION OF VOLUNTARY DONATION OF AFFECTED ASSET

កំណត់ហេតុប្រជុំដើម្បីបញ្ណាក់ទៅលើការបរិច្ចាកទ្រព្យដែលប៉ះពាល់

For Irrigation Subproject in Ta Kork Village, Lvea Commune

ព្រះរាជាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ

3

<u>កំណត់ហេតុប្រជុំ</u>

គម្រោងកាត់បន្ថយភាពក្រីក្រ និងអភិវឌ្ឍន៍កសិកម្មខ្នាតតូចតំបន់ទន្លេសាប(វគ្គ២)

ស្តីអំពី៖ ការប្រជុំនៃការបញ្ហាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា

ម៉ោង ២ និង ០០ នាទី រសៀល ដល់ ម៉ោង ២ និង ៣០ នាទីរសៀល

Minute of Meeting for confirming the voluntary donation of affected assets

សម្រាប់គម្រោងស្តារប្រព័ន្ធធារាសាស្រ នៅភូមិតាគោក ឃុំល្វា

ថ្ងៃនេះខ្ញុំបាទរួមជាមួយអាជ្ញាធរភូមិឃុំ ធ្វើការប្រជុំជាមួយបងប្អូនម្តងទៀតនេះគឺដើម្បីបញ្ចាក់ថាបងប្អូន ពិតជាមិនមានការជំទាស់ទៅលើគម្រោង ហើយព្រមបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ដូចដែលបានវាស់ទាំងនោះឲ្យទៅគម្រោងពិតមែនឬទេ។

អូចដែលបងប្អូនបានដឹង ក្រមការងារបានបញ្ចប់ ការវាស់វែងលម្អិតទៅលើប្រលាយដែលបានស្នើសុំ មានទីតាំង ស្ថិតនៅក្នុងភូមិតាគោកមានទទឹងទំហំ ២០រ៉ម័ត្រ និងបណ្តោយប្រវែង ១០១០រំម័ត្រជាស្ថារារ

ទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ទាំងនោះមានដូចជា ឲ្រុងជ្រក សំយ៉ាប របង និងដើមឈើភាគច្រើន ។ ហើយរាល់ទ្រព្យសម្បត្តិដែលប៉ះពាល់ទាំងនោះ ត្រវបានអជ្ញាធរទទួលបានស្នាមមេដៃពីប្រជាពលរដ្ឋរងផលប៉ះពាល់

ក្រមការងារបានរកឃើញថាមាន

២០គ្រសាវ

ក្រមប្រឹក្សាឃុំល្វា

ដែលនឹងរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនេះ។

ប្រជាពលរដ្ឋបានមានបញ្ចេញមតិថា ពួកគាត់សប្បាយចិត្តនៅពេលដែលមានគម្រោងស្តារប្រលាយនៅក្នុងភូមិរបស់ពួកគាត់ព្រោះវានឹងផ្តល់ផលអោយពួកគាត់អាចធ្វើស្រែបានយ៉ាងហោចណាស់២ដងក្នុង១ឆ្នាំ។ ហើយពួកគាត់លើកដៃទាំងអស់គ្នាគាំទ្រដល់គម្រោងនេះ ហើយបើសិនជាគម្រោងមានប៉ះពាល់ទ្រព្យសម្បត្តិរបស់ពួកគាត់ដូចដែលបានកត់ត្រានោះ ពួកគាត់ក៏ស្ម័គ្រចិត្តចូលរួមបរិច្ចាក ឲ្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។

អ្នកធ្វើកំណត់ហេតុ លោក តែម សេរីវុធ

កាលបរិច្ឆេទ៖ ថ្ងៃទី១៨ ខែឧសភា ឆ្នាំ២០១៧

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ដែលជាដីសាធារណៈរបរស់រដ្ឋបម្រងទុកសម្រាប់សាងសង់ប្រលាយ។

ថាស្ម័គ្រចិត្តចូលរួមបរិច្ចាកឲ្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។

សមាសភាពចូលរួម

ទីតាំងស្ថិតនៅ៖ ភូមិ តាគោក ឃុំ ល្វា ស្រក ព្រះស្តាច ខេត្ត ព្រៃជ័ង

លោក រ័ត្ន កាន ក្រុមប្រឹក្សាឃុំល្វា លោក កង វ៉ន ប្រធានភូមិតាគោក

លោក តែម សេរីវុធ ទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA

និងប្រជាពលរដ្ឋដែលរងផលប៉ះពាល់ចូលរួមចំនួន ២០នាក់ មានស្រីចំនួន ១១នាក់ (មានបញ្ជីវត្តមានភ្ជាប់ជាមួយ)

ក្រោយពីបានជួបជុំគ្នារួចមក លោក សេរីវុធ ជាទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA បានលើកឡើងថា៖

តាមការវ៉ាស់ជ័ង

លោក កង វ៉ន

ប្រធានភូមិតាគោក

លោក វ័ត្ន កាន

### មញ្ជ័នដូសានទ្រជុំ

List of attendants for the meeting

### នម្រោទ៖ ភាត់ចន្ថយតាពត្រីត្រ និច អតិនឌ្ឍន៍គសិកម្មខ្នាតតូចនៅតំចន់ជន្លេសាម(ដំណាក់ភាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) កិច្ចប្រជុំស្តីពី៖ ការបញ្ហាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

| កាលបរិច្ឆេទ/ Date   | : ថ្ងៃទី <u>18</u> ខែ <u>០5</u> ឆ្នាំ២០១៧ | ម៉ោង/ Time: <u>៤ : ០០</u> ដល់/ To <u>11 : 30</u> | _ |
|---------------------|---|--|---|
| ទីតាំង/ Located in: | เลืออการ ผู้การาะ ภูษิ/                   | Village w/ Commune                               | _ |
| ស្រុក/ District     | 181% Province                             | 82. 0  |   |

| ល.រ | ឈ្មោះ    | រោទ | ក្ខនាទី     | អង្គភាព/ស្ថាប័ន | លេខទូរស័ព្ទ  | ហត្ថលេខា  |
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| No. | Name     | Sex | Position    | Organization    | Phone Number | Signature |
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| 3   | IDE INTO | C   | Sta proving | nimi PPTA       | 012518222    | Ter       |
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| 17  |          |     |             |                 |              |           |
| 18  |          |     |             |                 |              |           |

់ <mark>មញ្ជីនត្តមានប្រជាបនចូលរួមប្រជុំ</mark> #ស្រេន៖ ភាត់ខេត្តយនាពត្រីត្រ និទ អតិនឌ្ឍន៍គសិតខ្មួខាតតូខសៅតំខត់ឧទ្លេសាម( ដំណាត់ភាស ២) Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វ Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lyea Commune

| ទីតាំងរ<br>ចំនួនជ្រ | ប្តិកនៅ៖ ក្នុងភាព<br>រជាជនចូលរួមសរុ | ात्र<br>भ <b>्रत</b> ि | ភូម <u>ិ <sub>សាទធាក</sub> ឃុំ</u><br>នាក់ ស្រី | <u>្សា</u> ស្រុក<br>នាក់ | denogle | 1817 195 | Sty.       |
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| e                   | そうみ おのち                             | দ্ধ                    | -16-  | 14                       |         | 4        |            |
| 3                   | 38 238                              | ess.                   | 11-   |                          |         |          |            |
| 4.                  | मूच रह                              | Þ                      | _11_  | _11_                     |         |          |            |
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### <u>ឧយ៌្មនដ៏ខាទគេសភេទពិលរៃតាំងត្រ</u>ន្ទុំ

គម្រោទ៖ គាត់ចន្ថយតាពក្រីក្រ និទ អតិទឌ្ឍន៍គសិកម្មខ្លាតតូចនៅតំបន់ធន្លេសាម(ដំណាក់គាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) <u>កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា</u> Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune



### <mark>មញ្ជ័នដ្ឋមានប្រសាជនមូលរួមទ្រសុំ</mark> ការទំពេលនិងពេលនិត្រ និទ្ធ អង្គនន្តន្លែកសិកម្មខ្លាតដូចនៅតំចន់ជន្លេសាម(ដំណាក់កាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា

Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

| 25.5 | ಣ್ಣಾಂ   | 6818 | ដូទ   | છ્યું | លេខនូសេត្ | ຄູວສເສໄຊ |
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|      |         |      | -     |       |           |          |

### Picture of meeting





### Voluntary Donation Form Prepare by Village/Commune Authorities

### ទ្រះវាខាណាចត្រកម្ពុជា ទាតិ សាសនា ព្រះមហាក្យត្រ

### **ເຮືອິສຍ**ີເອາສຊີຊູ້

# និចធ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយកម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ <u>CNN ស័ប្បា</u> អាយុ 37 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....សាលការភា ឃុំ .....ស្រ្តាស្រាណ្ដែងខេត្តវិភ្លាសិរិបានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

นี่ตี No มบน No เนียเឈื - ๑๖๖๔ 2023

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី. 6. 18.4 ឆ្នាំ 2017

ស្នាម



### ព្រះរាខាណាចត្រកង្គុខា ខាតិ សាសនា ព្រះមហាក្យត្រុ

### **ເນື້ອສຍ**ໂອງສຊີຊຶ່

## តិទត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...*ឈ្លឺស៊<sup>(</sup>) ឆ្លីស៊<sup>(</sup>)* អាយុ *L*9...ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......................ស្រុក្យកាះស្ត្រជខត្ត រិក្ខអភិទិលបានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

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เนียเพี - เคลา 2024; เป็น = 1028; คาแ = 1028

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។





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## ព្រះពខាណាចក្រកម្ពុខា ខាតិ សាសនា ព្រះចលាក្យគ្រ

## **ເພື່ອສອ**ໂອາສຊີຊຶ່

# តិទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

23 105,50m × 1m = 105,50m

របង No - ភ្នេមស្រីភ = 1.53 ២ - ភ្នាំទុរ = 7.53 ដើមឈើ - ភ្លេវ = 1.53 ២ ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា

ជូនអោយទៅគម្រែងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី. <u>6 18 4 ឆ្នាំ 2017</u>

ណ្ឌមការដែ

## ទាំង សាទនា ខ្រះតសាងវិង្រ ភាង សាទនា ខ្រះតសាងវិង្រ

## **ເຮືອິສ**ຮໂອາສຊີຊຶ່

## តិទន្លេព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ <u>អរស</u>្នាស្នា អាយុ ST ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ <u>សាណាក្រ ឃុំ ស្នា</u> ស្រុកក្រស្នេតខត្ត ស្រតិភិបានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា ដីធ្លី របង ដើមឈើ \_ y ឆ្នាំ (ឆ្នាំ 2 / ឆ្លូ y ជូនអោយទៅគម្រោងក្នុងការផ្ទួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី....................... ថ្នាំ2017

ស្នាមមេដៃ



## ្យពុះពុទ្ធាឈានត្រអង់គឺស សាអូ សាអនា ខ្រែះឧលាអវិន្រ

## **ເຮືອິສ**ຮໍໂອາສ**ຂ**ີ່ຜູ້

## និទន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយអះទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ......សា..សី......អាយុ so....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......សា.ណា.គ... ឃុំ .....ស្វ្.......ស្រុកស្រះស្តេតខេត្តិស្រសិប បានចូលរួមបរិចាកដីផ្លី និង ទ្រព្យសម្បត្តិដូចជា

ងពី

เนียณมี - Cogin = 307 ย

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



របង

106

เยี้ยณี - 6 คลาง = 17 คลาง

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី. <u>៤...ខ</u>្មែ ឆ្នាំ **೭೦**೩ 🛪 ស្នាមមេដៃ

## ព្រះពខាណាចត្រគម្ពុខា ខាតិ សាសនា ព្រះទលាក្យគ្រ

## **ເຮືອິສຮ**ິເອາສຂີ່ສູ້

# និទធ្រព្យសម្បត្តិដោយស្ម័គ្រទិត្ត ពេយគម្រេទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ 2005 ៧ភ្នះ អាយុ ៤៩-ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....សាសកាស... ឃុំ .....សុភាស.... ស្រុកក្រារណ្ឌតាខត្តវិទាំងស បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

and Second

របង

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.04 ខែ.04 ឆ្នាំ 2017



## ព្រះរាជាលានអ្វីងអង្គជា ខាភិ សាសនា ព្រះមហាត្យត្រ

## **ເ**ຮື້ອສອງອາສຊີສິ

## តិទន្រព្យសទ្យត្តិដោយស្ម័គ្រចិត្ត ពេយភាទ្រាទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ 🛒 🖉 🕺 អាយុ 🖓 🕵 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ និង ទ្រព្យសម្បត្តិដូចជា

## อื่อ

របង

เนียเณี 2 - เกตา - 25024

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តតាង ។

ថ្ងៃទី.044. ខែ.011 .....ឆ្នាំ.2017.



## ព្រះពថាណាចក្រអង្គថា ថាអ៊ី សាសនា ព្រះមហាអូអ្រ

## **ເຮືອິສຮ**ິເອາສຊີສູ່

## និទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយគម្រោទ

ជូនអោយទោគម្រោងក្នុងការជួលធុលពេលម្អផ្លូវលាជាអង្គោះជោយមិនមានការទាំមទា ។ សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.a.G. 12.4. ឆ្នាំ 201X



### ព្រះពខាណាចក្រកន្តុខា . ខាតិ សាសនា ព្រះចហាក្សត្រ

## លិខិតចទៃទាតដីឆ្លី តិខធ្រព្យសទ្បត្តិដោយស្ម័គ្រចិត្ត ភេយកម្រោខ

ថ្ងៃទី 6 ខែ a ឆ្នាំ 2017



- 629 ASA BEZ388 - Frongs : 310,274 (32/1) - MERAP = 32 - 0703rg 6 = 4020

## ព្រះពថាណាចត្រកម្ពុជា ជាតិ សាសនា ព្រះទហាក្សត្រ

## **ເຮືອສອ**ໂອາສຊີຊູ້

## តិចធ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគះទ្រាច

ដីធ្លី S9, Sm Y A Am = (261, 8m<sup>2</sup>) (EU 9, 10) 10ង – ១៥ F = 2, 2m; សាសា លេតុ 2 = 262 U ដើមឈើ Y = 6 = 6 = 2, 2m; កាសា លេតុ 2 = 262 U ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា កស្តុតាង ។



## ព្រះពខាណាទត្រតម្ភដ ខាតិ សាសនា ព្រះទសាអត្រ

## **ເຮືອິສ**ຮໂອາສຊີສູ່

## តិទន្រព្យសទ្យត្តិដោយស្ម័គ្រចិត្ត សេយកទ្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ វីណ៍ ភូណ្ហីណៈអាយុ 35 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....សាភភភៈ ឃុំ .....ស្ការស្ត្រាះក្មេតខត្តាក្រាះស្តែតខេត្តិក្រាសិសា បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

2 21 m × 4, 4m = 92, 4m2

របង

เนียเឈี - กฎร = 12ครีบ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូស្នោមមេដៃ ទុកជា ភស្តុតាង ។



# ព្រះពសាណាចក្រអង់ដុប ខាតិ សាសនា ព្រះមហាក្យត្រ **ເຮືອິສຮ**ິເອາສຊີຊີ តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយអម្រោច និង ទ្រព្យសម្បត្តិដូចជា ខ្លីដី របង ដើមឈើ – ្គគ្គ = 10 ភ្នឹម (គ្គ) ្វ />គគុណ = 2ភ្នឹម – (គ្គភ្នាស៍ = 1 ភ្នឹម ជូនអោយទោគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.4 ខែ. c. ឆ្នាំ 2017



### ទោះបទរយោធម្រៃអង់ដុប ខាតិ សាសនា ព្រះទទាាត្យត្រ

### **ເຮືອິສຍ**ຳອາກຊີຊຶ

### និទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយអម្រោទ

និង ទ្រព្យសម្បត្តិដូចជា

ដីធ្លី ស្រុ

103 N.

លេជ 👀 ដើមឈើ – ទៀន = 19 ភ្លើម ្ន សពីភ្លា = ៤ឆ្លើម – សេត្វញា = ៤ឆ្លើម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។





## ព្រះវាខាណាទក្រកង្គខា ខាភិ សាសនា ព្រះមហាក្យគ្រ

### **ເນື້ອສອ**ໂອາສຊີຊຶ

### និចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....ដ្ឋាដ ភ្លាំង.....អាយុ sz...ឆ្នាំ ជាប្រជាពលរដ្ឋសេ់នៅភូមិ .....ងាភាភាភៈ...ឃុំ.........ស្រុកក្រាះច្សាតខត្តិក្រា<sup>អ</sup>ា បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

20 21,70m×4,4m = 95,48m2

IUN N,

ដើមឈើ – ្អ្មេត = 15 វីម (<sup>10</sup>) ្រ – ២គុណ្យ = 20 វីម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណ៍ ដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



ទោះពេះវាណាមអ្រកឆ្កេះ ខាតិ សាសនា ព្រះមហាក្សគ្រ និទទេព្យសម្បត្តិនោយស្ម័គ្រខិត្ត សោយករស្រាខ ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ និត្ត នៅ អាយុ .....ញ់ ជាប្រជាពលរដ្ឋរស់នៅភូមិ សុកស្រាណត ឃុំ ....ស្ ស្រុកស្វាសេត្ត ខេត្ត ស្រះវិល បានចូលរួមហិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា ដីធ្លី N. របង N.

เนียเณี - ออายุณ่ = 280 มีษ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។







109.4 12 4 gi2017



## ព្រះរាជាឈានម្លែងងគំបា ខាតិ សាសនា ព្រះមហាក្យត្រ

## **ເຮືອິສຍ**ໍ່ເອາສຊັຊູ້

# តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយអង្រោច

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ ប៊ុន ភ្លាំ អាយុ 🛪 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ និង ទ្រព្យសម្បត្តិដូចជា

No ខ្លីដី របង 💦

ដើមឈើ – ភាគ 2 4 ភ្នើម – ភ្នើឆ 2 1 ភ្នើម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តតាង ។

ថ្ងៃទី 5 ខែ.4 ឆ្នាំ 2047



## ព្រះរាជាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្យត្រ

## លិខិតទទៃភាគដ៏ឆ្លី និទន្រព្យសទ្យត្តិដោយស្ម័គ្រចិត្ត ពេយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ ៥សង្កី ៤ភ្លឺ ភាយុ 52.ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....ភាសភា ភា ឃុំ ភ្នា ស្រុករួទារឲ្យទេខេត្ត72១៩៩៩បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ដីជ្លី No

របង N.

เนียเพี - ๛ฎล = 4.074

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី 7 ខែ 4 ឆ្នាំ 417



លោក តែម សេរីវុធ

ឲ្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។ អ្នកធ្វើកំណត់ហេតុ

លោក ជៃ ឈុំ

លោក រ័ត្ន កាន

ប្រធានភូមិបឹងស្នោ

ក្រមប្រឹក្សាឃុំល្វា

ហើយព្រមបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ដូចដែលបានវាស់ទាំងនោះឲ្យទៅគម្រោងពិតមែនឬទេ។ ប្រជាពលរដ្ឋបានមានបញ្ចេញមតិថា ពួកគាត់សប្បាយចិត្តនៅពេលដែលមានគម្រោងស្តារប្រលាយនៅក្នុងភូមិរបស់ពួកគាត់ព្រោះវានឹងផ្តល់ផលអោយពួកគាត់អាចធ្វើស្រែបានយ៉ាងហោចណាស់២ដងក្នុង១ឆ្នាំ។ ហើយពួកគាត់លើកដៃទាំងអស់គ្នាគាំទ្រដល់គម្រោងនេះ ហើយបើសិនជាគម្រោងមានប៉ះពាល់ទ្រព្យសម្បត្តិរបស់ពួកគាត់អ្វួចដែលបានកត់ត្រានោះ ពួកគាត់ក៏ស្ម័គ្រចិត្តចូលរួមបរិច្ចាក

ថាស្ម័គ្រចិត្តចូលរួមបរិច្ចាកឲ្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។ ធ្វើការប្រជុំជាមួយបងប្អូនម្តងទៀតនេះគឺដើម្បីបញ្ចាក់ថាបងប្អូន ពិតជាមិនមានការជំទាស់ទៅលើគម្រោង ថ្ងៃនេះខ្ញុំបាទរួមជាមួយអាជ្ញាធរភូមិឃុំ

ក្រោយពីបានជួបជុំគ្នារួចមក លោក សេរីវុធ ជាទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA បានលើកឡើងថា៖ ដូចដែលបងប្អូនបានដឹង ក្រុមការងារបានបញ្ចប់ ការវាស់ដ័ងលម្អិតទៅលើប្រលាយដែលបានស្នើសុំ មានទីតាំង ស្ថិតនៅក្នុងភូមិបឹងស្នោដែលមានទទឹងទំហំ ២០ម៉ែត្រ និងបណ្តោយប្រជ័ង ២០៩៤ម៉ែត្រជាស្ថាពរ ក្រុមការងារបានរកឃើញថាមាន ដែលជាដីសាធារណៈរបរស់រដ្ឋបម្រុងទុកសម្រាប់សាងសង់ប្រលាយ។ តាមការវ៉ាស់ជ័ង ១៧គ្រសារ ដែលនឹងរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនេះ។ ទ្រព្យសមត្ត្រីដែលរងផលប៉ះពាល់ទាំងនោះមានដូចជា សំយ៉ាប របង និងដើមឈើភាគច្រើន ។ ហើយរាល់ទ្រព្យសម្បត្តិដែលប៉ះពាល់ទាំងនោះ ត្រូវបានអជ្ញាធរទទួលបានស្នាមមេដៃពីប្រជាពលរដ្ឋរងផលប៉ះពាល់

និងប្រជាពលរដ្ឋដែលរងផលប៉ះពាល់ចូលរួមចំនួន ៨នាក់ មានស្រីចំនួន ២នាក់ (មានបញ្ជីវត្តមានភ្ជាប់ជាមួយ)

អ្នកស្រី អ៊ុច សាជ៉ត សមាជិកភូមិបឹងស្នោ •

- លោក តែម សេរីវុធ ទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA

ទីតាំងស្ថិតនៅ៖ ភូមិ បឹងស្នោ ឃុំ ល្វា ស្រុក ព្រះស្ពាច ខេត្ត ព្រៃវែង

លោក ធ្វូ អាត អនុប្រធានភូមិបឹងស្នោ

- លោក ជៃ ឈុំ ប្រធានភូមិបឹងស្នោ

- លោក រ័ត្ន កាន ក្រុមប្រឹក្សាឃុំល្វា

កាលបរិច្ឆេទ៖ ថ្ងៃទី១៨ ខែឧសភា ឆ្នាំ២០១៧

#### សមាសភាពចូលរួម

កំណត់ហេតុប្រជុំដើម្បីបញ្ហាក់ទៅលើការបរិច្ចាកទ្រព្យដែលប៉ះពាល់ សម្រាប់គម្រោងស្តារប្រព័ន្ធធារាសាស្ត្រ នៅភូមិបឹងស្នោ ឃុំល្វា

Minute of Meeting for confirming the voluntary donation of affected assets For Irrigation Subproject in Bueng Snaor Village, Lvea Commune

> ព្រះរាជាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ

> > <u>កំណត់ហេតុប្រជុំ</u>

គម្រោងកាត់បន្ថយភាពក្រីក្រ និងអភិវឌ្ឍន៍កសិកម្មខ្នាតតូចតំបន់ទន្លេសាប (វគ្គ២) ស្តិ៍អំពី៖ ការប្រជុំនៃការបញ្ហាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វ

ម៉ោង ៣ និង ០០ នាទី រសៀល ដល់ ម៉ោង ៣ និង ៣០ នាទីរសៀល

#### ຍຕົ້ຮສູນຂຽຍຊໍ

List of attendants for the meeting

នម្រោច៖ កាត់ចន្ថយតាពត្រីក្រ និច អតិចឌ្យន៍កសិកម្មខ្លាតតូចនៅតំបន់ធន្លេសាម(ដំណាក់កាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) <u>កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្ថារប្រលាយនៅក្នុងឃុំល្វា</u> Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

| កាលបរិច្ឆេទ/ Date   | : ថ្ងៃទី <u> </u> ខ <u>ែ ក្</u> សុ ឆ្នាំ២០១៧ | ម៉ោង/ Time: <u>15:00</u> | ដល់/ To30 |
|---------------------|--|--------------------------|-----------|
| ទីតាំង/ Located in: | เลง 2 m ญักเราะ ภูษิ/ V                      | /illage 2 mi/ Co         | mmune     |
| ស្រុព/ District 🚗   | 188/ Province                                | 85.                      | 0'        |
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| ល.រ | ឈ្មោះ   | វោទ | កូនាទី      | អង្គភាព/ស្ថាប័ន | លេខទូរស័ព្ទ  | ហត្តលេខា  |
|-----|---------|-----|-------------|-----------------|--------------|-----------|
| No. | Name    | Sex | Position    | Organization    | Phone Number | Signature |
| 1   | 200 22  | No  | 64 5 is     | Tom             | 010444837    | (2)       |
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| 18  |         |     |             |                 |              |           |

ទញ្ជ័នដ៏សមន៍ស្លេទមួលវិនត្រៃភ្នំ

# កម្រោទ៖ ភាត់ចន្ថយតាពគ្រីគ្រ និទ អតិនឌ្ឍន៍កសិតម្មខ្មាតតូចនៅតំចន់នះនូសាម(ដំណាត់កាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) <u>កិច្ចប្រជុំស្តីពី៖ ការបញ្ហាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា</u> Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

| 25.5 | ಣ್ಯೋ       | 6816 | Ņŝ       | -   | លេខធូរស័ព្ទ | ស្ថាទទេខែ |
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| ١    | sparrede   | - 25 | ATT THE  | 00  |             |           |
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| 2    | Revand     | 18   | Ц        | ч   |             |           |
| 3    | ARTAN      | v    | ų        | 4   |             |           |
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| 5    | 25 562     | 0    | U        | 4   |             |           |
| 1    | 8.05       | 57   |          |     |             |           |
| 0    | JI W       | 0    | <i>u</i> | Y   |             | der.      |
| 7    | EN'ESE     | PS . | 11       | 11  |             |           |
| Q    | 70 255     | 33   | h        | 1r  |             |           |
|      | 1          |      | -        | ,,, |             |           |

#### Picture of meeting





ទម្រង់បរិច្ចាកទ្រព្យសម្បត្តិរងផលប៉ះពាល់ដែលបានជៀបចំដោយអជ្ញាធរភូមិឃុំ

Voluntary Donation Form Prepare by Village/Commune Authorities

ព្រះពថាណាចត្រកម្ពុជា ខាតិ សាសនា ព្រះចញាក្យត្រ

### ณิอิสชโอาสะีผู้

### តិទត្រព្យសម្បត្តិដោយស្ម័គ្រទិត្ត គេយករប្រទ

ខ្ញុំមាទ នាងខ្ញុំឈ្មោះ...ភ្នាំង....តាស្វា...អាយុ ក្ស....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......រវិភេសា្វ......ឃុំ .......សុកាទុះ ស្តាកខេត្ត រទេខរិភ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

อีฉี

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เรียเกมี การริสาร 28 ครอ - ออาล 5 ครอง

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្ផផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

波第04 is 0井 gi 2016

ស្នាមមេដែ ភ្យិនេ ឆាល

### ទានិ សាទនា ខ្មែរនេសាងនៃ សេខា ខ្មែរនេសាងនៃ

### **ເຮືອິສຮ**ິເອາສຊີຊູ້

## តិទទ្ធេព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយកម្មេរទ

ខ្ញុំបាទ <del>នាងខ្ញុ</del>ំឈ្មោះ<u>ក្រុះក</u>្រុងនិសិណៈអាយុ .....ញំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......សិន៍ក្មោ......ឃុំ ..........ស្ត្រក*គ្រះកត្ត*ខេត្ត ស្រែសេទ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

วีลีม

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ដើមឈើ ត្លាល ៤ ស៊ីម – ស៊ីង 2 ស៊ីម – ស្ត្រិ ថ្ងៃក ខ គុន្ត - ចត្វគ្នា ៤ ស៊ីម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

1084 18.4 gi 2017

ស្នាមមេដៃ

Har 43 gr Wenrak

### ព្រះរាសាលាទត្រកន្តស សាសលា ព្រះទសាក្សត្រ

## **ເຮືອິສຮ**ີເອາສຊີຊູ້

និទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ភោយអម្រោទ

ខ្លីដ្ឋី

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ale sepa - Lograler Vepa ដើមឈើ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

1094 124 12017 ស្នាមមេដៃ ADN NY F

## ព្រះពសាណាចត្រតម្ពុជា ព្រះពសាណាចត្រតម្ពុជា

## **ເຮືອິສຮ**ີເອາສ*ຂີ*ຊຶ

## តិចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយកម្រោទ

ខ្ញុំមាទ នាងខ្ញុំឈ្មោះ ក្រុមរ សាង.....អាយុ 5.3...ថ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ....ស្រុកត្រះស្ថិតខត្ត ស្រឹង បានចូលរួមបរិចាកដឺឆ្លី និង ទ្រព្យសម្បត្តិដូចជា ដឺឆ្លី បេង ដើមឈើ ទាំង ចត្ថា រស់ម – សម្ថាងខ្លាស់ រស់ម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។ ថ្ងៃទី44 ខែ 4 ឆ្នាំ 2.0.17



### ព្រះពខាណាទអ្រកង្គខា ខាតិ សាសនា ព្រះទហាក្យគ្រ

## **ເຮືອິສຮ**ໂອາສຊີສູ່

## តិទទ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយការច្រទ

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ाद्रुहाणा होन्द्रेयां न्यूक

ដូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



### ព្រះពខាណាចក្រកន្ទុខា ខាតិ សាសនា ព្រះមហាក្យគ្រ

### **ເຮືອິສຍ**ໂອງສຊີຊຶ

## តិទន្លេព្យសម្បត្តិដោយស្ម័គ្រទិត្ត ពេយកម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ 🛣 🖧 ត្រៀន អាយុ 🦾 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....ស៊ីន់ឈ្នា... ឃុំ ......ស្វ...... ស្រុក គ្ររស្ថទ ខេត្ត គ្រៃវិស បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ភ្លឺដ្តី

របង

हिमार राष्ट्रम्थाने उत्सेख

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



### ព្រះពថាឈាចត្រកង្គុខា ខាតិ សាសនា ព្រះចញាក្យត្រ

## **ເຮືອິສຮ**ິເອາສຊີຊູ້

## តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ. ភេះវិង...ភេះរិង...ភេះរិង......អាយុ ......ញាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .......................ស្កែក ស្រុក ត្រូវភាទ ខេត្ត ស្រែង បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ซีลีมี

របង

हिंहा महीन सहित महिद्दि हिंहा हा महिद्दे हिंहा

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



## សាម ទានសាសាទ ខេះខ្លោង ដែរ ខេះខ្លាំង ខេះខ្លោង ដែរ

## **ເຮືອິສຮ**ິເອາສຊີຊູ້

និទធ្រព្យសម្បត្តិដូចជា ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ក្មាណៈ...ត្តៅ......អាយុ .5៤..ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ...ភិជនស្នា......ឃុំ ....ស្តា.......ស្រុក គ្នាតេទ្ឋតខត្ត គ្រានិង បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

อฉีอี

របង

เนียเณี 23 ออสอ 20 20 - อายาราย่า 19 20

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ដាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.4...ខេ. **វី4**....ឆ្នាំ.2017 ស្នាមមេដៃ (ខ**្**្រូទ្ធ

## ព្រះពខាណាចត្រកម្ពុខា ខាតិ សាសនា ព្រះមហាក្យគ្រ

## លិខិតទទៃភកដីឆ្លី សិខធ្រព្យសទ្យឆ្លិះដោយស្ម័គ្រចិត្ត ពេយគះទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ញាច តាងអ្នត្តា..អាយុ .....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......មិជិញ្ច......ឃុំ .......ស្គា........ស្រុក (ស្រុក (ស្រុក ខេត្ត ) (ស្រុវ) បានចូលរួមបរិចាកដីឆ្លី និង ទ្រព្យសម្បត្តិដូចជា

របង

เนียเณี - พุศัญร 3 ฟุสุ ; - เมีย เตอร : 5 เมีย

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តតាង ។

ថ្ងៃទី.4. នេ.4. ឆ្នាំ <u>2017</u>



## ខាតិ សាទនា ព្រះឧសារអូគ្រ ព្រះពខាណាចគ្រកខ្ពុជា

### ณิอิสยริธาตะีผู้

## តិចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ភេយគរទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ត្រាវ ភ្និត.....អាយុ .....ច្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .......................សុកគ្រះកេន្ត ក្រែវិភេទិ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

របង

हिंहालां हरित्रकी के के

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ដាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

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ស្នាមមេដៃ



ព្រះពខាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ

### **ເຮືອິສຮ**ິເອາສຂີ່ຜູ້

### តិទទ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....ត្រួលភានក្រោត អាយុ 59...ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....ដស់ឈ្នះ....ឃុំ .....ល្....សុក ត្រឈ្មោះ ខេត្ត ថ្រៃនេះ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

อเมือ

របង

ार्धेषाण द्वा द्वा - काल 2000 - 2000

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

> ថ្ងៃទី<u>H....ខ</u>្មែ<u>ខ</u>្ម ស្នាមមេដៃ



## ព្រះពុះាឈាចគ្រកម្ពុជា ជាតិ សាសនា ព្រះចលាក្យគ្រ

# ໜີອິສ**ຮ**ໂອາສຊີຊູ້

## តិខធ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយភាទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....**ភ្នំ.c.**....សាភ.ឆ....អាយុ ......ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......ស្កាំស្នេ....ឃុំ .....ណ្ណ......ស្រុក ក្រសាទ ខេត្ត ក្រៃដៃ) បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

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របង

เนียเณี พระกุษษรณ์ 10กรย - พระสา 1 กรีษ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



## ព្រះពជាណាចត្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្យត្រ

## **ເຮືອິສຮ**ີເອາສຊີສູ່

## តិទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយអម្រេទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ ភ្នាំង ស្មាភ សាយ .....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....រវវវរស្នា.... ឃុំ .......................ស្រុកត្រមកត្ថខេត្ត ត្រៃដៃ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

อฉีม

របង

เรียณี สูงออนิวสุเส. 14 ครื่อ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

> ថ្ងៃទី.4...ខែ.**4**....ឆ្នាំ **2.017** ស្នាមមេដៃ



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ឌាតី សាសនា ព្រះមហាត្យគ្រ សិខិតមនិចាតដីឆ្លី និចត្រព្យសម្បត្តិនោយស្ម័គ្រចិត្ត គោយកាទ្រា ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...សភាចា.......អាយុ ......ធ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......ស្កា ឃុំ ......ស្កា ស្រុក ទ្រស្វា បនត្ត ស្រែត្រី បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា ដីធ្លី បេង ដើមឈើទូទក្រាំង ស្នា ៥ ៥ ស្នាទា 10 ឆ្នាំម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា

ភស្តុតាង ។

ថ្ងៃទី.<u>H...ខ</u>្មែ.<u>អ</u>...ឆ្នាំ 2017 ស្នាមមេដៃ

ព្រះរាជាណាចត្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ

#### ទាន សាទនា ខ្រះឧសាមនៃ ខាន សាទនា ខ្រះឧសាមនៃ

#### **ຜີອິສຮ**ິເອາສຊີຊຶ່

# និចធ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....សាង..សៀង....អាយុ .....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ...........សិវាឆ្នា......ឃុំ ............សុកគ្រះស្តេត ខេត្ត តែនេះ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ខ្ល

របង

ដើមឈើ - ក្រាំ ខ្សាត់ 3 តិវិម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជាណេះដោយមិនមានការទាមទា

ធូនអោយទៅគម្រោះជាជួយពារធូលដុលាសេទ្ឋឆ្លូវលោធារណ៍ដោយបន្តទាំងអោមទេទ សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.H...ខេ.H...ឆ្នាំ **2017** ស្នាមមេដៃ

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#### សាង ទាទសាលាខ្មែងទីសា លោះ សាទសាលាខ្មែងទីសា

#### **ເຮືອິສຮ**ິເອາສຊີຊູ້

## តិទន្លព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយករទ្រាទ

ខ្ញុំបាទ <del>នាងខ្ញុ</del>ំឈ្មោះ<u>ក្រុះក្រ</u>ុះ<u>ក្រុះក្រុះក្រ</u>ុះខេត្ត ស្រ៊ែដាប្រជាពលរដ្ឋរស់នៅភូមិ ......ប៉ុន្តិ៍ឈ្មោ......ឃុំ ...............ស្តុក*គ្រះកេ*ទខេត្ត ស្រ៊ែដៃ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

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ដើមឈើ ត្រាយ ៤ ស៊ាម – ស៊្រី១ ១ សិម – អ្នក្សិ ថ្ក្រាក ១ ឝុឌ្ភិ - ចិត្តា្ញិ ៤ ស៊ីង ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ici 4 12 4 12 2017 ស្នាមមេដៃ

Har togy Wenrak

#### ទាះរយោធម្រងន័ស លះអនាមាលានអ្វីង

#### **ເຮືອິສຮ**ີເອາສຂີຊູ້

ដីធ្លី

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ade sepa - Lossiler Vepa ដើមឈើ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

1094 124 12017 ស្នាមមេដៃ ADN NY F

#### ខាតិ សាមនា ព្រះនលាអង្រែ ព្រះបសាលាទម្រងន័ស

#### **ເຮືອິສຮ**ີເອາສຂີຊຶ່

### និចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយកម្រោទ

ខ្ញុំ<del>បាទ</del> នាងខ្ញុំឈ្មោះ ក្រុមរ សាង.....អាយុ 5.3..ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ និង ទេព្យសម្បត្តិដូចជា ដឹធ្លី របង ដើមឈើ ទាំង ចាត្ត រ តាំង – កម្មរងខ្លាស់ រ តាំង ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។ ថ្ងៃទី44 ខែ 4 ឆ្នាំ 2.0.17



#### ទាន ទាទសាខា ទោះទសាអារិទ្រ សាន ទាទសាខា ខ្មែរះទសាអារិទ្រ

#### **ເຮືອິ**ສຮໂຣາສຊີຊູ້

#### តិទទ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយការច្រទ

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ाद्रुहाणा होन्द्रेये मुख्येव

ដូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



#### ព្រះពខាណាចក្រកទុខា ខាតិ សាសនា ព្រះមហាក្យគ្រ

#### **ເຮືອິສຍ**ໂອງສຊີຊຶ

### និទធ្វព្យសម្បត្តិដោយស្ម័គ្រទិត្ត ភេយកម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ 🛣 🖧 ត្រៀន អាយុ 🦾 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....ស៊ីន់ឈ្នា... ឃុំ ......ស្គារសាស្ត្រ ស្រុក ស្រ្តាទ ខេត្ត គ្រៃនៃវិទ័បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ភ្លឺដ្ដី

របង

हिमार राष्ट्रदान हाणनहा

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



#### ទានិ សាអនា ព្រះទញាត្យត្រ ព្រះពទាណាទត្រកម្ពុជា

#### **ເຮືອິສ**ຮຳອາສຊີຊຶ່

#### តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ. ទៅ ឆ្នាំ ស្ត្រា និង ទ្រព្យសម្បត្តិដូចជា

วิฉีอี

របង

हिंहा महीन सहित महित्वे हे हिंहा हा महित्य

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



#### សាម ទានសាសាទ ខេះខ្លោងដែរ ខេះមនាយានមែងនិសា

#### **ເຮືອິສຮ**ິເອາສຊີຊູ້

និទធ្រព្យសម្បត្តិដូចជា ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ក្មាណៈ...ត្តៅ......អាយុ .5៤..ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ...ភិជនស្នា......ឃុំ ....ស្តា.......ស្តេក ស្ត្រាតស្នួតខេត្ត ក្រាទិង បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ខ្មីឆ្លី

របង

เนียเณี 23 ออสอ 20 20 - อายาราย่า 19 20

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.4...ខេ. **វី4**...ឆ្នាំ.2017 ស្នាមមេដៃ (ខ**្**រង្វី

#### ព្រះពខាណាចត្រកម្ពុខា ខាតិ សាសនា ព្រះមហាក្យគ្រ

## លិខិតទទៃភកដីឆ្លី និទទ្រព្យសទ្បន្តិដោយស្ម័គ្រចិត្ត ពេលគារទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ញាច តាដៃអ្នច អាយុ .....ញាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......មិជាលុទ្ធ...... ឃុំ .......ស្គ..........ស្រុក (ស្រុក (ស្រុក ខេត្ត ) (១៩៩) បានចូលរួមបរិចាកដីឆ្លី និង ទ្រព្យសម្បត្តិដូចជា

របង

เนียเณี - พุศัญร 3 ฟุสุ ; - เมีย เตอร : 5 เมีย

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តតាង ។

ថ្ងៃទី.4. នេ.4. ឆ្នាំ <u>2017</u>

ស្នាមមេដៃ

#### ខាតិ សាទនា ព្រះឧសាភ្យត្រ ព្រះពខាណាចគ្រកខ្ពុជា

#### ณิอิสยโอาหฉีผู้

## តិចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ភេយគរទ្រាទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...ត្រាវ ភ្និត.....អាយុ .....ឆ្នាំ ជាប្រជាពលរដ្ឋសេនៅភូមិ ................សុកគ្រះស្ទេខេត្ត ក្រែវិភេទ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

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हिंहालां हरित्रकी के के

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្ដាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

igs H iz H g 2017

ស្នាមមេដៃ



#### ព្រះពខាណាចក្រកម្ពុខា ខាតិ សាសនា ព្រះមហាក្យក្រ

#### **ເຮືອິສຮ**ີເອາສຂີ່ຜູ້

#### តិទទ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត ពេយគម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....ត្រួលភានក្រោត អាយុ 59...ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ......ដ៍ភ័ណ្ឌ....ឃុំ .....ល្....សុក ត្រលោទ ខេត្ត ក្រែនៃ> បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

อาลีม

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ដើមឈើ ឆ្នាំស្ថិត្រក 🧟 ភ្លុង – តាយ ឧត៌ទ ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

> ថ្ងៃទី<u>H....ខ</u>្មែ<u>ខ</u>្ម ស្នាមមេដៃ



#### ព្រះពុះាឈាចគ្រកម្ពុជា ជាតិ សាសនា ព្រះចលាក្យគ្រ

# **ເນື້ອສຮ**ໂອາສຊີຊູິ

#### តិខធ្រព្យសម្បត្តិដោយស្ម័គ្រខិត្ត ភេយករទ្រាខ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...**ភ្នំ.c.**......សក.ឆ....អាយុ ......ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .................ស្កែស្នេ.....ឃុំ ......ណ្ណ........ស្រុក ក្រសាទ ខេត្ត ក្រៃដៃ) បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ទីដ្ដី

របង

เนียเณี พระกุษระกูล่ 10กรย - พระสา 1 กรีษ

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្នាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



#### ព្រះពថាណាចត្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្យត្រ

#### **ເຮືອິສ**ຮໂອງສຊີຊູັ

#### តិទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សេយអម្រេទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ ភ្នាំង ស្មាភ សាយ .....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....រវវវរស្នា.....ឃុំ ......................ស្រុកត្រមកត្ថខេត្ត ត្រៃដៃ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

ชีผีม

របង

เรียณี สูงออนิมลุโส. 14 ครื่อง

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

> ថ្ងៃទី.4...ខែ.**4**....ឆ្នាំ **2.017** ស្នាមមេដៃ







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#### ព្រះរាជាឈាចត្រអង្គជា ជាតិ សាសនា ព្រះមហាក្យគ្រ

#### លិខិតមនិចាតដីឆ្លី

# និទ្យធព្យសម្បត្តិដោយស្ម័គ្រខិត្ត ភេយកម្រោទ

ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ...សភាចា.....និ.....អាយុ ......ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....................សុកគ្រះស្ថា ខេត្ត *ថ្រៃនៃវិំ* បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា

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របង

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាធារណៈដោយមិនមានការទាមទា សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។



លិខិតមទិចាអដីឆ្លី និចច្រត្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយអាម្រោខ ខ្ញុំបាទ នាងខ្ញុំឈ្មោះ....សាង...ស្ថិ.....អាយុ ......ឆ្នាំ ជាប្រជាពលរដ្ឋសេនៅភូមិ .....ស្កាសស្ត្រ ខេត្ត ត្រៃវិស្ បានចូលរួមបរិចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា ដីធ្លី បេង ដើមឈើ- តម្រងខ្សាត់ 3 តិរឹម ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អផ្លូវសាជារណៈដោយមិនមានការទាមទា

ចេះពសាលាចត្រតម្ពុជា

ខាតិ សាសនា ព្រះទីសាក្យត្រ

ជូនអោយទៅគម្រោជក្នុងការជួលជុលពលេទ្ឋនូវថាងកំណើយដែលដល់សំចាន់កំពេទ។ សំណងនូវការបាត់បង់ឬក៍ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនក្លាប់នូវស្នាមមេដៃ ទុកជា ភស្តុតាង ។

ថ្ងៃទី.H...ខេ.H...ញ៉ាំ.**2017** ស្នាមមេដៃ

ong effs.





លោក តែម សេរីវុធ

លោក ឆាយ ប៊ុនឈឿន

លោក វ័ត្ន កាន

អ្នកធ្វើកំណត់ហេតុ

ប្រធានភូមិត្នោតច្រុះ

ក្រុមប្រឹក្សាឃុំល្វា

ហេយពួកគាតលេកដេទាងអសគ្នាគាទ្រដលគម្រោងនេះ ឲ្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។

ហើយព្រមបវិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ដូចដែលបានវាស់ទាំងនោះឲ្យទៅគម្រោងពិតមែនឬទេ។ ប្រជាពលរដ្ឋបានមានបញ្ចេញមតិថា ពួកគាត់សប្បាយចិត្តនៅពេលដែលមានគម្រោងស្តារប្រលាយនៅក្នុងភូមិរបស់ពួកគាត់ព្រោះវានីងផ្តល់ផលអោយពួកគាត់អាចធ្វើស្រែបានយ៉ាងហោចណាស់ខាងងក្នុង១ឆ្នាំ។ ហើយពួកគាត់លើកដៃទាំងអស់គ្នាគាំទ្រដល់គម្រោងនេះ ហើយបើសិនជាគម្រោងមានប៉ះពាល់ទ្រព្យសម្បត្តិរបស់ពួកគាត់ដូចដែលបានកត់ត្រានោះ ពួកគាត់ក៏ស្ម័គ្រចិត្តចូលរួមបវិច្ចាក

ថាស្ម័ត្រចិត្តចូលរួមបរិច្ចាកស្យទៅគម្រោងដោយមិនមានទាមទារសំណងអ្វីទាំងអស់។ ថ្ងៃនេះខ្ញុំបាទរួមជាមួយអាជ្ញាធរភូមិឃុំ ធ្វើការប្រជុំជាមួយបងប្អូនម្តងទៀតនេះគឺដើម្បីបញ្ចាក់ថាបងប្អូន ពិតជាមិនមានការជំទាស់ទៅលើគម្រោង

ក្រោយពីបានផ្ទបជុំតួរួចមក លោក សេរីវ៉ុធ ជាទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA បានលើកឡើងថា៖ អ្នចដែលបងប្អូនបានដឹង ក្រុមការងារបានបញ្ចប់ ការវាស់ផ័ងលច្ឆិតទៅលើប្រលាយដែលបានស្នើសុំ មានទីតាំង ស្ថិតនៅក្នុងភូមិឆ្នោតច្រុះមានទទឹងទំហំ ១៥ម៉ែត្រ និងបណ្តោយប្រជ័ង ១០៦០ម៉ែត្រជាស្ថាពរ ដែលជាដីសាធារណៈរបរស់រដ្ឋបម្រុងទុកសម្រាប់សាងសង់ប្រលាយ។ តាមការវ៉ាស់ផ័ង ក្រុមការងារបានរកឃើញថាមាន ២៧គ្រួសារ ដែលនឹងរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនេះ។ ទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ទាំងនោះមានអ្នចជា របង និងដើមឈើភាគច្រើន ។ ហើយរាល់ទ្រព្យសម្បត្តិដែលប៉ះពាល់ទាំងនោះ ត្រូវបានអជ្ញាធរទទួលបានស្នាមមេដៃពីប្រជាពលរដ្ឋរងផលប៉ះពាល់

និងប្រជាពលរដ្ឋដែលរងផលប៉ះពាល់ចូលរួមចំនួន ១៤នាក់ មានស្រីចំនួន ៩នាក់ (មានបញ្ដីវត្តមានភ្ជាប់ជាមួយ)

- លោក វ៉ង់ សឿន អនុប្រធានភូមិត្នោតច្រះ
- លោក ឆាយ ប៊ុនឈឿន ប្រធានភូមិត្នោតច្រុះ
- លោក រ័ត្ កាន ក្រុមប្រឹក្សាឃុំល្វា
- លោក តែម សេរីវ៉ុធ ទីប្រឹក្សាដោះស្រាយផលប៉ះពាល់ PPTA

#### <u>សមាសភាពចូលរួម</u>

- ទីតាំងស្ថិតនៅ៖ ភូមិ ត្នោតច្រុះ ឃុំ ល្វា ស្រុក ព្រះស្ពាច ខេត្ត ព្រៃវែង
- កាលបរិច្ឆេទ៖ ថ្ងៃទី១៨ ខែឧសភា ឆ្នាំ២០១៧ ម៉ោង ៤ និង ០០ នាទី រសៀល ដល់ ម៉ោង ៤ និង ៣០ នាទីរសៀល

ស្តីអំពី៖ ការប្រជុំនៃការបញ្ហាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ពួកមេតម្រោងស្តារប្រណយនៅក្នុងឃុំណ្ហ

គម្រោងកាត់បន្ថយភាពក្រីក្រ និងអភិវឌ្ឍន៍កសិកម្មខ្នាតតូចតំបន់ទន្លេសាប(វគ្គ២)

កំណត់ហេតុប្រជុំ

ព្រះរាជាណាចក្រកម្ពុជា ជាតិ សាសនា ព្រះមហាក្សត្រ **3**  <u>មញ្ជីនដ្ឋមាតម្រប៉ុ</u> List of attendants for the meeting គះទ្រោទ៖ គាត់មន្ថយតាពគ្រីគ្រ និទ អតិនឌ្ឍន៍គសិកម្មខ្លាតតុចះនៅតំមន់នះនួសាម(ដំណាក់គាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា

Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

កាលបរិច្ឆេទ/ Date : ថ្ងៃទី<u>N</u> ខែ<u>០ಽ</u> ឆ្នាំ២០១៧ ម៉ោង/ Time: <u><u>16:00</u> ដល់/ To <u>16:80</u> ទីតាំង/ Located in: <del>ក្នុង ធ្វោតន្ត្រះ</del> ស្ថិតនៅ៖ ភូមិ/ Village\_<u>ត្វោតរុទ</u>្ធ ឃុំ/ Commune <u>ទា</u> ស្រុក/ District <u>- ក្រា ទោក</u> ខេត្ត/ Province <u>រកា និង។ '</u></u>

| ល.រ | ឈ្មោះ       | វេតទ | តូនាទី    | អង្គភាព/ស្ថាប័ន | លេខទូរស័ព្ទ   | ហត្ថលេខា  |
|-----|-------------|------|-----------|-----------------|---------------|-----------|
| No. | Name        | Sex  | Position  | Organization    | Phone Number  | Signature |
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| 3   | BS. mils    | Ø    | MAGDWARD  | operac          | 093 32 49 404 | -25       |
| 4   | Ellino Eros | д    | ATPEFAEK  | PPTA 7          | 012528242     | Jes_      |
| 5   | /           |      | 2011      |                 |               |           |
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| 10  |             |      |           |                 |               |           |
| 11  |             |      |           |                 |               |           |
| 12  |             |      |           |                 |               |           |
| 13  |             |      |           |                 |               |           |
| 14  |             |      |           |                 |               |           |
| 15  |             |      |           |                 |               |           |
| 16  |             |      |           |                 |               |           |
| 17  |             |      |           |                 |               |           |
| 18  |             |      |           |                 |               |           |

<u>ຣໜູຂສິສະຮາລໂຄຣງຣຮຣ໌ຫະສິລຣຣ໌</u> កម្រោទ៖ តាត់ចន្ថយតាពត្រីត្រ និទ អតិចខ្លាន់តសិកម្មខ្លាតតូចនៅតំបន់ឧរន្លសាម(ដំណាក់តាល ២) Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF) កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune កាលបរិច្ឆេទ៖ ថ្ងៃទី <u>18</u> ខែ*ខ្លុ*សុភ្មា ឆ្នាំ២០១៧ ម៉ោង 16:00 ដល់ 16:20-NJ.g. ទីតាំងស្ថិតនៅ៖ 🛁 🖓 🏧 ភូមិ ក្នុងទេះ ឃុំ ចំនួនប្រជាជនចូលរួមសរុប 🔄 🖳 នាក់ ស្រី [NITIMO:0717 នាក់ ចំនួនប្រជាជនចូលរួមសរុប\_ ស្ថាទទេខែ 255 លេខធូរស័ព្ -25.5 69102 62553: 55 35 1 20 600 Jez arow ea 2. 11 11 maring u 3 v 4 wants h 4 4 4 8" U 5 U 4 4 ଶାନତ 6 4 И U 300: ۲ 7 ч 32 67. и 8 U 11 ගිබ දීක 4 9 4 12 29 95 4 M H

#### <u>មញ្ជីទត្តមានច្របាបនចូលរួមប្រជុំ</u> នរម្រាន៖ តាត់មន្ថយតាពក្រីក្រ និទ អតិទន្លនៃកសិកម្មខួរតតូចនៅតំមន់នរន្តសាម(ដំណាក់តាល ២)

Tonle Sap Poverty Reduction and Smallholders Development Project (TSSD-AF)

កិច្ចប្រជុំស្តីពី៖ ការបញ្ជាក់អំពី ការបរិច្ចាកទ្រព្យសម្បត្តិដែលរងផលប៉ះពាល់ក្រោមគម្រោងស្តារប្រលាយនៅក្នុងឃុំល្វា

Public Consultation Meeting for Voluntary donation confirmation for the affected assets under the rehabilitation of small irrigation in Lvea Commune

| 25.5 | ಕಾರ್ನು:      | 6 <b>81</b> 92 | କୃତି       | ಆ್ | លេខធូសេពួ | ស្លាមមេដែ |
|------|--------------|----------------|------------|----|-----------|-----------|
| 11   | যদ হ্রায়    | 65             | स्ट्रिस्ट: | 20 |           |           |
| 12   | ပာသိ ခ်ိသ္သာ | и              | ч          | Þ  |           |           |
| 13   | eve 25       | U              | U          | 11 |           |           |
| 14   | En la        | и              | 4          | и  |           | CAR S     |
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|      |              |                |            |    |           |           |
|      |              |                |            |    |           |           |
|      |              |                |            |    |           |           |

#### Picture of meeting





ទម្រង់បរិច្ចាកទ្រព្យសម្បត្តិរងផលប៉ះពាល់ដែលបានផៀបចំដោយអជ្ញាធរភូមិឃុំ

Voluntary Donation Form Prepare by Village/Commune Authorities

| ព្រះពសាលាចត្រតម្ភសា  |
|--|
| ະວາສີ ຄວາຍເວລ ໂຍະສະກາໂມສະໂ   |
| and the second sec   |
| លិខិតចរិច្ចាតដីឆ្លី  |
| និចន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សោយគម្រោទ   |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ គ្នុ <u>ស្ពេញ</u> ភេទ សា អាយុ 6.5 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ<br>ស្ត្រភ. ស្ត្រី ឈុំ ស្ត្រី ស្ត្រីក ស្ត្រីក ស្ត្រី ស្ត្រ |
| 25. 110.6.6.m <sup>2</sup> (S.C.)  |
| າບລ  |
| ដើមឈើ  |
| ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ   |

បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។





# **ເຮືອິສຮ**ີເອຼາສຂີສູ້

# និទន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ. 🕵 🔍 ជា ហេត ភា. ភាយុ ////ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ  |
|---|
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖  |
| Ξij 376 m²( Ka)   |
| របង   |
| ដើមឈើ   |
| ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ<br>បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។ |

ថ្ងៃទី....រុង...ខែ..០Σ....ឆ្នាំ២០.ក្



# ព្រះពថាណាចត្រកម្ពុថា ថាតិ សាសនា ព្រះមហាត្រក្ស លិខិតថរិច្ចាភជីឆ្លី និចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សោយគម្រោច

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។





ព្រះពờាឈាចត្រកម្ពុờា ថាតិ សាសនា ព្រះចញាត្រត្យ ៨%%. លិខិតចថ្លៃពួកសីឆ្លី និចត្រព្យសច្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

äğ 119.14 m² ( > ?c)

របង\_\_\_\_\_

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តតាង។



ព្រះពសាលាចក្រកម្ពុជា ខាតិ សាសនា ព្រះមហាត្រត្យ **ເຮືອິສຮ**ິເອາສຊີຊຶ និទន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ ហ៊ុន 2 ណ្ណា ភេទ ៧ អាយុ 36 ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ .....ស្ត្រា ស្រុក ស្រុក ស្រុក ខេត្ត ភ្លេក ខេត្ត ភ្លេក 2.4 បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖ 「「「 259.20m<sup>2</sup> ( A gを) របង... ដើមឈើ..

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ថ្ងៃទី.....នៃ. 🗸 ....ឆ្នាំ២០.រុក្



ព្រះពសាលាចត្រកម្ពុសា ខាតិ សាសនា ព្រះមហាក្រក្ស

# **ເຮືອິສຮ**ີເຫຼົາສຂີ່ຫຼື

# តិទន្ទព្យសទ្យត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

ថ្ងៃទី....នៃ...សាំ២០.17.



| ព្រះរាជានានផ្លែងតំនា   |
|--|
| ខានិ សាសនា ព្រះមហាត្រត្យ   |
| ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~                                     |
| <b>ເຮືອສຮ</b> ີເອຼາສຂີ້ສູ້   |
| តិចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច                                 |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ សិត្តស្មេន  |
| 語 187.50 m2 (首)  |
| របង  |
| ដើមឈើ  |
| ជូនអោយទៅគម្រោងក្នុងការជួសជួលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ |

បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាក្នុស្តុតាង។



#### 

## **ເຮືອສອ**ິເອຼາສຂີສູ້

# និទន្ទរព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោខ

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ 🕹 គ            | 179. T. Huy. 58 | ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ |
|---------------------------------------|-----------------|------------------------------|
| \$536.65                              | ស្រុក(ភានល្អាត  | 125 . 70 . 24                |
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសមុ | ត្ត្រិដូចជា៖    | C                            |
| ដីធ្លី. <u>189.70m<sup>2</sup> C</u>  | 12)<br>)        |                              |
|                                       |                 |                              |

របង\_\_\_\_\_

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ថ្ងៃទី....រុំខ.መ....ឆ្នាំ២០17.



# ព្រះពុសាលាចក្រកម្ពុជា សូទ្ធ សាសនា ព្រះទទ្ធារាមដំរើ សូទ្ធនេសនៃវិងសន្រី សូទ្ធនេសនាស្តីម្រៃខ្លួង លោកអារសៃរច

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះហ្.ដ្និ.ណ្ណ                |
|--|
| .c. a a b  |
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖ |
| ай 490 109m² (З 20)                              |
| របង  |
| ដើមឈើ  |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ថ្ងៃទី....រុះខ.05....ឆ្នាំ២០ ្...



ព្រះពថាណាចក្រកម្ពុថា ខាតិ សាសនា ព្រះមហាត្រត្យ **ເ**ນື້ອສອງອີກສະຊີຊຶ່ តិទន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ

ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ...នាល ភ្លានស្សៀង....កេទ...ប្..អាយុ..6.8.....ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ស្ថ្មោត ត្រូ ពានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖ # 68m2(声) cgを) 141.90m2(声) របង..... 12 HINI MAN (20 DD) , (A. C. (10 DD) ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។





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ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។




ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។



ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្កុតាង។



## **ເຮືອສຮ**ິເອຼາສຂີ່ສຼື

## និចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

| 3. 201.  |  |
|--|--|
| រត្វាត្ 6 ន                                      |  |
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖ |  |
| 2歳. 184.20m2(首で)                                 |  |
| របង  |  |
| ដើមឈើ  |  |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។



| ព្រះរាជាលាចគ្រងស្ដីជា                      |
|--|
| ຕາສີ ຄາຍຂາ ທາະອອກທາສາ                      |
|  |
| <u>ເຮືອສຮະອຼາສະສູ</u> ້                    |
| តិចន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះសាង ៣៩               |
| 語 311.10m2 (2)の)                           |
|  |

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

របង.....

ថ្ងៃទី....នាំ២០..គ្រ

ស្នាមមេដៃ



## ព្រះពờាណាចត្រតម្ពុờា ខាតិ សាសនា ព្រះមហាត្រត្យ លិខិតមរិស្ថាភជីឆ្លី

### និទន្ទពេសម័រត្តីដោយស្ម័ត្រចិត្ត អោយគម្រោទ

3g 150 m2 (Bila)

របង\_\_\_\_\_

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។

ថ្ងៃទី....នៃ...ភ្នាំ២០.ค.



| ព្រះពខាណាចត្រតម្ភុខា<br>ខាតិ សាសនា ព្រះមហាត្រត្យ<br>   |
|--|
| និចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ   |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ  ស្មាំ ភាស្ត្រី ្ល  ភេទ.ត ភាយុ  ភីវិ  ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ<br>សត្ថាត  ទ្រុ<br>ភានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖<br>ដីធ្លី <u> </u> |
| ដើមឈើ  |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភិស្កុតាង។





| 10100000000000000000000000000000000000  |
|---|
| Restoucheddatt  |
| ខាតិ សាសនា ព្រះមហាត្រត្យ  |
|   |
| <u>ເ</u> ຮືອສອງອີນສະຊີຊີ  |
| តិទន្លព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ                                      |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះភាភ្ភាគ្ភ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ                      |
| . ភ្លេត ៩   |
| äğ. 120m² (3?C)   |
| របង   |
| ដើមឈើ. គ្នោត (. 27 គេទ)   |
| ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ      |
| បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។ |

ថ្ងៃទី....នៃ...ស្នាំ២០.17.



# ព្រះពិសាលាចត្រកម្ពុស សិខិតចរិច្ចាភសិទ្ឋី សិខិតចរិច្ចាភសិទ្ឋី សិខធ្លព្យសម្បត្តិដោយស្ម័គ្រចិត្ត សោយកម្រោខ

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ. <u>ឆ្ល (     ណ្ណ ៥ ឝ                            </u> | ភូម<br> |
|--|---------|
|  |         |
| II. 112.20m <sup>2</sup> ( I 20)   |         |
| របង  | ••••    |
| ដើមឈើ  |         |
|  |         |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។

ថ្ងៃទី.18...ខែ.05...ឆ្នាំ២០.17.



| ព្រះពថាណាចត្រកម្ពុជា<br>ថាតិ សាសនា ព្រះមហាត្រក្ស<br> |
|--|
| តិចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច           |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ ស៊ី.២. ភ.ឥ                    |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។



| ព្រះពថាណាចត្រកម្ពុថា<br>ថាតិ សាសនា ព្រះធមាាត្រត្យ<br>លិខិតថើឡាកដីឆ្លី |
|---|
| និចន្ទព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោទ                            |
| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះនិ) <u> </u>                                    |
| 11点 216.07 M2 ( 2010 )  |
| របង   |
| ដើមឈើ   |
| ជនអោយទៅគមោងកងការជសជលកែលមរជវិសាធារណៈដោយអិនមានការទាមទាត់ណេងនវិការ       |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។



ព្រះពសាលាចក្រកម្ពុសា សិខិតសិទ្ធាតដីឆ្លី លិខិតសិទ្ធាតដីឆ្លី និចធ្រព្យសទ្យត្តិដោយស្ម័គ្រចិត្ត សោយគម្រោខ

ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះ ឆ្លំ ភ្លួន ភ្លេន ភេទ សំ សអាយុ 12 ភ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ ភ្លេត (ភ្លុន ឃុំ ភ្លា ស្រុក (ភេះ ឆ្នាំ ភេះ ស្រុក (ភេះ ឆ្នោំ ភេះ ឆ្នាំ ភេះ ឆ្នាំ ភេះ ឆ្នាំ ភេះ ឆ្នាំ ភេះ ឆ្នាំ ភេះ បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖ ដីធ្លី <u>2M. 20m (គ</u>្នាត្រ)

üğ....ö.AA. A.O.m.S. F.Y (A.Y.)

របង.....

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។

ថ្ងៃទី....នាំ២០.17.



# ព្រះពថាឈាចត្រកម្ពុថា ថាតិ សាសនា ព្រះមហាក្រក្យ លិខិតចរិច្ចាភជីឡី និចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោខ

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ<br>ឃុំសកសក |
|---|
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖              |
| äğ 148.06m² (İla)   |
| របង   |
| ដើមឈើ   |

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ថ្ងៃទី...រន្ទំ២០🗛...



ព្រះរាờាណាចត្រកម្ពុờា ខាតិ សាសនា ព្រះធលាក្រក្ស លិខិតចរិច្ចាកដីឆ្លី និចធ្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

របង.....

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ថ្ងៃទី....ន្មាំ២០.ក្.



## ព្រះពờាណាចត្រកម្ពុờា ថាតិ សាសនា ព្រះមហាក្រក្យ លិខិតចរិទ្ធាភសិឆ្លី និចត្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោខ

ig 49.05m2 ( Ber) របង..... เรียณมี (การ (แม้อ), เฏล (10120)

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេជៃ ទុកជាភស្តុតាង។



# ព្រះពថាណាចត្រកម្ពុថា ថាតិ សាសនា ព្រះមហាក្រត្យ

#### **ເຮືອສອ**ີເຈຼາສຂີ່ຜູ້

## តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះភ្លុំល្ហា     | ្ល<br>សេច ភេទ <b>೧</b> អាយុ | 🛃ឆ្នាំ ជាប្រជាពលររុ                    | ដ្ឋរស់នៅភូមិ |
|-------------------------------------|-----------------------------|--|--------------|
| ັດສາສ.(ຮັສ                          | )ស្រុក (៣៩.ឆ្នារ            | 187                                    | <u>.</u>     |
| បានចូលរួមបរិច្វាកដីធ្លី និង ទ្រព    | ស្រម្បត្តិដូចជា៖            | 0                                      |              |
| ដីធ្ល <u>ី 107.50.m<sup>2</sup></u> | (B)(m)                      | ······································ |              |

របង.....

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាភស្តុតាង។

ស្នាមមេដៃ



### ព្រះរាជាណាចត្រកម្ពុជា ខាតិ សាសនា ព្រះមហាក្រត្យ

#### **ເຮືອສຮ**ີເອຼາສຂີ່ສຼື

### តិចន្រព្យសម្បត្តិដោយស្ម័គ្រចិត្ត អោយគម្រោច

| ខ្ញុំបាទ/នាងខ្ញុំឈ្មោះនឿ ្រតុង្គ១កទសាអាយុ6.5ឆ្នាំ ជាប្រជាពលរដ្ឋរស់នៅភូមិ |  |
|--|--|
| ត្រោត (គ   |  |
| បានចូលរួមបរិច្ចាកដីធ្លី និង ទ្រព្យសម្បត្តិដូចជា៖                         |  |
| 語: 300m2 (月)(の)  |  |
| របង  |  |
|  |  |

ដើមឈើ.....

ជូនអោយទៅគម្រោងក្នុងការជួសជុលកែលម្អរផ្លូវសាធារណៈដោយមិនមានការទាមទាសំណងនូវការ បាត់បង់ ឬក៏ជំទាស់រាល់បញ្ហាផ្សេងៗអ្វីឡើយ សូមជូនភ្ជាប់នូវស្នាមមេដៃ ទុកជាកស្តុតាង។

