My Ly - Nam Mo Hydropower JSC

Environmental and Social Impact Assessment

MY LY HYDROPOWER PROJECT

VOLUME VI
Resettlement and Ethnic Minority Livelihoods Restoration Plan (REMLRP)
29 September 2017

ENVIRO-DEV
### Resettlement and Ethnic Minority Livelihoods Restoration Plan (REMLRP)

<table>
<thead>
<tr>
<th>Date</th>
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</thead>
</table>

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## TABLE OF CONTENTS

Abbreviations and acronyms ........................................................................................................ 6

1 Purpose and aim of the REMLRP ................................................................................................. 1

2 Relevant policies .......................................................................................................................... 2

  2.1 Policies of the Government of Vietnam .................................................................................. 2

  2.2 Policies of the Government of Lao PDR ............................................................................... 2

  2.3 Resettlement policy of the WB group .................................................................................... 2

  2.4 Comparison of the policies of Vietnam and Lao PDR with the MIGA policy .................... 3

3 Project location ............................................................................................................................. 8

4 Direct impact area ....................................................................................................................... 9

  4.1 Inundation area ...................................................................................................................... 9

  4.2 Project construction areas ..................................................................................................... 9

  4.3 Downstream stretch .............................................................................................................. 9

  4.4 Socio-economic and cultural features of the affected villages ........................................... 9

     4.4.1 Population, ethnicity and poverty .................................................................................. 9

     4.4.2 Infrastructure and services ............................................................................................ 10

     4.4.3 Health and Sanitation ................................................................................................... 10

     4.4.4 Food and nutrition ........................................................................................................ 11

     4.4.5 Education ...................................................................................................................... 11

     4.4.6 Livelihoods .................................................................................................................... 11

     4.4.7 Cultural heritage ........................................................................................................... 12

     4.4.8 Gender roles and issues ............................................................................................... 13

     4.4.9 Major reasons for prevailing poverty ........................................................................... 13

5 Project impacts ............................................................................................................................ 14

  5.1 Reservoir inundation ............................................................................................................. 14

     5.1.1 Villages to be inundated ................................................................................................ 14

  5.2 Construction area impacts ...................................................................................................... 14

  5.3 Downstream water regime ..................................................................................................... 14

  5.4 Physical losses due to reservoir inundation and dam construction .................................... 16

     5.4.1 Loss of private property ................................................................................................. 16

     5.4.2 Loss of land ................................................................................................................... 16

     5.4.3 Loss of public infrastructure ........................................................................................ 16

     5.4.4 Loss of cultural heritage ................................................................................................ 17

  5.5 Non-physical losses due to reservoir inundation and dam construction ............................ 17

     5.5.1 Loss of access to livelihoods resources ......................................................................... 17

     5.5.2 Loss of access to transportation ..................................................................................... 17

6 Informed Consultation and Participation, ICP ........................................................................... 18

  6.1 Previous consultations .......................................................................................................... 18

  6.2 ICP process initiated ............................................................................................................ 18
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3</td>
<td>Main concerns from the affected people</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>Grievance Redress Mechanism</td>
<td>20</td>
</tr>
<tr>
<td>8</td>
<td>Monitoring</td>
<td>21</td>
</tr>
<tr>
<td>9</td>
<td>Resettlement Policy Framework</td>
<td>22</td>
</tr>
<tr>
<td>9.1</td>
<td>Policy and Entitlement Matrix for the My Ly Hydropower Project</td>
<td>22</td>
</tr>
<tr>
<td>9.1.1</td>
<td>Legal basis and standards</td>
<td>22</td>
</tr>
<tr>
<td>9.1.2</td>
<td>Proposed My Ly Hydropower Project Policy for the PAPs</td>
<td>23</td>
</tr>
<tr>
<td>9.1.3</td>
<td>Relocation site selection process</td>
<td>24</td>
</tr>
<tr>
<td>9.1.4</td>
<td>Land acquisition and compensation process</td>
<td>24</td>
</tr>
<tr>
<td>9.1.5</td>
<td>Roles and responsibilities</td>
<td>25</td>
</tr>
<tr>
<td>10</td>
<td>Livelihoods Restoration Plan</td>
<td>29</td>
</tr>
<tr>
<td>10.1</td>
<td>Fisheries Support Plan</td>
<td>29</td>
</tr>
<tr>
<td>10.1.1</td>
<td>Cage Fish Farming</td>
<td>30</td>
</tr>
<tr>
<td>10.1.2</td>
<td>Community Fish Farming</td>
<td>30</td>
</tr>
<tr>
<td>10.2</td>
<td>Agriculture Restoration Plan</td>
<td>30</td>
</tr>
<tr>
<td>10.2.1</td>
<td>Upland Farming Diversification</td>
<td>31</td>
</tr>
<tr>
<td>10.2.2</td>
<td>Soil Fertility Enhancement</td>
<td>32</td>
</tr>
<tr>
<td>10.3</td>
<td>Animal Husbandry and Veterinary Services Plan</td>
<td>33</td>
</tr>
<tr>
<td>10.3.1</td>
<td>Animal Husbandry Improvement</td>
<td>33</td>
</tr>
<tr>
<td>10.3.2</td>
<td>Extension and Veterinary Services</td>
<td>33</td>
</tr>
<tr>
<td>10.3.3</td>
<td>Forage Production</td>
<td>33</td>
</tr>
<tr>
<td>11</td>
<td>Community Health and Sanitation Plan</td>
<td>34</td>
</tr>
<tr>
<td>11.1</td>
<td>Household water supply and management</td>
<td>34</td>
</tr>
<tr>
<td>11.2</td>
<td>Sanitation enhancement</td>
<td>34</td>
</tr>
<tr>
<td>11.3</td>
<td>Community waste management</td>
<td>35</td>
</tr>
<tr>
<td>11.4</td>
<td>Improved cooking devices</td>
<td>35</td>
</tr>
<tr>
<td>11.5</td>
<td>Community awareness and capacity building</td>
<td>35</td>
</tr>
<tr>
<td>11.6</td>
<td>Public health support</td>
<td>35</td>
</tr>
<tr>
<td>11.7</td>
<td>Emergency medical response</td>
<td>35</td>
</tr>
<tr>
<td>12</td>
<td>Community Labor and Employment Plan</td>
<td>36</td>
</tr>
<tr>
<td>13</td>
<td>Influx Management Plan</td>
<td>37</td>
</tr>
<tr>
<td>13.1</td>
<td>Community-based Public Awareness Program in project-area communities</td>
<td>37</td>
</tr>
<tr>
<td>13.2</td>
<td>Construction workers’ HIV/AIDS Awareness Program</td>
<td>37</td>
</tr>
<tr>
<td>Annex</td>
<td>Map over the affected villages and administrative areas</td>
<td>39</td>
</tr>
<tr>
<td>Annex</td>
<td>Socio-economic and cultural overview of the villages to be relocated</td>
<td>40</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table VI. 1. Gaps between the MIGA policy on *Involuntary Resettlement* (PS5 and PS7) with the Lao PDR 2016 Decree (No. 84/GOL) and the Government of Vietnam policies .................. 4
Table VI.2. Villages in the expected reservoir inundation area of My Ly HPP to be relocated 14
Table VI.3. Villages in Keng Du Commune in Vietnam with land areas to be inundated ....... 15
Table VI. 4 Villages in the potential downstream impact area..................................... 15
Table VI. 5 Entitlement matrix for resettlement and compensation .............................. 27
## ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABP</td>
<td>Awareness Building Plan</td>
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<tr>
<td>ARAP</td>
<td>Acquisition Resettlement Action Plan</td>
</tr>
<tr>
<td>Project AI</td>
<td>Project Area of Influence</td>
</tr>
<tr>
<td>BCESRP</td>
<td>Biodiversity Conservation and Environmental Service Restoration Plan</td>
</tr>
<tr>
<td>C&amp;R</td>
<td>Compensation and Resettlement</td>
</tr>
<tr>
<td>DIA</td>
<td>Direct Impact Area</td>
</tr>
<tr>
<td>EMRU</td>
<td>Emergency Medical Response Unit</td>
</tr>
<tr>
<td>FSL</td>
<td>Full Supply Level</td>
</tr>
<tr>
<td>GoL</td>
<td>Government of Lao PDR</td>
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<tr>
<td>GoV</td>
<td>Government of Vietnam</td>
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<tr>
<td>GRM</td>
<td>Grievance Redness Mechanism</td>
</tr>
<tr>
<td>Ha</td>
<td>Hectare</td>
</tr>
<tr>
<td>HCMC</td>
<td>Ho Chi Minh City</td>
</tr>
<tr>
<td>HH</td>
<td>Household</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>Human Immunodeficiency Virus Infection/Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>HPP</td>
<td>Hydropower Project</td>
</tr>
<tr>
<td>IC</td>
<td>International Consultant</td>
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<tr>
<td>ICP</td>
<td>Informed Communication and Participation</td>
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<tr>
<td>ICS</td>
<td>Improved cooking stoves</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>IFC PS</td>
<td>IFC Performance Standards</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Lao Peoples Democratic Republic</td>
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<tr>
<td>NTFPs</td>
<td>Non-timber Forest Products</td>
</tr>
<tr>
<td>ODA</td>
<td>Official Development Assistance</td>
</tr>
<tr>
<td>OP/BP</td>
<td>Operational Policy/Bank Procedures</td>
</tr>
<tr>
<td>PAF/PAP</td>
<td>Project Affected Family/Project Affected Person</td>
</tr>
<tr>
<td>PCDP</td>
<td>Public Communication and Disclosure Plan</td>
</tr>
<tr>
<td>PO</td>
<td>Project Owner / Proponent</td>
</tr>
<tr>
<td>RAP</td>
<td>Resettlement Action Plan</td>
</tr>
<tr>
<td>RCMP</td>
<td>Reservoir Catchment Management Plan</td>
</tr>
<tr>
<td>REMLRP</td>
<td>Resettlement and Ethnic Minority Livelihoods Restoration Plan</td>
</tr>
<tr>
<td>SIA</td>
<td>Social Impact Assessment</td>
</tr>
<tr>
<td>SBZ</td>
<td>Safeguard Buffer Zone</td>
</tr>
<tr>
<td>SFE</td>
<td>Soil Fertility Enhancement</td>
</tr>
<tr>
<td>STDs</td>
<td>Sexually Transmitted Diseases</td>
</tr>
<tr>
<td>VND</td>
<td>Vietnamese Dong</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
</tbody>
</table>
CHAPTER 1 PURPOSE AND AIM OF THE REMLRP

The purpose of the Resettlement and Ethnic Minority Livelihoods Restoration Plan is to minimize adverse socio-economic and cultural impacts from the project on the people to be affected by the My Ly Hydropower Project (HPP) and to ensure that the status of their residential areas and their livelihoods and living standards after the Project will be at least at the same level or improved compared to their current situation. The aim of the Plan is to ensure a feasible resettlement of the Project affected people and improve their livelihoods. Further the Plan aims to improve the health and sanitation status of the resettled communities, contribute to their employment opportunities and mitigate potential social and health risks related to the HPP construction.

This REMLRP contains the process to be followed for preparing the Resettlement Action Plan (RAP), the Livelihoods Restoration Plan, the Community Health and Sanitation Plan, the Community Labor and Employment Plan and the Influx Management Plan that Proponent is responsible to provide for My Ly HPP. The REMLRP also outlines the institutional responsibilities and Proponent cooperation with national agencies related to the planning, implementation and monitoring of these plans and programs.
CHAPTER 2 RELEVANT POLICIES

2.1 Policies of the Government of Vietnam

The legal framework regarding land acquisition, compensation and resettlement in Vietnam is based on the Constitution of the Socialist Republic of Vietnam (2013) and the Land Law 2013, and other relevant decrees/guidelines. The major principal legal documents to be considered include:

- Land Law No.45/2013/QH (2013) effective from July 1 2014
- Decree No. 43/2014/ND-CP detailing a number of articles of the Land Law
- Decree No. 01/2017/ND-CP amending the decree guiding the Land Law
- Decree No.44/2014 of the Government regulating land prices
- Decree No. 104/2014/ND-CP on land prices
- Circular detailing a number of articles of the government’s decree no. 43/2014/ND-CP and decree no. 44/2014/ND-CP (15 May 2014)
- Decree No.47/2014/NĐ-CP of the Government of May 5th, 2014 on compensation, support and resettlement upon land expropriation by the State, which is effective from July 1, 2014
- Circular No. 37/2014/TT-BTNMT of 30 June 2014 on detailed regulations on compensation, support, and resettlement upon land expropriation by the State
- Decree No.38/2013/NĐ-CP on management and utilization of official development assistance (ODA) and concessional loans from donors

The Land Law prescribes the rights and responsibilities of the State in land ownership, management and use regimes, as well as the rights and obligations of land users. It stipulates the basic principles for land classification and valuation, land allocation, land lease and change of land use purpose. The law contains the principles and regulations for compensation for different types of land, crops and trees, and gives the regulation for land registration and the government organization related to land administration. The Land Law also includes the basic principles for resettlement. Many decrees and circulars have been issued for clarifying and explaining various items in the Land Law.

At the local level, provinces have issued separate decisions on the basis of the Land Law and other legal documents relating to the planning and implementation of resettlement at the provincial level.

2.2 Policies of the Government of Lao PDR

Established in 2005 and revised in 2016, Decree on Compensation and Resettlement of People Affected by Development Projects (Decree No. 84/GOL, 2016) provides the principles, mechanisms and procedures to mitigate adverse social impacts and to compensate damages that result from involuntary land acquisition or repossession of land and fixed or movable assets. The Compensation and Resettlement (C&R) decree aims to ensure that PAP and PAH are compensated and assisted to improve or maintain their pre-project incomes and standard of living, and are not made worse off than they would have been without the project. The provisions will be applied during the preparation and implementation of the social impact assessment (SIA), the social impact mitigation and monitoring plan, and/or the ARAP/RAP. The Decree is largely consistent with the main principles of the World Bank’s Involuntary Resettlement policy (OP/BP 4.12).

2.3 Resettlement policy of the WB group

The involuntary displacement and resettlement policy of the WB group include OP/BP 4.10 on Indigenous people, OP/BP 4.12 on Involuntary resettlement, and most
importantly, MIGA (2013) Performance Standard PS 5 on Land acquisition and involuntary resettlement and PS 7 on Indigenous people\(^1\).

The objectives of the MIGA/WB involuntary resettlement policy that the Borrower must comply to are:

- To avoid, and when avoidance is not possible, minimize displacement by exploring alternative project designs;
- To avoid forced eviction;
- To anticipate and avoid, or where avoidance is not possible, minimize adverse social and economic impacts from land acquisition or restrictions on land use by (i) providing compensation for loss of assets and replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected;
- To improve, or restore, the livelihoods and standards of living of displaced persons;

To improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites.

2.4 Comparison of the policies of Vietnam and Lao PDR with the MIGA policy

There are differences between the national governments' laws, policies and regulations related to land acquisition/resettlement and the MIGA policy. More so with the Vietnamese policies, and the Article 46, Clause 1 in the GoV Decree No. 38/2013/ND-CP establish that whenever there is discrepancy between provisions in the Vietnamese law and international regulations in projects funded through ODA or concessional donor loans, the international ones are applied. The following table highlights the key differences in order to establish a basis for the applicable principles for compensation, assistance and livelihoods restoration support for the affected households to be applied in the My Ly HP

\(^1\) MIGA PSs are identical to IFC PSs 2012.
Table VI. 1. Gaps between the MIGA policy on *Involuntary Resettlement* (PS5 and PS7) with the Lao PDR 2016 Decree (No. 84/GOL) and the Government of Vietnam policies

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>MIGA PS (PS 5 &amp; PS 7)</th>
<th>GOVERNMENT OF VIETNAM</th>
<th>GOVERNMENT OF LAOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy objectives</td>
<td>PAP should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation.</td>
<td>Not mentioned. However, there is a provision of support to be considered by PPC to ensure displaced people have a place to live, to stabilize their living and production (Decree 47: Article 25). In case the amount of compensation/support is not enough for resettled people to buy a minimum resettlement plot, they will be financially supported to be able to buy a minimum resettlement plot (Land Law 2013: Article 86:4; Decree 47: Article 27).</td>
<td>PAP are compensated and assisted to improve or maintain their pre-project incomes and living standards. (Decree 84: Article 1).</td>
</tr>
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</table>

1. Land property

- Support for affected households that have no recognizable legal right or claim to the land they are occupying
  - Financial assistance to all PAP to achieve the policy objective (to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of the project implementation, whichever is higher)
  - Only agricultural land used before July 1, 2004 is eligible for compensation. Other cases may be considered for assistance by PPC if needed. (Land Law Article 64, Article 92:2, Article 77:2; Decree No. 01/2017).
  - PAP who do not have legal land title, land use certificate or other acceptable documentation indicating their land use right, including customary and traditional land use right, only have the right to claim compensation for their lost assets such as house/structures, trees and/or crops, and not land (Decree 84: Article 8:4).

- Compensation for
  - Compensation at full cost for
  - No compensation, but PPC may
  - PAP who do not have legal land
<table>
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<tr>
<th>ISSUE</th>
<th>MIGA PS (PS 5 &amp; PS 7)</th>
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<th>GOVERNMENT OF LAOS</th>
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<tbody>
<tr>
<td>illegal structure</td>
<td>all structures regardless of legal status of the PAP’s land and structure</td>
<td>consider assistance (Decree 47: Article 25).</td>
<td>title, land use certificate or other acceptable documentation indicating their land use right, including customary and traditional land use right, only have the right to claim compensation for their lost assets such as house/structures, trees and/or crops, and not land (Decree 84: Article 8:4).</td>
</tr>
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2. Compensation

Methods for determining compensation rates

| Compensation for lost land and other assets should be paid at full replacement costs. | Compensation for land is calculated at price that is consistent with the local market prices. PPCs are granted to identify compensation prices for different categories of assets. (Land Law Article 112) Independent land valuator can be used to determine land prices, which will be appraised by land appraisal board before PPC’s approval (Land Law Article 115; Decree 44:Article 17); Procedures for land price determination are regulated in Decree 44: Article 12. | Value for compensation for land, constructed facilities, crop products, livestock and potential incomes are estimated in consultation with affected people by selecting the right and appropriate options based on prices applied by the state, market prices or average prices applicable for period of compensation and based on the types of properties and locations. The prices applied by the state (middle prices) are the prices specified in a separate regulation which are identified and regulated by the Ministry of Natural Resources and Environment from time to time. (Decree 84: Article 9) |

Compensation for loss of income sources or means of | Loss of income sources should be compensated (whether or not the affected | Assistance in respect of income loss is given only for registered businesses. Assistance measures | Provision of agriculture land in appropriate ways including the creation of new livelihood options |
<table>
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<tr>
<th>ISSUE</th>
<th>MIGA PS (PS 5 &amp; PS 7)</th>
<th>GOVERNMENT OF VIETNAM</th>
<th>GOVERNMENT OF LAOS</th>
</tr>
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<tbody>
<tr>
<td>livelihood</td>
<td>persons must move to another location)</td>
<td>to restore income sources are provided. (Decree 47: Article 19-21).</td>
<td>and stable income generation activities and promotion of local crafts/industry in addition to agricultural production activities for the affected people. (Decree 84: Article 15:1)</td>
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<tr>
<td>Compensation for indirect impact caused by land or structures taking</td>
<td>it is good practice for the borrower to undertake a social assessment and implement measures to minimize and mitigate adverse economic and social impacts, particularly upon poor and vulnerable groups.</td>
<td>Land owners are eligible for compensation for damage on assets attached to land or for breach in business activities (Land Law Article 88). No special consideration to poor or vulnerable mentioned.</td>
<td>Not mentioned.</td>
</tr>
<tr>
<td>Livelihoods restoration and assistance</td>
<td>Provision of livelihoods restoration and assistance to achieve the policy objectives</td>
<td>Livelihood restoration and assistance measures are provided. No follow-up for full livelihoods restoration after resettlement completion. (Decree 47: Articles 19-25).</td>
<td>Parallel with the resettlement plan, a livelihoods rehabilitation plan have to be established (Decree 84: Article 13)</td>
</tr>
<tr>
<td>Consultation and implementation, specially confirming the eligibility criteria for compensation and assistance, and access to Grievances Redress Mechanisms</td>
<td>Consultation during planning in coordination with CPC (consultation on draft plan of compensation, support and resettlement and plan for training, career change and job searching facilitation. Not mentioned that the affected people should attend, but the purpose is dialogue with those who are opposing the plan, in order to improve the plan. No mention of meaningful consultation or method of consultation. (Land</td>
<td>Compensation and resettlement shall be carried out in compliance with principles of ensuring equality, correctness, transparency, disclosure and fairness (Decree 84: Article 5:2); and ensuring coordination, consultation and participation between the project owner, affected people, state agencies and other relevant stakeholders (Decree 84: Article 5:3).</td>
<td></td>
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</table>
### 3. Grievance redress mechanism

<table>
<thead>
<tr>
<th>ISSUE</th>
<th>MIGA PS (PS 5 &amp; PS 7)</th>
<th>GOVERNMENT OF VIETNAM</th>
<th>GOVERNMENT OF LAOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grievances</td>
<td>Grievance redress mechanism should be independent</td>
<td>The same governmental body makes decisions on compensation and resettlement and handles grievances. However, if no agreement can be reached, complaints can be brought into court by PAP. (Decree 47; Circular 37)</td>
<td>In the first hand complaints are submitted to the Operation unit and Management unit of compensation and resettlement that coordinate with project owner to settle the request. If no agreement is reached, PAP are entitled to file a request to Province Committee for Compensation and Resettlement for settlement with project owner. (Decree 84: Article 24:1)</td>
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### 4. Monitoring & evaluation

| Due Diligence | Internal and independent monitoring are required | Citizens are allowed to supervise and report on breaches in land use and management on their own (or through representative organizations), including land recovery, compensation, support and resettlement (Land Law 2013: Article 199). There are no explicit requirements on either internal or external monitoring of resettlement. | Project owner must set up a management unit for compensation and resettlement to be in charge of regular periodic internal monitoring. The unit is obliged to deliver reports to state audit-inspection organizations on monitoring and investigation of the implementation of the plans for compensation and relocation and for livelihoods restoration (Decree 84: Article 27) |
CHAPTER 3 PROJECT LOCATION

The 180MW My Ly Hydropower Project is located in the boundary area of Vietnam - Lao PDR on the Ca River. The main components and auxiliary areas are located about 1.6km from the national border in My Ly commune, Ky Son district, Nghe An province, Vietnam. The total length of the reservoir is approximately 42km. The first 1.6km long passage of the reservoir is located in Vietnam territory. The middle passage of the reservoir is 38.4km length and is located on Vietnam - Lao PDR boundary line, in which the right bank of the reservoir is located in Nghe An Province, Vietnam and the left bank of the reservoir is located in Houaphanh and Xiangkhoang Provinces of Lao PDR. The reservoir tail end is located entirely in the Lao territory in Xiankhoang province.

The area of the Project is one of the most remote and poorest ones in both the two countries. It lies isolated in a forested, mountainous, international border area that is sparsely populated and provides local people with few livelihoods options apart from upland cultivation and utilization of forest and aquatic resources. Social and livelihoods services delivery, trade and market access are highly deficient due to poor transportation infrastructure with villages connected by earthen roads that are not accessible year round, and most of the area outside the national electricity network in both countries.
CHAPTER 4 DIRECT IMPACT AREA

4.1 Inundation area

The My Ly HPP reservoir at FSL will have an elevation of 300 m and an inundation area of 12.47 km$^2$. The area is upland forested area with steep slopes, the river is in most parts rocky with high current. Several isolated villages are located along the river close to the river bank and are in the reservoir inundation area.

Three villages in Vietnam and five villages in Laos are expected to be inundated by the My Ly HPP reservoir. In Keng Du commune the village of Keng Du and in My Ly commune downstream Keng Du, Cha Nga and Xop Duong villages by the river will be inundated.

In Kouan District in Laos, five villages will be inundated by the reservoir: Phiangxang, Sopsan, Sopkang, Kengkor and Phiangthat.

The affected villages and administrative areas can be seen in the Map in Annex VI.1.

4.2 Project construction areas

By the dam site in My Ly commune, Xang Tren village is located 1km below the planned dam site and will be in the midst of the planned main construction area of the HPP.

4.3 Downstream stretch

It is estimated that downstream the planned dam about 28.4km of the river will be potentially affected by low flow during the dry season. Nine villages are located along this stretch of the river. Two villages the stretch of 2.8km downstream the dam, Yen Hoa and Xang Tren in the proposed resettlement site 1.5km downstream its current location, will be affected by a significantly reduced water flow during the dry season.

4.4 Socio-economic and cultural features of the affected villages

4.4.1 Population, ethnicity and poverty

Almost all the people in the project areas in both countries originate from different ethnic groups/minorities$^2$. In the Vietnamese area they are Thai and Kho mu ethnic minority people and in Laos Kho mu and Thai$^3$ with their own identity, language and

$^2$ In Vietnam, the Government recognises totally 54 ethnic groups, of which the Kinh (Vietnamese) is the majority population with 87% of the national population, and all the other groups are defined as ethnic minorities. In Laos, people are ethnically divided into three main groups: (1) The Lao Loun, who are also called the Lao Thai or the Lowland Lao, who make up approx. 75% of the population in the country; (2) Lao Theung, the midlands people, consisting of 58 sub-groups, among them the Kho mu; and (3) Lao Soung, the highland people consisting of the Hmong and Yao as the main sub-groups and making about 10% of the national population. The term “ethnic minority” is not used in Laos. (Source: http://minorityrights.org/minorities;https://www.luangprabang-laos.com/The-people-tribes-and-ethnical). Main part of the My Ly HPP is located in Vietnam and the Proponent (project owner) is Vietnamese; people in the villages to be affected by the Project share the same ethnic self-identification on both sides of the border, they are related to each other and have relatives in villages across the border. Therefore the Vietnamese term *ethnic minority* is used for the project-affected people with the ethnic identities that in Vietnam are defined as ethnic minority people.

$^3$ another spelling “Tai”, and also reported as Lao Loun.
cultural features. Most villages are inhabited with one ethnic group and people have family ties with each other; The ethnic groups in Vietnam and Laos are related to each other, some people have moved across the national border and settled down on the other side, and villagers have regular social and economic interaction with each other over the border river.

All the households in the affected villages are extremely poor, under of just above the poverty line as defined by the GoV\textsuperscript{4} and the GoL\textsuperscript{5}.

4.4.2 Infrastructure and services

The affected villages are located remotely and can be reached either by boat in the Ca River or along soil roads that are hardly vehicle accessible year round. Local people mainly travel either by wooden boats, on foot or by motorcycles. In all the riverside villages, nearly every household owns a boat, and Ca river is the main transportation route for both people and goods. The Lao villages are located at a road distance of up to 80km from the District center, so when they e.g. need health services, they rather travel by boat to My Ly commune center than to the Kouan district town.

The villages to be affected by My Ly HPP in both countries are outside the national electricity network, and most all households have a micro-hydropower (pico) generator in the Ca River or in a tributary stream next to the village, providing enough electricity for a few hours of lighting and TV. In the Lao villages households use both micro hydro generators and solar panels for electricity generation.

In the Vietnamese villages household water is led from tributaries and mountain streams to water tanks in villages that have been constructed through government or donor programs. Additionally, villagers use the Ca River and its tributaries for washing and bathing, as well as for watering animals. In the Lao villages water is likewise lead from a stream through a tube to a water post with tap centrally located in the village.

4.4.3 Health and Sanitation

Hygienic conditions in the remote villages are in general very poor. Most villages lack toilets, and the existing ones are very rudimentary. Pigs, poultry and dogs roam freely around in the villages. Villages lack any rubbish disposal system, and litter may lie anywhere in and outside the village including the riverside. The general standard of knowledge about health, hygiene and nutrition is very poor and based on tradition.

No health services are available in villages, and the distance to commune or district health center is too long and costly for people to travel. Health problems are treated with medicinal plants, herbs and fungi collected in the forest. Most common health ailments include headache, diarrhea, fever, respiratory infections, itchy eyes, and gynecological problems. Most always babies are delivered in villages, and women seldom attend any controls during pregnancy. Most children are vaccinated in the

\textsuperscript{4} The official poverty line 2016–2020 issued through the GoV Decision No. 59/2015/QD-TTg Promulgating multidimensional poverty levels applicable during 2016-2020 is for urban areas 900,000 VND/capita/month and for rural areas 700,000 VND/capita/month. 1USD=22,700VND (22 Sep 2017)

\textsuperscript{5} The official poverty line 2010–2015 issued through the Decree No.285/PO Poverty and development standard 2010-2015 is for country level 192,000 LAK/capita/month, for urban areas 240,000 LAK/capita/month and for rural areas 180,000 LAK/capita/month. 1USD≈8,300LAK (22 Sep 2017).
villages through monthly mobile vaccination services provided by the commune health center, and few cases of infant or maternal deaths are reported.

4.4.4 Food and nutrition

Upland rice is the main cultivation crop and the staple food of all the affected people. Forest and river provide the resource base for other daily food. Women collect wild growing vegetables, roots, bamboo shoots and mushrooms in the forest several times every day for household food. Men are hunting rats, birds and bamboo rats for food on a daily basis. Another main protein source base is the river: Men are fishing with nets from boats and shore, women are fishing with baskets, and even children are collecting snails and shrimps in the shallow waters. Poultry with chicken and ducks is kept not only for selling but also for family food, but pigs are eaten more seldom at special occasions, during annual celebrations and family festivities such as weddings. Food is prepared on open fire, and both men and women collect firewood in the forests.

4.4.5 Education

According to the Vietnamese government standard, there is a kindergarten and a primary school in every village, in Laos there are primary schools in villages. Secondary boarding school is located in the commune center in Vietnam, and in Laos each village group has a secondary boarding school. Many ethnic minority children drop out of school after primary school or during the secondary school, and very few, if any, continue to high school that is located in the district center.

In the villages the ethnic minority people use their own ethnic language in everyday communication. Women regularly have lower education level than men, because girls drop out of school early during the secondary school in order to help their families with household work. Many elder ethnic minority women are not able to communicate fluently in the national language, and up to 50% of the elder women are illiterate.

4.4.6 Livelihoods

All the inhabitants in the project areas are farmers living on low-productive rain-fed upland rotational swidden agriculture, combined with forest resources utilization, fishery and livestock farming. Many households do not have sufficient food year round, in some villages 50% of the households lack rice during the period from March to August prior to the annual harvest. Apart from upland rice, all farmers cultivate maize and cassava for animal fodder. Vegetables and fruit trees are grown on riverbanks, but in many areas the land along the Ca River is too steep and rocky to allow cultivation activities.

Livestock farming is the most important livelihood after farming for people in the remote villages. All households have chicken and geese for family food, pigs are grown mostly to be sold but also to be eaten at special occasions as festivity food in the village. Animal diseases and deaths are not uncommon, especially among pigs and chicken that are roaming freely in the villages, and epidemics and cold weather kill even cattle. Animal deaths are reported to be more common in the villages in Vietnam, where veterinary services appear to be less available than in Laos, where villagers' knowledge in animal breeding appears to be somewhat better than in the Vietnamese villages. Most families have a few cows and some households even have buffaloes, which both are kept entirely for selling to generate cash. Together with goats kept by some farmers they are grazing in riverbank grasslands and forests near the upland fields. Animals can roam freely because there are no wildlife predators in the nature. Veterinary services are not well developed in Vietnam but are better available in Laos.
**Forest resources** are the crucial base for the daily food and provide approximately 50% or more of the livelihoods of the people in the riverside villages. Non-timber forest products are important for household food, medicine supply and economy. Women collect bamboo shoots and wild-growing vegetables and mushrooms every day for family food. Some NTFPs like mushrooms, bamboo shoots and medicinal herbal plants are sold to traders. Men collect firewood and do logging of timber that is both used for construction of houses and other structures in the village, and sold to traders. Hunting of birds, rats, bamboo rats, squirrels and snakes is done regularly for household food, mainly with crossbows and traps, and wild boars are hunted during the harvest season near the upland fields.

**Ca River** is important as a source of livelihoods and as a transportation way for upland products, timber, firewood and other goods. Almost all households in the villages along the Ca River to be affected by the HPP have boats and are fishing for family food on a daily basis and additionally selling fish when the catch is large enough; fish is dried and salted and also made into fish sauce to be sold later. Men are fishing with nets both from boats and from the shore, women and children are using baskets, and also collecting shrimps, snails and moss in the shallow river. Fish is an important protein source for the inhabitants along the Ca River. Riverbanks are in some places also used for home gardening, and they provide pasture for animals as well. However, large parts of the river and riverbanks are very rocky and many areas are steep, where riverbank cultivation is not possible.

Due to the remote location and poor transportation infrastructure trade and business is very limited. There are no commune markets, only a district market in the district town. In most villages, there is one or two petty shops selling daily consumer goods like rice, salt, fish sauce, drinks, sweets and gasoline. Mobile Vietnamese traders visit villages in both countries for buying and selling goods.

There are very few available non-agricultural labor opportunities. Both permanent and seasonal labor migration of mostly young men and women but even entire families is very common both in Vietnam and in Laos.

### 4.4.7 Cultural heritage

People in the villages along the Ca River belong to the ethnic groups of Thai and Kho mu, which share the same kind of worldview and cultural features through living for generations in the same geographical environment. Forest and river provide their needed resources and form the context for their material and spiritual culture. The local worldview contains gods/spirits related to different elements and places in nature, additionally every family respects its household gods/spirits and ancestors’ spirits.

The physical elements of the spiritual culture include spirit forests which regularly is located at some distance (about 1km or more) from the village. People are not allowed to utilize forest resources in the spirit forest, however, cattle can be left grazing there. Death ceremonies are related to the river, and village graveyard is often located near the river. Each village has a village worship place that is importantly located under the biggest tree in or outside the village, and in some villages has a small wooden spirit house on place, in some villages only a small wooden platform for offerings. Annual ceremonies take place there twice a year, the month of the year depending on the ethnic group residing in the village, typically connected to the cultivation cycle in the upland fields.
4.4.8 Gender roles and issues

In the project-area villages, women work in upland fields, in forest and by the river side by side with men in the livelihoods activities. Women in the ethnic minority villages have in general lower education level than men, and especially elder women are illiterate and cannot fluently use and understand the national language. Especially the Kho mu girls drop out of school early in order to help their families with household work and livelihoods activities. It is common for these girls to get married when 14-15 years only. Women are less mobile than men, and they rarely travel outside their village and livelihoods activity areas. Men are decision makers in village, and women are not used to speak up or express their opinions in meetings. Due to the low educational level and limited knowledge of ethnic minority women it is difficult for them to learn new skills for improving their livelihoods and living conditions.

4.4.9 Major reasons for prevailing poverty

There are very few available livelihoods opportunities apart from upland cultivation combined with livestock farming, fishing and forest resources utilization. The available production land is located in high and steep areas, and in the Vietnamese territory where the available land is not sufficient for the farming population and pressure on land is therefore high, erosion and poor soil quality contribute to very low field yields. Cultivation methods are manual, seeds are local, farmers lack fertilizers and soil improvement methods, which lead to low productivity with hardly enough food for household annual consumption. Every year many households in the project-area villages lack rice during the months before the annual harvest.

Cultivation is rain fed and there are no irrigation systems. Agricultural and livestock services are very deficient in Vietnam, in Laos veterinary services appear to be somewhat better available and consequently animal mortality lower than in Vietnam. Support and advice from the commune/district is lacking, seeds are not provided at an optimal time, and farmers lack sufficient skills to take care of the animals that they receive through government development programs.

Villages are remote, far away from the district center both in Laos and in Vietnam, and poor road infrastructure affects people’s mobility and market access. Market infrastructure is undeveloped with the only available markets in the district towns. Most villagers rarely visit the district center, and women do not even go to the commune center or village group center more than 1-2 times per year. Mobile traders buy agriculture and forest products from farmers in the villages for low prices and sell them household goods for high prices.

All the affected people are ethnic minorities who use their own language in everyday communication. Many elder people are illiterate and the general educational level is low, especially in the Vietnamese villages. Many people are not fluent in the national language and lack ability to take opportunities for health, hygiene, livelihoods or other living standards improvements. Many children in Vietnam drop out of secondary school in order to contribute to the economy of their poor families, and grow up with deficient educational level which will further hamper their capacity to take new opportunities to escape poverty.
CHAPTER 5  PROJECT IMPACTS

5.1 Reservoir inundation

5.1.1 Villages to be inundated

The reservoir is expected to inundate three villages in Vietnam and five villages in Laos that have to be relocated. In Keng Du commune the village of Keng Du with 46 households and 183 people need to be relocated. In My Ly commune Cha Nga village with 435 people in 97 households and Xop Duong village with 224 people in 61 households need to be relocated. Inhabitants in all these villages are Thai ethnic minority people.

In Kouan District in Laos, five villages will be inundated by the reservoir and need to be relocated from the reservoir area. They are Phiangxang with 36 Kho mu ethnic minority people in 9 households, Sopsan with 89 Thai people in 16 households, Sopkang with 320 Thai people in 48 households, Kengkor with 150 Kho mu and Thai people in 48 households, and Phiangthat village with 276 Kho mu people in 44 households.

All the households in the affected villages are extremely poor, under of just above the poverty line as defined by the GoV and the GoL. Table VI.1 below presents an overview of the villages that will be inundated in the reservoir area of the HPP. A description of each affected village is enclosed in Annex VI.2.

Table VI.2. Villages in the expected reservoir inundation area of My Ly HPP to be relocated

<table>
<thead>
<tr>
<th>Village</th>
<th>HH</th>
<th>Pop.</th>
<th>HH poverty %</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Ly commune – Vietnam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keng Du commune – Vietnam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keng Du</td>
<td>46</td>
<td>183</td>
<td>78</td>
<td>Thai</td>
</tr>
<tr>
<td>Cha Nga</td>
<td>97</td>
<td>435</td>
<td>60</td>
<td>Thai</td>
</tr>
<tr>
<td>Xop Duong</td>
<td>61</td>
<td>224</td>
<td>90</td>
<td>Thai</td>
</tr>
<tr>
<td>Xang Tren</td>
<td>174</td>
<td>688</td>
<td>84</td>
<td>Thai</td>
</tr>
<tr>
<td>Subtotal My Ly commune</td>
<td>332</td>
<td>1,347</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Vietnam</td>
<td>378</td>
<td>1,530</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kouan district – Laos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phiangxang</td>
<td>9</td>
<td>36</td>
<td>100</td>
<td>Kho mu</td>
</tr>
<tr>
<td>Sopsan</td>
<td>16</td>
<td>89</td>
<td>88</td>
<td>Thai (Lao Loum)</td>
</tr>
<tr>
<td>Sopkang</td>
<td>48</td>
<td>320</td>
<td>63</td>
<td>Thai (Lao Loum)</td>
</tr>
<tr>
<td>Kengkor</td>
<td>29</td>
<td>150</td>
<td>100</td>
<td>Kho mu, Thai</td>
</tr>
<tr>
<td>Phiangthat</td>
<td>44</td>
<td>276</td>
<td>93</td>
<td>Kho mu</td>
</tr>
<tr>
<td>Total Laos</td>
<td>146</td>
<td>871</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total My Ly HPP</td>
<td>524</td>
<td>2,401</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Xang Tren village is located in the middle of the project main construction area and will be highly impacted by the construction, its related activities and workers’ camp. The village should be relocated and is therefore included in the list of villages to be relocated.

5.1.1.1 Land to be inundated

Added to the villages that will be inundated, land in the area of three villages in Keng Du commune in Vietnam and three villages in Nonghed District in Laos is located within
the reservoir area. The villages that will lose land in the reservoir can be seen in Table VI.3.

Table VI.3. Villages in Vietnam and Laos with land areas to be inundated

<p>| MY LY HPP VILLAGES WITH LAND LOSSES |</p>
<table>
<thead>
<tr>
<th>Village</th>
<th>HH</th>
<th>Pop.</th>
<th>Ethnicity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keng Du Commune – Vietnam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huoi Phuon 1</td>
<td>93</td>
<td>388</td>
<td>Kho mu</td>
<td>Land affected that is used for animal grazing</td>
</tr>
<tr>
<td>Huoi Phuon 2</td>
<td>138</td>
<td></td>
<td>Kho mu</td>
<td>Land potentially affected, status to be confirmed.</td>
</tr>
<tr>
<td>Hat Ta Ven</td>
<td>130</td>
<td>636</td>
<td>Kho mu</td>
<td>Land potentially affected, status to be confirmed.</td>
</tr>
<tr>
<td>Huoi Xui</td>
<td>138</td>
<td>564</td>
<td>Kho mu</td>
<td>Land affected, includes cultivation land</td>
</tr>
<tr>
<td>Nonghed District – Laos</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Keochia</td>
<td></td>
<td></td>
<td></td>
<td>Land by reservoir affected, riverbank very steep and no settlements along the river</td>
</tr>
<tr>
<td>Phianghong</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sopten</td>
<td></td>
<td></td>
<td></td>
<td>The very tail end of the reservoir, no settlements along the river</td>
</tr>
</tbody>
</table>

5.2 Construction area impacts

Xang Tren village in My Ly commune with 688 Thai ethnic minority people in 174 households is located 1km downstream the river from the planned dam site and in the midst of the project construction areas. This village will be highly impacted of the planned workers’ camp with estimated approx. 3,400 workers next to it, and of all the construction transportations in the road along the village border as well as of dust, noise, pollution and material disposal from the dam construction in the vicinity of the village. Xang Tren village should be relocated.

5.3 Downstream water regime

It is estimated that downstream the planned dam about 28.4km of the river will be potentially affected by low flow during the dry season. There are nine villages along this stretch of the river, however, all the villages downstream Yen Hoa village that is located 2.8km downstream the planned My Ly dam site, are affected by the Ban Ve HPP more than 80 km downstream. The identified downstream villages can be seen in Table VI.4 below.

Table VI. 4 Villages in the potential downstream impact area

<table>
<thead>
<tr>
<th>Village</th>
<th>HHs</th>
<th>Pop.</th>
<th>HH poverty %</th>
<th>Ethnicity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yen Hoa</td>
<td>99</td>
<td>442</td>
<td>70</td>
<td>Thai, 3 HHs Kho mu</td>
<td>2.8km downstream the dam site.</td>
</tr>
<tr>
<td>Xieng Tam</td>
<td>48</td>
<td>287</td>
<td>67</td>
<td>Thai, 5 HHs Kinh</td>
<td>Commune center, 5.1km downstream the dam site, within tail end of the Ban Ve HPP reservoir.</td>
</tr>
<tr>
<td>Xop Tu</td>
<td>175</td>
<td>774</td>
<td>65</td>
<td>Thai, Kho mu, Kinh, Hmong</td>
<td>8.7km downstream the dam site, within impact area of the Ban Ve HPP reservoir.</td>
</tr>
<tr>
<td>Village</td>
<td>HHs</td>
<td>Pop.</td>
<td>HH poverty %</td>
<td>Ethnicity</td>
<td>Location</td>
</tr>
<tr>
<td>-------------</td>
<td>-----</td>
<td>------</td>
<td>--------------</td>
<td>-------------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Hoa Ly</td>
<td>158</td>
<td>702</td>
<td>74</td>
<td>Thai, 3 HHs Kho mu</td>
<td>14.7km downstream the dam site, within the Ban Ve HPP reservoir.</td>
</tr>
</tbody>
</table>

Status of villages further downstream in the Ban Ve reservoir area

- Pieng Mung: Village located by a tributary and separated from the Ca River by hills.
- Xen My: Ban Ve resettlement village. No road access.
- Ban Tom: Ban Ve resettlement village. No road access.
- Cha Luan: Ban Ve resettlement village. No road access.
- Sop Pe: Ban Ve resettlement village. No road access. About 28.4km downstream My Ly dam site.

5.4 Physical losses due to reservoir inundation and dam construction

5.4.1 Loss of private property

Affected households will lose their private houses and attached assets. The structures include:

(i) family home

(ii) barn for preserving agricultural products

(iii) fence around the house

(iv) There is no grid electricity in the affected villages, and in the villages in Vietnam each household provides its own electricity through a mini-hydro generator in the river and in Laos each household has a micro-hydro generator or solar panels

(v) private boats that are used for fishing and river transportation

5.4.2 Loss of land

The land to be inundated consist of:

(i) residential land that each household has a land certificate on

(ii) land used for production: (a) upland cultivation land; (b) home garden; (c) riverbank cultivation land

(iii) forest that is utilized for: (a) timber logging for house construction and for selling; (b) hunting animals for household food and for selling; (c) collecting NTFPs at a daily basis for household food, such as wild growing vegetables, bamboo shoots, mushrooms; (d) collecting firewood

(iv) animal grazing land

5.4.3 Loss of public infrastructure

The reservoir will inundate public infrastructure in villages and adjoining areas, including:
(i) Village access road
(ii) Inter-village roads
(iii) Water supply system with water tanks and water pipes leading water from streams to village
(iv) Village cultural house
(v) School, kindergarten (in Vietnam)

5.4.4 Loss of cultural heritage

All the villages have areas that are of cultural and spiritual importance. The reservoir will inundate:

(i) village spirit forest located at some distance from the village in a protection forest area
(ii) graveyard located outside village, often near the river
(iii) village worship place under a big tree with a small wooden spirit house or an altar for offerings

5.5 Non-physical losses due to reservoir inundation and dam construction

5.5.1 Loss of access to livelihoods resources

The project will inundate land, forest and water areas that are used for household livelihoods. The reservoir and dam construction will also cut accessibility to areas with livelihoods resources such as cultivation and forestry areas across the reservoir lake.

Moreover, the HPP will disturb aquatic resources (amount of fish, shrimps, snails and other crustaceans) and wildlife that are important for household food security in the Direct and Indirect Impact Area.

5.5.2 Loss of access to transportation

For most villages along the Ca River, the river is the main transportation way to services in My Ly commune center. People from the villages both in Vietnam and in Laos travel along the Ca River to My Ly commune health center when they need health services, and for buying and selling goods in the commune center. Villagers also travel by boat to other villages to socialize with relatives and to attend festivities such as weddings. The dam will cut off boat transportation between upstream and downstream areas of the dam, affecting people’s access to healthcare and government services as well as to trade.

Vietnamese mobile traders selling household and agricultural items to the local people in the project area and buying from them agricultural and forest products, animals, hunted wildlife and timber are using waterway to access the villages and areas along the river both in Vietnam and in Laos. The dam will cut off transportation between upstream and downstream areas of the dam and, consequently, trade connection to the affected villages, which is important for the project affected people’s access to consumer goods and for their cash income generation.
CHAPTER 6 INFORMED CONSULTATION AND PARTICIPATION, ICP

6.1 Previous consultations

The Proponent and hired national consultants in Vietnam and Laos have had several meetings with the local authorities at commune and village level about the proposed project during 2012-2016. People in the villages to be affected by the project have also been informed about the possibility of the HPP in a few instances. These consultations were not arranged in a manner to allow informed consultation and participation of the project affected people and cannot be considered as part of the ICP process.

6.2 ICP process initiated

The ICP process was initiated in June 2017 when a Vietnamese communication team hired by the PO according to advice from and designed by the IC undertook informed consultations in all the villages to be affected by the HPP. Villagers were provided information about the planned project, its impacts and proposed mitigation measures in a way and using communication methods that were understandable for them. Their questions, opinions, views and concerns on the project impacts and proposed mitigation were discussed and recorded in a village consent document in each village to be relocated. In those villages that will lose riverside land but not be relocated, the consultant had similar consultations with the Village leader. Details on the consultations, methodology used, issues dealt with, and the consent agreed with each village are reported in the Public Communication and Disclosure Plan (PCDP) for My Ly HPP (Volume V of this ESIA). The ICP/FPIC process obtained board community support for the Project and willingness to relocate.

6.3 Main concerns from the affected people

People in all the villages to be relocated agreed in principle to the relocation, but some of them expressed concerns and had alternative suggestions for the proposed relocation site. Relocation site and the available land and water resources in the location were the most important criteria for the affected villagers to agree to the relocation. Other main concerns that commonly came up in the consultations include:

- Compensation payment should be made in maximum two larger payments and not in several smaller ones, and the payment should be made in full before relocation;
- Affected households should receive compensation payment directly from the project owner, not through commune or village government authorities;

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6 The relocation site for each affected village in Vietnam is proposed in the GoV General Resettlement Planning document prepared by Nghe an Forestry Planning Division in 2015. This document is still being approved by Nghe An Province Government. The proposed relocation sites of the affected Lao villages are presented in the ESIA (2016) prepared by ASA Power Engineering Company, hired by the Proponent, which according to the document were identified together with District and village authorities and the PAP. The ESIA has to date not been approved by the GoL.
• Request that people will screen the proposed relocation site together with the project planning team in order to verify the location, land and water availability, etc.

• Request that people are involved in the design and relocation of the village, location of graves and spirit forest;

• Request that people are involved in monitoring the village construction, and that all the public infrastructure has to be in place before relocation of households;

• Forest protection and management and the income it brings local people is important, and should not be disrupted by the relocation;

• Land use certificates have to be issued on the new location to all households

• There has to be a monitoring and grievance system, and villagers have to be involved in the monitoring.

These and other expressed concerns are to be addressed by the Proponent in following community consultations.

The Project Communication and Disclosure Plan PCDP (see Annex V) sets the principles and procedures as required according to IFC PS 1 and PS 7 for an Informed Consultation and Participation process during the project planning, implementation and operation monitoring to ensure the Free, Prior, and Informed Consent (FPIC) of the project affected ethnic minority people in Vietnam and in Laos.
CHAPTER 7 GRIEVANCE REDRESS MECHANISM

The Proponent has to establish in the project planning phase a Grievance Redress Mechanism (GRM) consistent with the MIGA PS. The GRM will provide the Project Affected Persons (PAP) clear and practical mechanism to express their complaints and concerns about the project’s social and environmental performance. The GRM will allow the Proponent to receive and address any issues on land acquisition, compensation and relocation from the relocated people and host communities. The GRM mechanism will also allow the Proponent to address complaints from people in the Indirect Impact and Tertiary Impact Areas who may be affected due to the project activities and activities related to the presence of the project (such as project transports, camp followers and natural resources exploitation). The GRM will allow issues to be raised in a timely fashion, and include a mechanism designed to resolve disputes in an impartial manner.

The Grievance Redress Mechanism should be based on the local community organization and be culturally appropriate and understandable for the affected people. The GRM is an integral part of the Public Communication and Disclosure Plan (PCDP) enclosed in Volume V. Prior to relocation the GRM should be adapted to the local community organization structure.
CHAPTER 8  MONITORING

The Proponent has to establish procedures to monitor the implementation of the prepared mitigation plans for adverse social and environmental impacts and measure the effectiveness of their implementation. Project monitoring plan will provide the Proponent feedback of the implementation progress and identify any problems as early as possible to facilitate timely adjustment of the implementation of the mitigation plans.

The monitoring plan has to include: (i) measurable objectives of the mitigation plans; (ii) output indicators of the mitigation plans; (iii) provisions for collecting and managing project data records; (iv) institutional arrangements for gathering, analyzing and reporting project data, and for investing in capacity building to sustain the monitoring; (v) mechanism for feeding back the findings into decision making and any required corrective action.

Added to the Proponent's internal monitoring, an independent third-party organization/ agency has to be hired for regular monitoring throughout the project implementation period and for annual monitoring of the results 5 years after the completed relocation of villages. The project affected communities have to be involved as a party in the monitoring.
CHAPTER 9  RESETTLEMENT POLICY FRAMEWORK

The Proponent is responsible for preparing and implementing a Resettlement Action Plan (RAP) for each of the villages that have to be relocated due to the HPP. The RAP will be prepared through an informed consultation process with the affected communities and with each affected household according to the mechanism given in the Project Consultation and Disclosure Plan (PCDP) enclosed in Volume V. The RAP will be prepared based on the applicable resettlement policy of the government and of MIGA on the outcome from the consultations with the PAP and following the Entitlements matrix for resettlement and compensation below.

9.1 Policy and Entitlement Matrix for the My Ly Hydropower Project

This policy and entitlement matrix outlines proposed My Ly – Nam Mo Hydropower JSC’s (The Proponent) commitments to Project Affected Persons (PAPs) in relation to compensation and mitigation for project impacts, and promoting project development opportunities. The measures listed in the matrix will be carried out by Proponent staff with relevant GoV and GoL authorities.

9.1.1 Legal basis and standards

The Project Policy and Entitlement Matrix is based on the following legal documents and standards:

- Decree on Compensation and Resettlement of People Affected by Development Projects (Decree No. 84/GOL, 2016);
- Land Law 2013 which is effective from Jul. 1st, 2014 of the GoV and Decree No. 01/2017 / ND-CP amending the decree guiding the Land Law;
- Decree No.38/2013/ND-CP on management and utilization of official development assistance (ODA) and concessional loans from donors;
- Decree No.44/2014 of the Government regulating land prices, Decree No. 104/2014/ND-CP on land prices, and Circular detailing a number of articles of the government’s decree no. 43/2014/ND-CP and decree no. 44/2014/ND-CP dated May 15, 2014;
- Decree No.47/2014/ND-CP of the government of May 5th, 2014 on compensation, support and resettlement upon land expropriation by the State, which is effective from Jul. 1st, 2014;
- Circular No. 37/2014/TT-BTNMT of June 30th, 2014 on detailed regulations on compensation, support, and resettlement upon land expropriation by the State;
9.1.2 Proposed My Ly Hydropower Project Policy for the PAPs

- Project impacts shall be avoided or minimized wherever possible by exploring viable alternatives in design and location, and considering the opinions and concerns of the Project Affected People (PAPs).

- Full assessments shall be conducted to ensure all impacts are identified and mitigated.

- A detailed entitlement matrix (see Table VI.5) is prepared, containing all the losses to the village community and each affected household and the compensation measures that the Proponent is obliged to provide and implement.

- PAPs shall be compensated and resettled in order to improve their standard of living, including access to community services and resources.

- PAPs will be provided with choices among feasible resettlement options, including adequate replacement housing or cash compensation, and their preferences in respect to relocation to existing communities will be taken into consideration.

- Land acquisition and resettlement shall be planned and implemented to cause least possible amount of social, cultural and economic disruption.

- PAPs will be provided with relocation assistance that is suited to the needs of each relocated group.

- All measures shall be implemented without detriment to the environment.

- Special measures shall be incorporated to protect socially and economically vulnerable groups, this is groups that cannot for various reasons participate in restoration programs groups, e.g., women-headed households, especially single mothers with children, the disabled, the elderly, etc.

- All persons residing within the areas directly impacted by the project shall be considered as PAPs and will be eligible for compensation and resettlement if the impact influences their residences and livelihoods negatively: (a) those who have formal rights to land or other assets, and (b) those who initially have no formal rights to land or other assets but have a claim based upon the laws of the country, upon the possession of documents such as tax receipts and residence certificates or upon permission of local authorities occupy or use the Project affected land, are provided compensation for the land they lose, and other assistance. (c) Those who do not belong to (a) or (b) above but are certified by commune/district authorities having been using the land and have assets on land before the cut-off date, are provided resettlement assistance and other assistance needed. Those without legal titles or required documentation shall be assisted in acquiring the necessary documents that will give entitlement to compensation or replacement.

- The previous level of community services and resources shall be improved after compensation and resettlement. These include schools, water and electricity supply, intra-village roads, health services, animal health services, etc.

- The project development costs take into account the costs of resettlement. The resettlement programs shall be planned and implemented with the consent and agreement of the affected people through a participatory involvement process.
• All households will have access to effective mechanisms for hearing and resolving grievances during the implementation of compensation and resettlement programs.

• Proponent will carry out monitoring of PAPs until compensation is completed and livelihoods are fully restored, and until development targets are achieved.

• All communication with PAPs and vulnerable groups will follow the consultation process outlined in the Public Communication and Disclosure Plan (PCDP).

Provisionally, the following compensation and development principles on entitlements will guide decisions following the census and inventory of people affected by the project. These will be updated following detailed consultation and negotiation with the affected parties.

All households will have free and direct access to a grievance redress mechanism for complaints or concerns about the project.

9.1.3 Relocation site selection process

Relocation sites for the affected villages in Vietnam have been proposed in the Government Resettlement Plan prepared in 2015 by Nghe An Forestry Planning Division and for the affected villages in Laos by ASA Power Engineering Company that was hired by the Proponent to prepare ESIA for the My Ly HPP in 2016. The principle for the site selection was that the distance of removal should be as short as possible. The locations were mainly chosen by the province, district and commune authorities in coordination with the consultant teams.

These proposed resettlement sites were presented to the PAPs in all the affected villages by the communication team hired by the Proponent in June 2017. In most of the villages people agreed to the proposed location, but some villages had alternative suggestions based on their knowledge of the proposed site as well as on their familiarity with the wider geographical environment around their village and the proposed resettlement area. These proposals are recorded in the consultation reports enclosed in Volume IV Annex 5 to this ESIA.

The Proponent will bring the alternative relocation sites suggested by villages to the attention of the relevant province, district and commune authorities and undertake negotiations with the authorities concerning the eligibility of these sites.

The Proponent will also ensure that relocation site options are discussed in the FPIC process with the PAPs in a way that will enable broad community understanding and agreement, and that each affected village community (or its representatives chosen unanimously by the community members in a village meeting) will have an opportunity to visit the proposed relocation site together with representatives of the Proponent and of the local authorities. This will foster broad community support and consent on the decision of the relocation site.

9.1.4 Land acquisition and compensation process

Proponent will negotiate with eligible government organizations concerning the acquisition and allocation of the land needed for the relocation and compensation of the affected people. This will include DONRE with Province Forestry Office (Vietnam) / Agriculture and Forestry Office (Laos), and DARD with Province Land Office, as well as the Province Forest Management Board.
For preparation of the Resettlement Action Plan, Proponent has to undertake a detailed socio-economic census of the displaced persons and an Inventory of the affected land and assets at household, community, and enterprise level.

The cut-off date is the date the District People’s Committee/ District Party Committee issues an official notification of land acquisition for the Project.

Ideally the cut-off date should be set as soon as possible after the agreement of the inventory of assets recorded with PAP is complete.

The compensation payment should be made at 2 months before the relocation is planned or as agreed with PAPs based on a FPIC process.

9.1.5 Roles and responsibilities

The Proponent as the project owner will take responsibility to ensure that the resettlement planning, preparation of the RAP, and the procedures related to the planning and implementation of the resettlement and compensation measures are in compliance with the national laws and policies and with MIGA policy. The Proponent will coordinate the resettlement planning, implementation and monitoring in coordination with the eligible government agencies according to the national laws and policies and their responsibilities and tasks.

In Vietnam, the Province People’s Committee (PPC) will approve the resettlement plan and issue decision concerning land status and land valuation.

At province level, the Committee for Compensation and Resettlement is responsible for supervising and managing resettlement, compensation and livelihoods rehabilitation, for approving ESMP and defining compensation levels.

At district level, the District People’s Committee (DPC) will approve resettlement compensation plans and appoint District Resettlement Board that will consist of DPC Vice chair, representatives from DONRE, DARD, Dept. of Finance, and representatives from district level mass organizations. The tasks of this unit is to organize, plan and implement compensation and resettlement implementation, undertake consultation and disclosure activities, and design and implement livelihoods restoration programs.

In Vietnam, at commune level the Commune People’s Committee (CPC) will assign commune officials to assist in resettlement planning and implementation, in compensation agreements with PAPs, and in grievance resolution.

In Laos, the Provincial Party Committee will approve the resettlement plan and issue decision concerning land status and land valuation. At province level, the Management Unit of Compensation and Resettlement is responsible for supervising and managing resettlement, compensation and livelihoods rehabilitation, for approving ESMP and defining compensation levels.

At district level, the District Party Committee will approve resettlement compensation plans and appoint District Resettlement Committee that will consist of DPC Vice chair, representatives from DONRE, DARD, Dept. of Finance, and representatives from district level mass organizations. The tasks of this unit is to organize, plan and implement compensation and resettlement implementation, undertake consultation and disclosure activities, and design and implement livelihoods restoration programs.

The district level Operational Unit for Compensation and Resettlement, consisting of representatives from district authorities and chiefs of affected villages has the task to
facilitate resettlement plan implementation, settle requests related to resettlement and compensation, and provide information to affected households.

In each village in the DIA in Vietnam and Laos, a Village management group for Resettlement, compensation and livelihoods restoration is set up with 2 male and 2 female members to represent the villagers and deal with all the issues related to the Project impacts and their mitigation. This unit will also assist villagers in filing complaints and process them to the project Grievance Redressal Unit.

Proponent will set up a Project Resettlement and Livelihoods Restoration Unit for detailed planning and implementation of all the programs and activities according to the REMLRP.
### Table VI. 5 Entitlement matrix for resettlement and compensation

<table>
<thead>
<tr>
<th>Issue</th>
<th>Compensation and Proponent Obligation</th>
</tr>
</thead>
</table>
| **A – Loss of residence (house or dwelling)** | • Proponent to provide either expropriation payment for residence (house or dwelling) based on applicable market rates or a new residence (house or dwelling) based on a general design of at least the same standard and in consultation with the project affected persons (PAPs)  
• Proponent to assure PAPs are participating in designing the houses, taking account of their cultural and spiritual preferences (i.e., based on ethnic minority/group traditions)  
• Proponent to support transportation costs to new sites within the Project Area of Influence or area of relocation (belongings, materials and moveable objects)  
• Proponent to support if house or dwelling is to be dismantled and reconstituted in new location, according to the choice of the PAPs  
• Proponent to provide technical assistance in designing, surveying and construction |
| **B – Loss of other structures** | • Proponent will replace structures at cost or provide materials and assistance for rebuilding, according to the choice of the PAPs |
| **C – Loss of residential land** | • Expropriation payment for residential land based on applicable market rates, if applicable  
• Proponent is to secure suitable residential land in consultation with GoV/GoL and PAPs, covering the cost in addition to expropriation payments  
• New residential land will be no less than existing residential land area in addition to land required for livestock  
• Proponent to assure each HH is provided with a Land Use Certificate by the government land authority on the new residential land |
| **D – Loss of allocated productive forest land** | • Proponent to assure allocation of production forest and associated payments from the government (Province) and certification of use for PAPs (individual HH, HH groups or village)  
• Proponent to assure payments for environmental services from the government (Province) for PAPs (individual HH, HH groups or village) are not disrupted  
• Proponent to assure PAPs are allowed to extract products from protection forests and provide support for forest conservation plans |
| **E – Loss of river resources** | • Proponent to assure mobility is possible by road as river will not be usable for transport  
• Proponent to assure that alternatives are made available for fisheries |
| **F – Loss of agricultural land (owner of land)** | • Assure allocation for agricultural land from the government (Province) and certification of use.  
• Assure that PAPs are able to continue agricultural practices as before relocation or loss of land |
| **G – Loss of agricultural production, livestock and ponds (user of land)** | • Proponent to provide land of equal productive value (based on quality check) or alternative production system  
• Entitled for livelihood restoration based on options and provisions in the livelihood restoration plan, and replacements, including, among others:  
  i. Fruit trees (horticulture, apiculture)  
  ii. Livestock enhancements  
  iii. Diversification of crop production and sustainable methods  
  iv. Fisheries (post-reservoir filling)  
  v. Business/SME development  
• Special provisions will be made for capacity building in implementation of livelihood activities when these are not familiar, new and require special... |
<table>
<thead>
<tr>
<th>Issue</th>
<th>Compensation and Proponent Obligation</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>skills as stipulated in the livelihood restoration plan</td>
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<tr>
<td></td>
<td>• Proponent to provide assistance in cash and food supply to the PAPs during the transition period until their food production and economy has been stabilized to the pre-resettlement level. Appropriate level of allowances will be decided based on baseline socio-economic assessment and agreed with the PAP in the FPIC process</td>
</tr>
<tr>
<td></td>
<td>• Proponent to provide technical assistance for five years</td>
</tr>
<tr>
<td>H – Temporary Loss of Production</td>
<td>• Proponent to provide cash compensation for the loss of agricultural production, forest resources/products and rehabilitation of lands</td>
</tr>
<tr>
<td>I – Loss of common property resources</td>
<td>• Proponent to secure access and rights to adequate forests, grazing land, water and other natural resources</td>
</tr>
<tr>
<td>J – Permanent loss of land used for commercial purposes</td>
<td>• Replacement land of at least equal value with the location being acceptable to PAP in order to continue viable commercial activities.</td>
</tr>
<tr>
<td>K – Loss of commercial structures</td>
<td>• Provision for replacement of any materials or assets that cannot be removed (non-removal assets) if they remain in the project direct impact area</td>
</tr>
<tr>
<td>L – Loss of physical cultural resources</td>
<td>• Provision for ceremonies and acceptable arrangements for relocation of moveable items and re-establishment at new site agreed with PAPs</td>
</tr>
<tr>
<td></td>
<td>• Replacement of shrines and other religious structures of at least the same value and acceptable to the PAP communities</td>
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<tr>
<td></td>
<td>• Assure that sacred objects and needs (e.g., sacred tree, spirit house, burial grounds) are available and acceptable to PAPs in the relocation area</td>
</tr>
<tr>
<td>M – Loss of community infrastructure</td>
<td>• Replacement of all community infrastructure of at least the same value and function or improvement of existing infrastructure</td>
</tr>
<tr>
<td>N – Loss of educational facilities</td>
<td>• Replacement kindergarten and/or school or upgrading of existing village facilities within an acceptable distance from households</td>
</tr>
<tr>
<td></td>
<td>• Provision of equipment, materials and furniture for new school buildings as required</td>
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<tr>
<td>O – Loss of health facilities and health checks</td>
<td>• Provision of health care services should be considered during the relocation and recovery period</td>
</tr>
<tr>
<td></td>
<td>• Health checks for all resettlers during relocation transition period (either prior to or just after relocation to new area)</td>
</tr>
<tr>
<td></td>
<td>• Proponent to cover the health costs for all adverse health impacts caused by direct project-related activities</td>
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</table>
CHAPTER 10  LIVELIHOODS RESTORATION PLAN

The remote ethnic minority communities affected by the My Ly HPP are extremely poor and their livelihoods are totally dependent on utilization of the local forest land and water resources. The PAPs will lose totally about 85 ha upland farming area; currently they cultivate 1,147ha annually and they have access to about 2,294ha additional swidden land for crop cultivation used in rotation. The loss of 1,247ha of forest in the reservoir could also significantly reduce the grazing areas for their cattle, buffalo and goats.

Currently non-timber forest resources provide large part of the family food; wild growing vegetables, roots, fruit, leaves and mushrooms are collected in the forest on a daily basis. Forest provides firewood and construction material, and small animals hunted in the forest are the main source of animal protein together with the aquatic resources (fish, shrimps and other crustaceans, moss, etc.) that are caught or collected in the Ca River. Livestock is free ranging; pigs and poultry are consumed sometimes for family food, but cattle is kept to be sold in order to generate cash income. Hunted wild animals and fish are also sold for cash.

Agriculture is swidden rotational cultivation of rice, which is household staple food, and maize and cassava for livestock feeding, some even for sale. Rice production is not sufficient year round for majority of the households; farming practices are traditional and subsistence oriented.

Protection and management of the forest areas allocated to each village is moreover an important source of income for the village communities and for individual households in the DIA.

My Ly HPP will have a major impact on the livelihoods resources and livelihoods practices of the PAPs. All the households that will lose land used for cultivation and animal grazing, lose access to forest and forest resources, or lose access to river resources and the Ca River as a transportation route used in livelihoods activities, will be eligible for special assistance for restoration of their livelihoods disrupted by the HPP. All the villages in the DIA are very poor, but special attention will be paid to inclusion of the most vulnerable members in the communities, such as the poorest households, single-headed households with children, disabled and elder persons in the livelihoods assistance programs.

Livelihoods Restoration Plan has been developed based on the baseline socio-economic assessment of the affected communities. The main areas of the Plan have been further identified based on consultations with the affected people, taking into consideration their views and concerns on livelihoods resources, support and needed assistance for livelihoods restoration and improvement. The Fisheries Support Plan, Agriculture Restoration Plan and Animal Husbandry and Veterinary Services Plan consequently integrate both compensatory and enhancement measures with the aim of not only restoring but also improving the livelihoods of the affected people in the DIA of My Ly HPP. The plans will be developed in detail in the detail design phase.

10.1 Fisheries Support Plan

High sediment load, increased organic and nutrients from decomposed vegetation will favor mud eating fish species adapted to the largely still-standing water environment of the reservoir. Water impoundment upstream of My Ly HPP dam will provide opportunity to develop aquaculture and fishery. In many cases aquaculture actually exacerbates biodiversity losses, for example by introduction of exotic species which affect
indigenous species negatively. Aquaculture with native species would be preferred. Reservoir shore could provide a productive area for shrimp farming. Proper controls are advised through monitoring. The Plan has two programs:

- Cage Fish Farming (CFF)
- Community Fish Farming (CFF)

10.1.1 Cage Fish Farming

Introducing fish cages in the reservoir face some of the same problems regarding exotic species as in dam projects. However, by using fish cages the risk of escaping and introducing new species and possibly fish sicknesses in the river ecosystem is even higher than in fish dams. In many cases, aquaculture actually exacerbates biodiversity losses by affecting indigenous species negatively. To avoid this, local fish species should be used.

Big size fish species are commonly used in cage fish culture due to their rapid growth and feeding on planktons. In Vietnam, cage fish culture in dams is common. During the dam construction phase, which is assumed to take five years, a more close investigation should be undertaken to evaluate the risk of using exotic species, and to evaluate new equipment that in a higher degree than what appears to be available today can give a higher guarantee against fish escape. Because of the high daily and annual water level fluctuations and the flushing of the reservoir once a year, the effect of this mitigation is somewhat uncertain. The recommendation is to start carefully with no more than ten households, each using five cages.

10.1.2 Community Fish Farming

In all sections of the project area, a loss in fish production is expected, which will negatively impact on fishery. In some DIA villages, households have fish ponds and are raising carp and other native species taken from the river. This seems to work well. Experiences of these farmers will be used in development of the fish pond farming.

From an ecological point of view, local fish species are recommended, because in many cases aquaculture exacerbates biodiversity losses, for example by introduction of exotic species which affect indigenous species negatively and are virtually impossible to eradicate once established. Fingerlings are available outside the DIA area. Fish pellets would provide a reasonable growth.

Given that the water flow will be reduced substantially in the low flow season, the risk of over fishing and use of illegal fishing methods may increase. Similarly, during the construction phase over fishing is expected. This may be managed through establishing controls and increasing awareness. An awareness program dealing with over fishing and use of illegal fishing methods as well as other threats to the environment should be developed, focused on workers, permanent and non-permanent technical project staff, project administrators, local people, children, and district and local level government staff.

10.2 Agriculture Restoration Plan

The Agriculture Restoration Plan consists of two Programs:

1. Upland Farming Diversification Program (UFDP)
2. Soil Fertility Enhancement Program (SFEP)
10.2.1 Upland Farming Diversification

This program includes measures and plans aiming to compensate production losses, enhance productivity, diversify production and improve agricultural marketing. These measures are organized into the following sub-programs:

- Crop Diversification and Multiple Cropping
- Fruit and Vegetable Production
- Bee Keeping
- Forage Production

Proponent will implement these programs in the Project DIA in collaboration with the commune and district level extension service providers. The following programs will be prepared during the detail design phase of the project and implemented during the project construction phase.

(i) Crop Diversification and Multiple Cropping

The Crop Diversification and Multiple Cropping Program will be implemented as compensatory and enhancement measures for 20 households in each affected village as a pilot project during the first 2-3 years and then extended to encompass more households. The program includes growing crops such as ginger, peanuts, beans, pumpkins and other vegetables and other similar crops intercropped with traditionally grown maize and cassava. Planting fodder trees can be included as well.

The program will contain improved farming practices, improved drought tolerant seeds, fertilizers, and other necessary inputs such as capacity building of farmers. The Project will facilitate farmers to effectively implement the proposed program, and collaborate with government extension services for seeds and improved agronomic practices.

Capacity building of farmers

A series of training programs will be organized, in collaboration with commune and district level extension services. The training is expected to enhance the skills and capacity of farmers to efficiently utilize land resources through adopting improved farming practices and changed cropping patterns. Training will also contain components focused on crops, vegetables, horticulture, beekeeping, soil fertility enhancement, compost making and related skills.

Implementation approach

Crop diversification on uplands will be a new initiative among the local farmers, even if a few households already cultivate more crops than only upland rice, maize and cassava. Proponent will prepare a plan and introduce the affected communities to new farming approach, growing more types of crops alone or intercropped on uplands. The program will adopt appropriate farming techniques and agronomic practices to the upland areas.

A household group with 5-6 households will be involved in each village. They will be provided training and support. A good technical support will be required. Proponent will collaborate with government extension service agencies at commune and district level. Project will financially support extension services with manpower and technology.

(ii) Fruit Tree and Vegetable Production

The Fruit Tree and Vegetable Production Program will be implemented on homestead area and on river bank. Project will collaborate with concerned communes to allocate
suitable area with gentle topography for cultivation in the Safeguard Buffer Zone on riverbank or near streams in other areas. Initially, 2-3 households will be involved in fruit tree production on riverbank, and all other households in homestead area. Most households have a small plot for farming. Project in collaboration with government extension agencies will provide improved seeds and fertilizers to participating farmers. If water source is available, provision will be made for drip irrigation.

(iii) Bee Keeping

The Bee Keeping Program will be a new farming initiative in the ethnic minority communities. Honey production using forest vegetation is a common activity in upland areas. Initially, two households will be involved in each village, trained and provided with beehives and bees. (See capacity building explained earlier). If successful, the activity will gradually involve more households. Project will prepare and implement the program.

(iv) Forage Production Farming

Forage scarcity was reported in most project affected villages and very few farmers grow local maize seeds for fodder production. Growing forage crops is not a common practice among the local farmers. Since a large forest area of 1,247ha will be inundated and also lead to reduced grazing area, Project will prepare and implement Forage Production Program in all the DIA villages. In Laos, households have more access to grazing area than in the Vietnamese territory.

Forage crops will be grown on upland farms as a single crop or intercropped with cassava. Locally available fodder tree species will be planted on uplands.

10.2.2 Soil Fertility Enhancement

Soil Fertility Enhancement Program (SFE) contains activities aiming to improve soil fertility, enhance crop productivity, and eventually increase crop production. Soils are very poor and less productive in the Project DIA. Slashing and burning just before the rainy season and planting seeds early in the rainy season aggravates soil erosion. Yields of hybrid maize in such areas are less than one third of its potential grain production. The measures of the Program are organized into the following sub-programs:

(i) Legumes in Multiple Cropping

Farmers are growing some beans in home gardens and occasionally on uplands. Legumes such as soya beans and similar crops could be grown inter-cropped with maize and other plants. These legumes will provide some pulses and additionally their roots will add nitrogen to the ground (See Crop Diversification Plan above). Capacity building will be similar to the one provided in the Crop Diversification Program.

(ii) Compost Making and Mulching

Project will prepare and implement a Compost Making Program. Simple compost making process will be adopted using biomass collected from nearby forests, crop residues and cattle dung. Farmers usually have a temporary house in upland farming area and live there during crop maturity and harvest. Cattle while grazing on fallow land could be put into paddock at night and dung collected for compost. A simple technique is making a ditch/pit and throwing there biomass and dung to decompose. Using this simple technique will take a longer time for decomposing, but it is easy and useful. Farmers can collect the compost and use it during crop planting. Compost making will be practiced at homesteads, dumping all organic waste in a ditch and harvesting it after 3-4 months. The composted material will then be used in vegetable plots.
Farmers leave enough crop residues after grain harvest and they are blown out on windy days. These crop residues could be collected, put aside and used in crops as mulch or dumped into a compost pit.

10.3 Animal Husbandry and Veterinary Services Plan

Farmers are rearing all kinds of livestock e.g. cattle, goats, buffaloes, pigs and poultry. All the animals are free-ranged and only a few farmers rear hybrid pigs in confinement, and not many households have shown intention to keep their pigs and poultry confined. Animal disease outbreaks are common and cause major economic losses to the poor farmers. Forage scarcity for cattle, goats and buffaloes during winter has been a major problem in the DIA villages, especially in the Vietnamese territory.

This program aims to improve animal husbandry practices, management and feeding of livestock, reducing incidence of diseases and improving animal health services. Farming pigs and poultry in confinement can moreover be considered as an environmental program: It will reduce littering waste in the village area. These measures are organized into the following three sub-programs:

1. Animal Husbandry Improvement
2. Extension and Veterinary Services
3. Forage Production

10.3.1 Animal Husbandry Improvement

This program will include feeding, breeding and management of all kinds of livestock in the Project DIA and involve a large number of households. Special attention will be paid to pig farming and poultry rearing in terms of feeding, management and breed improvement. Animal Husbandry Improvement Program will be prepared and implemented with emphasis in improved feeding, breeding, and management of livestock, particularly pigs and poultry.

Project will financially support construction of a pigsty for 5-6 pigs and a small poultry shed for 15-20 poultry for all the households in DIA villages. Farmers will be encouraged to rear hybrid pigs in pigsty and additionally use commercial livestock feed for better growth. Poultry will be managed at semi free-ranging system. A few households will be encouraged to rear improved poultry.

10.3.2 Extension and Veterinary Services

Project will prepare and implement a comprehensive Extension and Veterinary Services Program which will include: (i) support to extension service agency at commune and district level, both in terms of manpower and technology, including medicines and vaccines; (ii) awareness building and training of at least one person from each DIA household on animal hygiene and primary treatment; (iii) equipment and appliances needed for improved husbandry and treatment.

This will be an important program in Project DIA and its adoption rate by farmers is expected to be high.

10.3.3 Forage Production

See Forage Production Farming Plan under the Upland Farming Diversification Program above.
CHAPTER 11 COMMUNITY HEALTH AND SANITATION PLAN

Displacement and relocation will affect the health of communities and individuals in the villages to be relocated. Their current health service access is poor, and the nearest health centers are located at a travel distance that encourages people from searching the services except in very urgent cases. Common health ailments include diarrhea, fever, itchy eyes, coughing and other respiratory problems. Local traditional cure methods are applied and medication prepared with plants, herbs, roots and fungi that are collected in the forests.

The existing sanitation standard is very low, with water led from mountain streams into water tanks in the villages. Only a few households have toilets, and the existing ones are rudimentary. Animals such as dogs, pigs and chicken are roaming freely in villages and surrounding areas, eating whatever they find. Most people are using river water for washing and bathing.

There is neither waste management facilities nor awareness of sanitation and related health risks. Litter is thrown around the houses in the village and in the environment, including the riverside. Traditional cooking on open fire inside the house, using firewood collected from the forest, is reportedly affecting the health of especially children and women, making their eyes irritated, causing coughing and other respiratory problems.

Relocation of the PAP and construction of new villages will provide an opportunity for improvement of their health and sanitation standards with measures that can be implemented during and after the resettlement. A health and sanitation program will be developed prior to project construction with the aim of improving health status of communities in the project area. The plan will be developed for both construction and post-construction phase of the project. The plan will incorporate the following specific programs that will be implemented in the project DIA villages.

11.1 Household water supply and management

Household water supply will be provided in all the relocated villages with the same type of system as in the existing villages, and with a proper filtering system to allow safer drinking water. Project will also support villages losing land and in the DIA to develop drinking water systems. Such support will be in form of remediating and augmenting existing drinking water systems. Project will collaborate with villages to support the access to safe piped drinking water to relocated households. Similarly, the project will support drinking water quality analysis in villages. The aim is that the project will contribute to establishment of treatment practices for safe drinking water to affected households and bring the quality of drinking water up to the standard prescribed by the National Drinking Water Quality Standards.

11.2 Sanitation enhancement

Approx. more than 80% of the households in the project area do not have toilet facilities. They use nearby forest areas, river/stream banks and open lands for open defecation. This low hygienic standard contributes to high prevalence of diarrhea and related health problems. In the relocation villages every household will be provided with a toilet. Project will also provide support for construction of the toilets with septic systems and flushing mechanisms in other affected villages in the DIA.
11.3 Community waste management

Villages at present lack waste management practices and people dispose waste haphazardly in and outside the village. There is no awareness of the health risks from litter around the houses, which the free roaming animals are partly eating. The Project will support developing simple waste management systems in relocated villages that are sustainable, based on the local culture and designed together with the villagers in order to be managed by the community. Such a waste management system may include e.g., construction of an open but fenced area for waste disposal outside the village, composting development for organic waste (see the Compost making and mulching plan under the Soil Fertility Enhancement Program of the Livelihoods Restoration Plan), and organization of a community rubbish collection team.

11.4 Improved cooking devises

Smoke from traditional cooking over open fire is a serious health hazard, especially for women, who are cooking inside the house, and children staying with their mothers. Project will provide support for Improved Cooking Stoves (ICS) in the relocated households that should be included in the house kitchen design. ICS has a range of benefits compared to traditional fuel wood stoves, ranging from reduced emission of smoke and noxious gases in the atmosphere to reduced incidence of respiratory diseases. ICS requires less fuel wood and accordingly also contributes to less firewood that needs to be collected in the forest areas surrounding the villages. Consequently, reduced firewood collection will contribute to lessen women’s work load both physically and timewise. Initial training will be provided for women in the use and maintenance of the ICS.

11.5 Community awareness and capacity building

Project will launch a health and sanitation awareness raising program in the project area villages. The awareness will focus on water use and treatment practices, safe water and pollution of water sources, personal hygiene and sanitation, household toilet management and maintenance, and household and community waste management. Project will collaborate with government agencies at district/commune level to effectively implement such awareness and education programs.

11.6 Public health support

Availability of health services is very poor in the project area. Villages lack any health services, and the distance to the available services in commune and district health centers is long, travel difficult and in many cases too costly for the poor people. There are trained health workers in many Vietnamese villages, but these are without medical training and only capable to disseminate government health information. It is proposed that the Proponent will: (i) develop health services availability for the PAPs connected to the construction workers' health facilities, (ii) support training of health workers in villages, and (iii) develop mobile health services to the villages in cooperation with the commune/district health centers. Health services that are built up in the construction area will be in operation during the construction period, but could even remain after the construction and be run by a local administration.

11.7 Emergency medical response

An Emergency Medical Response Unit (EMRU) will be established in each construction site for first aid and emergency assistance. One medical doctor will be employed in the Environmental Management Unit of the Project during construction.
CHAPTER 12  COMMUNITY LABOR AND EMPLOYMENT PLAN

All local residents in the project DIA are farmers and there are hardly any labor opportunities apart from agriculture and forestry. Seasonal and permanent labor out-migration of especially young people, both men and women, from the affected villages to other provinces and major cities is high. There will be many labor opportunities for unskilled workers in the HPP construction and it is required that local workers from the affected communities will be prioritized whenever possible. Requirements for local employment among the unskilled labor force and measures to ensure are required to be included in all the procurement documents and construction contracts and sub-contracts. It is required that:

(i) Contractor has to prioritize employment of local unskilled labor force (through subcontracting) so that at least 30% of the unskilled labor force over the project construction time are workers from the communities in the Project Impact Area.

(ii) Totally 30% of the local unskilled labor force has to be women. Contractor has to implement measures to enhance employment of women, including awareness raising to prevent sexual harassment of women.

(iii) Male and female unskilled workers will receive equal pay for equal work.

(iv) Contractor is not allowed to use any child labor (workers under 16 years of age).

(v) Contractor has to provide basic facilities (such as water and latrines) separately for men and women in the construction sites. The quality of these facilities has to meet the locally acceptable standard.

(vi) Contractor is required to provide adequate working conditions and facilities for their workers, as well as ensure health and safety measures in the workplace. Contractor is required to coordinate with local health centers in order to ensure that necessary arrangements will be made for prevention of accidents and epidemics, and that first aid facilities and access to basic health care and emergency care are available at all times for all employees at the construction site and at workers' camps.
CHAPTER 13 INFLUX MANAGEMENT PLAN

The HPP construction will contribute to an influx of people to the project area who may far outnumber the local people. There will be large numbers of workers, mostly male, camp followers and other people taking the appearing economic opportunities in the project areas, especially around the construction area and in the existing local population centers. New people with culture and habits different from the local ones will greatly increase the risk of sexually transmitted diseases such as HIV/AIDS and the risk of human trafficking of especially women and children. There is also an apparent risk of increasing drug trafficking and drug use added to the already existing problem of drug addiction in some project-affected villages. Awareness of potential risk and social problems should be enhanced among vulnerable local people, especially women and girls.

13.1 Community-based Public Awareness Program in project-area communities

Experience shows that the risk of HIV/AIDS and other sexually transmitted diseases (STDs) as well as of human trafficking will increase during large infrastructure construction projects. With increased mobility due to better connectivity, these risks remain even after the construction period.

In order to mitigate these potential negative consequences of the HPP, a community-based Public Awareness Program with two components will be implemented in the Project Area of Influence:

1. HIV/AIDS and other sexually transmitted diseases prevention
2. Human trafficking prevention

The intention of the Public Awareness Program is to increase the risk awareness of the local people through information dissemination in the project-affected villages and in the commune area. Better knowledge of the sexually transmitted infections and of protection against them is expected to obstruct the increase in HIV/AIDS and STD cases. Likewise understanding of the ways and methods of human trafficking will hinder individuals falling easy victim for it. The awareness program will be designed to be appropriate for the local culture, using local language and appropriate communication methods for ensuring that the information is understandable and accessible for the local ethnic minority communities with low educational level; pictorial information is prioritized. The Project will provide funds for information materials and for engaging Women’s Union at province, district and commune level for implementation of the Program.

13.2 Construction workers’ HIV/AIDS Awareness Program

All project contractors are required to implement an HIV/AIDS awareness program among construction workers and to undertake measures to reduce the risk of the transfer of the HIV virus and other sexually transmitted diseases between and among the construction personnel and the local communities. Contractor is requested to subcontract an approved service provider, such as the Province HIV/AIDS Prevention Centre to:

1. Carry out regular awareness raising among the employees throughout the construction time through information, education and communication activities that address HIV/AIDS and other sexually transmitted diseases (STDs)
transmission risks and promote preventive measures. The awareness program shall cover all the contractor's employees, all subcontractors and any other employees, as well as all truck drivers and crew making deliveries to the construction site.

2. Promote early diagnosis of HIV: Ensure workers have access to and know how to access voluntary counselling, screening and diagnosis of HIV/AIDS, so that all workers can find out their HIV status.

3. Provide free condoms at the workers’ camps.

Contractor will include the HIV/AIDS awareness program as a sub-clause in the execution of the works, budget it as a lump sum covering all the costs related to the program and clearly indicate when, how and at what cost the program with all the required measures will be implemented. Contractor shall detail the resources to be utilized and the proposed sub-contracting arrangements and provide a cost estimate with supporting documentation. Payment to contractor for preparation and implementation of this program shall not exceed the budgeted sum for the purpose.

Proponent will assure that the HIV/AIDS awareness program is included in the construction bidding documents and accordingly included in the construction contracts and implemented by eligible contractors.
ANNEX VI.1 MAP OVER THE AFFECTED VILLAGES AND ADMINISTRATIVE AREAS
ANNEX VI.2 SOCIO-ECONOMIC AND CULTURAL OVERVIEW OF THE VILLAGES TO BE RELOCATED

VI.2.1 Keng Du Commune

Keng Du village

Population: 46 HHs with 183 people
Ethnicity: Thai
Poverty: 78% of households under the official poverty line, approx. 20% have annual food insufficiency
Location and movement: 7 km from Keng Du Commune centre. Border military station located in village. Village was established in 1940, high in and out-migration, currently high labor out-migration.
Road infrastructure: Earthen access road to village from commune centre, during rains not vehicle accessible but possible only to walk. 50% of HHs own a motorbike.
River transportation: Most important transportation way, 40/46 households have boats.
Electricity: Households have private pico hydro generators in river and tributary stream
Water supply: 4 water tanks
Educational standard: Many illiterate elder women. Women are less fluent in Vietnamese than men. 12 children in commune secondary school, no student in high school.
Health and sanitation: No health services in village, people go seldom to commune health centre, border guard station in village provides health assistance. Children are vaccinated. Women give birth at home.
Livelihoods:

**Agriculture.** Upland fields located on a 7 km stretch along the river and along tributaries at a distance of 1-10km from the village. 5 production groups, each HH has totally approx. 2-3ha cultivation land and use annually 0.8ha for rice and 0.6ha for vegetables, average rice productivity 2-3t/ha, not enough for selling, cassava grown for animal fodder, maize for selling and animal fodder. Peanuts is cash crop, about 0.5ha/HH.

**Livestock farming.** Each HH has in average 3-4 cows, 5-7 pigs, 20-30 poultry. Cows are raised for selling, pigs for family festivities, poultry household food. Cattle and poultry mortality in diseases high. Roaming freely in village and forest.

**River use:** Fishing is considered to be the most important livelihood after cultivation. All HHs are fishing, men with nets from boats as far as 30km away. Small catch for HH food, bigger catch can be sold. **Riverbank cultivation** of vegetables and fruit trees for family food by some households.

**Forest utilization.** NTFPs for daily food, hunting for daily food

**Employment and trade.** All women weave skirts and sell to traders. High labor out-migration.

**Cultural heritage:** Graveyard with some 100 graves located 1km from village, 700m up from the river. Spirit forest outside village. Worship site by the village entrance.

**Causes of poverty according to villagers:** Poor soil, steep agricultural land, water supply dependent on natural conditions, lacking seed supply from the government.

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VI.2.2 **My Ly Commune**

Cha Nga Village

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**Population:** 97 HHs with 435 people

**Ethnicity:** Thai

**Poverty:** 60% of households under the official poverty line, approx. 30% have annual food insufficiency, but due to poor harvest in 2015 and in 2016 increased to 40%.

**Location and movement:** About 30 km from My Ly Commune centre along the Ça River. Established long time ago. Each HH residential land 150m² and no garden land around houses. Some labor out-migration of both men and women to HCMC, men also digging gold in Quang Nam province.
Road infrastructure: Earthen non-vehicle accessible road to village, during rainy season village becomes isolated.

River transportation: All transportation takes place along the river, 80% of HHs have boats.

Electricity: Households have private pico hydro generators in the river.

Water supply: Water tanks for HH water, bathing and washing in the river.

Educational standard: Daily communication language is Thai, Only approx. 25% of women can read and write in Vietnamese. Many school-drop outs when children 12 years – after finishing primary school, especially girls.

Health and sanitation: No government health services in village, but 3 traditional healers selling herbal medicines and tobacco, and 2 trained health workers with a small pharmacy selling medicines. People go seldom to commune health centre due to distance and high travel cost by boat. Women give birth at home.

Livelihoods: Agriculture. Upland cultivation area located up from the river, only little land along the river, 5 production groups, each HH has approx. 3ha land, average rice yield 3-3.5t/ha, cassava grown for animal fodder, maize for selling and animal fodder. A few HHs grow peanuts for selling.

Livestock farming. Each HH has in average 2-3 cows, 1-2 pigs, many poultry. In 2016 all cows and chicken and most pigs died.

River use: All HHs are fishing. Riverbank cultivation: only fruit trees, too deep and stony for cultivation.

Forest utilization. NTFPs for daily food, hunting for daily food.

Employment and trade. All women weave skirts and sell to traders. Some 20 villagers working in Laos, Quang Nam, HCMC. Some villagers working in wood manufacturing in Laos.

Cultural heritage: Spirit forest area outside the village, graveyard, village worship site.

Causes of poverty according to villagers: Poor road access, lack of good quality production land, steep agricultural land, lack of business skills, drug addiction – 40 villagers are drug addicts, mostly young men.

Xop Duong village

Population: 61 HHs with 224 people

Ethnicity: Thai
Poverty: 90% of households under the official poverty line. About 15 HHs suffer food insufficiency 2-3 months/year, but in 2016 poor harvest and 6 months not enough food.

Location and movement: 15 km from My Ly Commune centre along the Ca River. Village has been in the same location since 1960.

Road infrastructure: Earthen logging road to village that is motorbike accessible but not during the rainy season.

River transportation: All transportation takes place on the river, over 80% of HHs have boats. Some 20 villagers provide irregular trade and transport services by boat.

Electricity: Households have private pico hydro generators in the river.

Water supply: Water source 2km from village, water piped to water tanks in village.

Educational standard: Daily communication language is Thai, most women over 30 years illiterate and not fluent in Vietnamese. Very few children go to secondary school in commune centre.

Health and sanitation: No government health services in village, children not vaccinated, women give birth in the village assisted by a TBA. Many miscarriages due to hard physical labor. Many drug addicts who are young, unemployed men.

Livelihoods: Agriculture. 7 production groups with 7-9 HHs in each, every HH has approx. 2-3ha land, vegetables cultivated in upland fields because no suitable land available along the river or in village.

Livestock farming. 20 HHs have 200 cows and 84 buffaloes, 15 HHs have 70 goats, each HH has approx. 3-4 pigs and 15-20 chicken.

River use: All HHs are fishing, but previously abundant big fish has disappeared. Sometimes large catch so fish can be sold. Riverbank cultivation of only grass for cows and mulberry bushes for silk worms.

Forest utilization. NTFPs for daily food, hunting of rodents and birds for daily food. In general, villagers eat fish or meat at least once a day.

Employment and trade. All women weave skirts and sell to traders. Men are involved in logging and sell timber to logging companies, some young men work in wood manufacturing.

Cultural heritage: Spirit forest area 1.5ha, graveyard downstream the planned dam site, village worship site outside village under two big trees.

Causes of poverty according to villagers: Soil erosion, poor weather conditions, poor transportation conditions. The past 3 years the village has no more received government support of seeds and young livestock.
Xang Tren village

Population: 174 HHs with 688 people
Ethnicity: Thai
Poverty: 84% of households under the poverty line. Annual food insufficiency one month. Most HHs eat fish or meat every day.
Location and movement: 4 km from My Ly commune centre along the Ca River. Village area steep and narrow up from the river. District town one day's travel away by boat and road. Same location at least over 60 years, high in and out-migration, currently 50 men labor-migrated to do gold-digging in Quang Nam or to work in the South. People frequently visit relatives in Laos, buy goods in Laos and sell in Vietnam.
Road infrastructure: Earthen logging road to village that is motorbike accessible but not during the rainy season.
River transportation: All transportation along the river, All HHs own a boat, 80% motorboats.
Electricity: Households have pico hydro generators in the river, school and kindergarten with solar panels.
Water supply: 4 public water tanks.
Educational standard: Daily communication language is Thai, most people literate, only elder women cannot read and write. School attendance of children 70% at secondary and 20% high school level.
Health and Sanitation: No government health services in village, herbal medicines used. Most women give birth in village but no TBA. About 50 drug addicts, mainly younger men.
Livelihoods: Agriculture. Upland cultivation area 200ha, located from one hour's walk from the village to half a day's walk. Each HH has 1-2ha production forest for cultivation. 2 HHs have 6ha of paddy land.
Livestock farming. Village divided into 3 livestock farming groups with four pasturelands. 100 HHs have 3-4 cows each, 100 HHs have 1-4 buffaloes each, 20 Hhs have totally 100 goats, all Hhs have...
chicken and at least one pig for HH food. Know about cattle vaccination, previously all cows had died.

**River use:** 100 HHs use boats for fishing, all HHs are fishing in the Ca River, in Kho stream where a lot of fish. One time catch abt 5kg, for HH food but also for selling. Gold digging in the river. Sand and ricks for construction collected from riverside. 5-6 HH doing riverside cultivation of banana, sugr cane, sweet potato, taro, onion, kale, potato.

**Forest utilization.** NTFPs for daily food, hunting of rodents and birds for daily food. Forest products are sold to traders, border guards and teachers.

**Employment and trade.** Growing cotton and raising silk worms; all women weave skirts and sell to traders. Men gold digging in the river. Five small shops in the village.

**Cultural heritage:** Spirit forest and graveyard about 1km from village. Village worship site near the village.

### VI.2.3 Kouan District

**Phiangxang village**

- **Population:** 9 HHs with 36 people, all of the same family.
- **Ethnicity:** Kho mu
- **Poverty:** 100% of households under the official poverty line. Food is sufficient with fish from the river and meat and vegetables from the forest.
- **Location and movement:** 80km from Kouan District centre. Very isolated. Village was established in 1978 when a teacher migrated from Vietnam and married a local woman, today all villagers are his descendants. Since 2005 many people out-migrated and moved to Vientiane and Xiankhouang.
- **Road infrastructure:** Earthen logging road to village that is motorbike accessible but not during the rainy season.
- **River transportation:** Four HHs have motorboats and they provide river transportation services, transporting mainly goods and timber logs (for the Vietnamese), earning approx. 5-6MVND/HH/month.
- **Electricity:** Solar panels.
- **Water supply:** 2 water taps in village for HH water, washing and bathing in the river.
Educational standard: 3 men with highschool education. All children go to secondary school and to high school, no drop-outs. All people except three elder ones can read and write in Lao.

Health and sanitation: Whenever villagers need health care, they go to My Ly health centre in Vietnam because district clinic far away. Children vaccinated through monthly mobile vaccination services from the district health care. Women give birth in village. No regular health control program available. One person knowledgeable in herbal medicine.

Livelihoods: **Agriculture.** Fields to the West of the village along the river at a distance of 300m to 1km from the village, 50-80m from the water level, about 2km along the river, mostly maize and cassava. Upland rice area approx. 10ha, after 2-3 years fields are left fallow for 3-4 years. Soil quality rather good and plenty of land because many HHs out-migrated which lessened the pressure on land. Each HH has 100-200m² garden land with mango, orange, grapefruit, guava, jackfruit, coconut trees, taro, tamarind.

Livestock farming. Local breed of cows, buffaloes, pigs, chicken, ducks; 3-5 pigs/HH for festivities and for selling, 2-3 cattle/HH for selling, 20-30 chicken and ducks/HH for food.

River use: 6 HHs do fishing for family food and for selling.

Forest utilization. Men are logging and selling timber, mainly to Vietnamese buyers, earn approx. 2-3MVND/HH/month. Men hunting muntjac (deer), birds, porcupine, wild boar for eating and selling. Women collect NTFPs.

Employment and trade. Women are weaving skirts for domestic use and for selling.

Cultural heritage: Spirit forest and graveyard approx. 2km outside the village. Village worship site by a big tree.

**Sopsan Village**

Population: 16 HHs with 89 people.

Ethnicity: Thai (Lao Loum)

Poverty: 88% of households under the official poverty line. Food usually sufficient due to forest resources and cash from selling timber and wildlife that is used for buying food. 2016 due to poor harvest food insufficiency, had to buy rice from Vietnamese traders.

Location and movement: In this location since 1954. Many HHs have migrated to Vientiane. 6km to village group centre (Muong Duong village), 50km to Kouan District town, 50km to Xiankhoang.
Road infrastructure: Earthen road to village that is not accessible during the rains.

River transportation: Five motorboats that used for transportation and fishing.

Electricity: Solar panels, government program.

Water supply: 2 water taps in village for HH water through a French NGO program, but washing and bathing done in the river.

Educational standard: Communication language Thai, but people also know Vietnamese, Kho mu, Hmong languages. Women in general have 5-6 grade school education, girls drop out of school due to distance to secondary school in village group centre.

Health and sanitation: Nearest health clinic in district town, people seldom go there. No medical services available. Women deliver babies in village, some cases of maternal and infant deaths. One traditional healer selling herbal medicines in village. A couple of drug users who got addicted when working in another area.

Livelihoods: Agriculture. Upland cultivation area totally approx. 100ha, each HH has 1.5-2.5 in active annual cultivation and further land in rotation. Production land distance from village 1km to 7km away. Plenty of available land. Rice enough for HH food, and sometimes sold to Vietnamese traders.

Livestock farming. Average 5-7 pigs/HH, some HHs have up to 15 piglets, 15-20 chicken/HH. Totally 20 cows, 6 buffaloes. 2015 buffaloes died due to foot and mouth disease. Cows, buffaloes and pigs raise for selling. When animals get sick, no veterinary services available and no medicines available, so animals die.

River use: 5 motorboats used for goods transportation and fishing. All people are fishing, plenty of fish with many species. Daily catch can be up to 10kg. No riverbank cultivation or other use of riverbank resources.

Forest utilization. Men are logging and working as laborers in logging. Timber taken for construction and for selling. Men hunting daily for family food and selling to Vietnamese traders whenever catch enough. Women collect NTFPs daily for family food.

Employment and trade. Women are weaving skirts for domestic use and for selling.

Cultural heritage: Spirit forest and graveyard with some 500-600 graves in 5 sections, one of them close to the river, one section by the tributary stream. Village worship place in the village.

Causes of poverty according to villagers: Crop failure, poor road infrastructure and lack of trade.
Sopkang Village

Population: 48 HHs with 320 people.

Ethnicity: Thai (Lao Loum)

Poverty: 63% of households under the official poverty line. Food usually sufficient, only 1-2 HHs lack rice 1-2 months annually. Cultivation land availability good, and there is poultry and pigs to eat.

Location and movement: In this location since 1954. Many HHs have migrated to Vientiane. 7km to village group centre (Muong Duong village), 50km to Kouan District town. Village located right on the river bank that is quite steep, houses located spaciously.

Road infrastructure: Earthen, steep access road to village that is not vehicle accessible during the rains. Road between Kouan and Nonghed districts under construction near village, and will improve accessibility. Teenagers often go to village group centre by motorbike.

River transportation: Two motorboats that used for transportation of people and goods.

Electricity: Solar panels and micro-hydro generators.

Water supply: 6 water tanks with 2-3 water taps in each for HH water, washing and bathing done in the river.

Educational standard: Primary and secondary school in village. Elder women’s educational level only up to grade 5, majority of elder people illiterate.

Health and sanitation: Nearest health clinic in district town, people seldom go there. No medical services available. Women deliver babies in village. Villagers use herbs from forest to cure illnesses, and when needed, they go to My Ly Commune health centre in Vietnam by boat.

Livelihoods: Agriculture. Upland cultivation area approx. 100ha located next to village and 3km stretch along the river, the most distant fields only 30 min walk away. Plenty of available land, each HH cultivate annually approx. 2-3ha on steep terrain.

Livestock farming. Each HH has 3-4 cows, some up to 30 cows, have access to district veterinary services and know how to cure sick animals, so animal mortality is low. Approx. 500 pigs in village, each HH has 20-30 chicken and ducks, pigs and poultry used for family food, cows for selling. Animals free roaming and drink from the river.

River use: 5 motorboats used for goods transportation and fishing. HHs fishing for daily food in the river and in the tributary stream close to the village, daily catch 1-3kg, fish is sold when large catch. Plenty of
fish resources. Near the riverbank cultivate mustard, onion, sugar cane, wild growing fruit trees grow on the river bank.

**Fishponds.** 6 HHs have fish ponds and raise fish taken from the river.

**Forest utilization.** Men are logging, income from timber selling used for buying food. Men hunting wild animals for family food and selling. Women collect NTFPs daily for family food.

**Employment and trade.** Nine young male and female villagers work in Vientiane and other places in construction and shoe industry.

**Cultural heritage:** Spirit forest and graveyard close to the river. Village worship place with a small wooden house in village.

**Causes of poverty according to villagers:** Weather conditions, steep landscape, soil degradation, manual cultivation methods and no fertilizers.

**Kengkor Village**

**Population:** 29 HHs with 150 people.

**Ethnicity:** Kho mu and Thai

**Poverty:** 100% of households under the poverty line. Only some 3-4 HHs have enough food year round, annually 20HHs receive rice from the GoL. HHs sell timber and animals to get cash and buy food.

**Location and movement:** Established 1955. Many HHs migrated to Vientiane in 1998-99 and then only 8 HHs left, later many Kho mu people moved in, 2013-15 3 HHs moved to Vientiane.

**Road infrastructure:** Earthen path that is under construction. Kouan District town 50 km away, and it takes 30 min by motorbike to go to Nongcan village group centre.

**River transportation:** Nobody owns a boat, however, waterway is used for going to My Ly in Vietnam and villagers pay Vietnamese boat owners and traders for transportation. Vietnamese traders supply all HH goods by waterway.

**Electricity:** Solar panels and micro-hydro generators.

**Water supply:** Water led through tubes into water taps in village for HH water, washing and bathing in the river.

**Educational standard:** Daily communication languages Kho mu and Thai. Majority of villagers elder people, and only approx. 10% of women can read and write in Lao. Primary school in village, secondary school in village group
centre, and children drop out of school in order to work for their families.

Health and sanitation: Nearest health clinic in district town, people seldom go there. No medical services available, but Village vice head knowledgeable in herbal medicine. Women deliver babies in village. Children are vaccinated. When needed, people go to My Ly Commune health centre in Vietnam which is 30 minutes away by boat.

Livelihoods: Agriculture. Upland cultivation area in annual use approx. 50-55ha, plenty of land available but few HHs to cultivate it, land located at a distance from 500m to 5km from village. Land under village management board that allocates land to HHs.

Livestock farming. 2-3 cows/HH – totally some 100 cows in village, approx. 50-60 buffaloes, Each HH has 2-3 pigs that are for family food and festivities, chicken and ducks kept for family food, 23 goats in village. Animals drink from river and streams. When sick, veterinary services available, so not many animal deaths.

River use: No boats. Five HHs fishing about once a week with average catch of 3-5kg, and women catch fish with baskets and collect snails and moss in the river.

Forest utilization. Each HH has approx. 7ha of planted forest. Men go hunting and take timber for construction and for selling, women collect NTFPs.

Employment and trade. Some teenagers 12-15 years old are working seasonally in Xiangkhoang. Young people migrate out from the village.

Cultural heritage: Spirit forest and graveyard close to the river. Village worship place with a small wooden house in village.

Causes of poverty according to villagers: Weather conditions, steep land that is difficult to cultivate, weeds grow faster than rice.

Phiangthat village

Population: 44 HHs with 276 people.
Ethnicity: Kho mu
Poverty: 93% of households under the poverty line.
Location and movement: In 1992 three small villages were joined and relocated into this location where Phiangthat was founded. Along the Nam Duong, tributary river to the Ca River. Many HHs have out-migrated to Vientiane and other places. Many young people labor migrate seasonally.

Road infrastructure: Earthen, very steep access road to village that is not vehicle accessible during the rains.

River transportation: No boats in village.

Electricity: Micro-hydro generators in the river.

Water supply: 4 water tanks for HH water, washing and bathing in the river.

Educational standard: Communication language Kho mu, but all people can communicate in Lao. Approx. 10% of villagers illiterate, 20% of women, elder people. Primary school in village, secondary school 7km away, so many children drop out of school.

Health and Sanitation: Two unpaid health care officers trained in the district live in the village and can provide health services. Common reported diseases diarrhea, malaria. Women deliver babies in village, previously several maternal and infant deaths but not during the recent years. Due to a GoL toilet construction program, most HHs have private toilets.

Livelihoods: Agriculture. Upland fields along the river close to village. Average annual cultivation area 1.5-2.5ha /HH.

Livestock farming. Each HH has 2-3 cows, some up to 15-20 cows, in 2015 had totally 300 cows but they all died in diseases. In January 2017 there were 80 cows but no pigs and no chicken in the village because all had died. District veterinary services available only when animal epidemics occur.

River use: All villagers fish in the Duong stream for daily HH food, regular catch 0.5-1kg. Men fish with rod and net, women with baskets. Women collect seasonal moss and algae for food. A few HHs cultivate vegetables, mainly inion and lettuce in a small area of 15-20m2 along the river, some HHs have fruit trees along the riverbank, e.g. banana, guava, papaya trees.

Forest utilization. Village located in protected forest area which is not allocated for village use. Plenty of forest around. Men are logging and sell timber to Vietnamese traders, which is an important income source. Men go hunting every day for HH food and for selling, plenty of wildlife. Women collect NTFPs for HH food.

Employment and trade. Many young people labor-migrate to Vientiane and Xiangkhoang for a few months, for a year or permanently. There is a bridge over the tributary and villagers get income from fee vehicles have to pay for using the bridge.

Cultural heritage: Graveyard close to Duong tributary with more than 3000 graves. Village worship site with a spirit house located upstream from the village.