Resettlement Action Plan
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## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>Ahs</td>
<td>Affected Households</td>
</tr>
<tr>
<td>APs</td>
<td>Affected Persons</td>
</tr>
<tr>
<td>CBR</td>
<td>Crude Birth Rate</td>
</tr>
<tr>
<td>CDR</td>
<td>Crude Death Rate</td>
</tr>
<tr>
<td>CDTO</td>
<td>China Datang Overseas Investment Co, Ltd</td>
</tr>
<tr>
<td>CIA</td>
<td>Cumulative Impact Assessment</td>
</tr>
<tr>
<td>DAFO</td>
<td>District Agriculture and Forestry Office</td>
</tr>
<tr>
<td>DHO</td>
<td>District Health Office</td>
</tr>
<tr>
<td>DMS</td>
<td>Detailed Measurement Survey</td>
</tr>
<tr>
<td>DOE</td>
<td>Department of Electricity</td>
</tr>
<tr>
<td>DRC</td>
<td>District Resettlement Committee</td>
</tr>
<tr>
<td>DTP</td>
<td>Datang International Power Generation Co. Ltd</td>
</tr>
<tr>
<td>DWG</td>
<td>District Working Group</td>
</tr>
<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
</tr>
<tr>
<td>ESIA</td>
<td>Environmental and Social Impact Assessment</td>
</tr>
<tr>
<td>ESMI</td>
<td>Environmental/Social Monitoring and Inspection Unit</td>
</tr>
<tr>
<td>EMMP</td>
<td>Environmental Monitoring and Management Plan</td>
</tr>
<tr>
<td>EPL</td>
<td>Environmental Protection Law</td>
</tr>
<tr>
<td>ESMU</td>
<td>Environment and Social Monitoring Unit</td>
</tr>
<tr>
<td>FM</td>
<td>Families</td>
</tr>
<tr>
<td>GOL</td>
<td>Government of Lao People’s Democratic Republic</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GRC</td>
<td>Grievance Redress Committee</td>
</tr>
<tr>
<td>Ha</td>
<td>Hectare</td>
</tr>
<tr>
<td>HC</td>
<td>Health Center</td>
</tr>
<tr>
<td>HHs</td>
<td>Households</td>
</tr>
<tr>
<td>HPP</td>
<td>Hydro-electric Power Project</td>
</tr>
<tr>
<td>IEE</td>
<td>Initial Environmental Examination</td>
</tr>
<tr>
<td>Km</td>
<td>Kilometers</td>
</tr>
<tr>
<td>Km2</td>
<td>Square kilometers</td>
</tr>
<tr>
<td>LB</td>
<td>Left Bank (Mekong River)</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Lao People’s Democratic Republic</td>
</tr>
<tr>
<td>LMB</td>
<td>Lower Mekong River Basin</td>
</tr>
<tr>
<td>LWU</td>
<td>Lao Women’s Union</td>
</tr>
<tr>
<td>M&amp;E</td>
<td>Monitoring and Evaluation</td>
</tr>
<tr>
<td>MEM</td>
<td>Ministry of Energy and Mines</td>
</tr>
<tr>
<td>MOH</td>
<td>Ministry of Health</td>
</tr>
<tr>
<td>MONRE</td>
<td>Ministry of Natural Resources and Environment</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MPWT</td>
<td>Ministry of Public Works and Transportation</td>
</tr>
<tr>
<td>MRC</td>
<td>Mekong River Commission</td>
</tr>
<tr>
<td>Masl</td>
<td>meters above sea level</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td>MW</td>
<td>Megawatt (1 million watts of power)</td>
</tr>
<tr>
<td>NBCA</td>
<td>National Biodiversity Conservation Area</td>
</tr>
<tr>
<td>NCC</td>
<td>National Consulting Company</td>
</tr>
<tr>
<td>NCG</td>
<td>National Consulting Group</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>NLMA</td>
<td>National Land Management Authority</td>
</tr>
<tr>
<td>NTFPs</td>
<td>Non-Timber Forest Products</td>
</tr>
<tr>
<td>NWH</td>
<td>Northwest Hydro</td>
</tr>
<tr>
<td>PAFs</td>
<td>Partially Affected Families</td>
</tr>
<tr>
<td>PAFEC</td>
<td>Agricultural and Forestry Extension Centre</td>
</tr>
<tr>
<td>PAFOs</td>
<td>Provincial Agriculture and Forestry Office</td>
</tr>
<tr>
<td>PCRs</td>
<td>Physical Cultural Resources</td>
</tr>
<tr>
<td>PHO</td>
<td>Provincial Health Office</td>
</tr>
<tr>
<td>PMO</td>
<td>Prime Minister’s Office</td>
</tr>
<tr>
<td>PRC</td>
<td>Provincial Resettlement Committee</td>
</tr>
<tr>
<td>RAP</td>
<td>Resettlement Action Plan</td>
</tr>
<tr>
<td>RB</td>
<td>Right Bank</td>
</tr>
<tr>
<td>RCU</td>
<td>Resettlement Coordination Unit</td>
</tr>
<tr>
<td>RO</td>
<td>Resettlement Office</td>
</tr>
<tr>
<td>ROR</td>
<td>Run-of- River</td>
</tr>
<tr>
<td>SAF</td>
<td>Severely Affected Families</td>
</tr>
<tr>
<td>SIA</td>
<td>Social Impact Assessment</td>
</tr>
<tr>
<td>SMMP</td>
<td>Social Monitoring and Management Plan</td>
</tr>
<tr>
<td>SMO</td>
<td>Social Management Office</td>
</tr>
<tr>
<td>SMU</td>
<td>Social Management Unit</td>
</tr>
<tr>
<td>TNA</td>
<td>Training Needs Assessment</td>
</tr>
<tr>
<td>UNFPA</td>
<td>United Nation’s Population Fund</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children's Fund</td>
</tr>
<tr>
<td>UXO</td>
<td>Unexploded Ordinance</td>
</tr>
<tr>
<td>VDC</td>
<td>Village Development Clusters</td>
</tr>
<tr>
<td>VRDCs</td>
<td>Village Resettlement and Development Committees</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WREA</td>
<td>Water Resources and Environment Administration</td>
</tr>
</tbody>
</table>
0. EXECUTIVE SUMMARY

0.1 INTRODUCTION

In December 2007, the Government of the Lao People’s Democratic Republic (Lao PDR) and Datang International Power Generation Co., Ltd. signed a Memorandum of Understanding (MOU) for the development of the Mekong Sanakham Hydroelectric Power Project (HPP).

During 2008 to early 2010, the pre-feasibility study was conducted and completed. A few months after the pre-feasibility study, the full feasibility study was performed inclusive of a comprehensive Environmental and Social Impact Assessment (ESIA). The result of the ESIA revealed that the development of the project requires the relocation and resettlement of Lao riparian villages in Sanakham, Vientiane Province, and in Kenthao and Paklay districts, Xayaboury province.

Located 155 km upstream from Vientiane capital, the Mekong Sanakham HPP was planned as a low-head run-of-river project with an installed capacity of 684 MW. The electricity produced by the project will be transmitted to Thailand through 500 KV transmission lines and to the Lao grid and Vientiane through on circuit of 115KV.

To comply with the 7-July-2005 Decree 192 on Compensation and Resettlement and 2010 Technical Guidelines on Compensation and Resettlement in Development Projects, the Resettlement Action Plan (RAP) was conducted as part of the ESIA. The main aims are to:

- Enhance the quality of life of project affected people
- Prevent or minimize adverse social impacts that may be created from back water effects that will occur from the project
- Mitigate possible adverse social impacts through the compensation of land and assets and the reestablishment of infrastructure/supporting facilities including livelihood restoration.

The method in the preparation of RAP includes a census of project Affected Persons (APs), consultations and focus group meetings on resettlement site selection and responses to the comments and recommendations of APs.

Please see section 1.6 on terminology to clarify meaning of terms used in this report.
0.2 KEY SOCIAL IMPACTS

The construction of the Mekong Sanakham HPP would lead to the acquisition of land and relocation/resettlement of those who reside on both river banks of the Mekong in the upstream tail water below 220 + 1 masl. The APs are all Low-land Lao who believe in Buddhism. Their way of life depends on traditional rice and maize lantation with livestock rearing such as cattle and buffaloes and poultry.

The average family income of APs is US$ 1,500 per year and this amount is spent on production (US$ 350) and family expenses (US$ 800). The net family income is US $ 350.

The level of income per head, however, is less than US$ 0.75 per day which is below the United Nations’ Poverty Line at US$ 1.25 per day but above the Lao Poverty line set at US$ 0.50 per day.

The construction of the dam means that some people will lose their productive land particularly along the river bank. Mitigation and development packages including compensation and relocation and resettlement schemes are planned.

In sum, the most severe impacts are loss of assets especially of productive land for rice plantations, which adversely affect livelihoods.

0.3 DISPLACED POPULATION

The census indicated that:

- Three (3) villages (267 families, 1127 people) are required to move, that is, the whole village to a newly selected land settlement areas (Resettlement Scheme).

- Families from ten (10) villages (354 families, 1808 people) are required to relocate, that is to shift some houses to upper terraced areas within their home village that is safe from the risk of flooding and bank erosion (Relocation Scheme).

Table 1 below shows number of population will be displaced by the creation of the project.
Table 1: Number of population will be displaced by the creation of the project

<table>
<thead>
<tr>
<th>No.</th>
<th>Village Name/Location: (River Bank)</th>
<th>Displaced Families</th>
<th>Displaced Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. RESETTLEMENT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Ban Donsok (LB) Sanakham, VTE</td>
<td>36</td>
<td>155</td>
</tr>
<tr>
<td>02</td>
<td>Ban Houay Lah Kenthao, XBR</td>
<td>81</td>
<td>323</td>
</tr>
<tr>
<td>03</td>
<td>(LB) Ban Khac Kenthao , XBR</td>
<td>150</td>
<td>649</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>267</td>
<td>1,127</td>
</tr>
<tr>
<td>B. RELOCATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Donphoung (RB) Sanakham, VTE</td>
<td>40</td>
<td>171</td>
</tr>
<tr>
<td>02</td>
<td>Maipakthoun (RB) Sanakham, VTE</td>
<td>54</td>
<td>446</td>
</tr>
<tr>
<td>03</td>
<td>Houaytao (RB) Sanakham, VTE</td>
<td>56</td>
<td>208</td>
</tr>
<tr>
<td>04</td>
<td>Khokkhaodor (RB) Sanakham, VTE</td>
<td>6</td>
<td>35</td>
</tr>
<tr>
<td>05</td>
<td>Donmen (RB) Kenthao, XBR</td>
<td>120</td>
<td>566</td>
</tr>
<tr>
<td>06</td>
<td>Nakham (RB) Kenthao, XBR</td>
<td>19</td>
<td>89</td>
</tr>
<tr>
<td>07</td>
<td>Donsang (RB) Kenthao, XBR</td>
<td>17</td>
<td>76</td>
</tr>
<tr>
<td>08</td>
<td>Boungma (RB) Paklay, XBR</td>
<td>10</td>
<td>46</td>
</tr>
<tr>
<td>09</td>
<td>Kengsao (RB) Paklay, XBR</td>
<td>29</td>
<td>156</td>
</tr>
<tr>
<td>10</td>
<td>Nasack (RB) Paklay, XBR</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Sub-total</td>
<td></td>
<td>354</td>
<td>1,808</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>621</td>
<td>2,935</td>
</tr>
</tbody>
</table>

Note: LB = Left Bank, RB = Right Bank, VTE = Vientiane Province, XBR = Xayaboury Province

0.4. MITIGATION AND DEVELOPMENT MEASURES

To resolve the social impacts, the mitigation and development measures have been planned in the form of an Entitlement matrix shown below.

Table 2: Entitlement matrix for mitigation and development measures

<table>
<thead>
<tr>
<th>Impacts / Issues</th>
<th>Entitlements for Compensation and Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent loss of agricultural land</td>
<td>• Replacement land of at least the same size and equal productive value at a location acceptable to APs.</td>
</tr>
<tr>
<td></td>
<td>• Replacement land will be cleared, fenced and prepared by the resettled (food for work program) or mechanically cleared if the APs cannot provide sufficient labour.</td>
</tr>
<tr>
<td></td>
<td>• In cases where replacement land is not available in sufficient quantity, the APs may accept cash payment for difference between land registered and land provided in the resettlement site.</td>
</tr>
<tr>
<td>Permanent loss of irrigated land</td>
<td>• Replacement irrigation system in resettlement site or</td>
</tr>
<tr>
<td></td>
<td>• Compensation by cash of the labour fee for the current irrigation system development</td>
</tr>
<tr>
<td>Permanent loss of residential land</td>
<td>• Replacement land for housing 600 m² per family</td>
</tr>
<tr>
<td>Loss Category</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| **Permanent loss of commercial land**          | • Replacement land of at least equal value, location will be potable to the APs in order to continue viable commercial activities, or  
  • Cash payment for the value of land if commercial activities cannot be continued or APs do not wish to do so.                                      |
| **Loss of houses**                             | • Provision for new material and construction of new house of a better standard.                                                                                                                             
  • Basic housing area of 10 m² per person.  
  • Basic housing area of 50 m² for 5 members or less.  
  • Barn, livestock pens and other outbuildings will be replaced.  
  • Private fences will be replaced by shared fences.  
  • Flushing latrines will be installed on new house plots.  
  • Household electrical wiring and basic fixtures for three lamps and one plug will be provided.                                               |
| **Loss of commercial structures**              | • Replacement structure in a location acceptable to the APs.                                                                                                                                                
  • Cash option if commercial activities cannot be continued or APs do not want to continue.                                                                                                             |
| **Loss of physical cultural resources**        | • Provision of rituals and acceptable arrangements for transporting moveable items and re-establishment at new site.                                                                                       
  • Replacement of holy house and structures of at least the same value and acceptable to the APs  
  • Provision for appropriate rituals for cemeteries, holy sites and other immovable cultural landmarks prior to moving.                                                                               |
| **Loss of agricultural production system**     | • Allocation and development of 02 ha of land in an off-village location on a community basis (with host village if any).                                                                                     
  • Irrigation system for 01 ha of agriculture land.  
  • A range of feasible production and income generating options in order to get better of.                                                                                                           
  • Supply of basic tools and equipment for agriculture work.  
  • Planting materials for three years, including saplings.  
  • Fertiliser and agro-chemicals, as required.                                                                                                                                                    |
| **Loss of fruit trees and timber / industrial trees** | • Cash compensation based on 5 years of production or estimated return on investment (based on studies and agreed by District Working Group (DWG), the Social Management Office (SMO) (see section 11.3) and Mekong Sanakham HPP Developer) and  
  • Replacement seedling at new village location as part of the livelihood restoration package.                                                                                                |
| **Loss of common property resources**          | • Access to forests, grazing land, fisheries in the new area, livelihood restoration packages, replacement natural common property with more productive private assets  
  • Enhancement and development of common property resources of new villages.                                                                                                                        |
| **Loss community infrastructure**              | • All-weather road to each resettlement site.  
  • Replacement of all community infrastructure of at least the same value and function or improvement of host village.                                                                                |
situation.

- Village Office and meeting/community hall at each resettlement village location,
- New water supply system or improvement of host village year-round water supply.
- Market place and bus station
- Electricity connections to community facilities.

Loss of educational facilities

- Replacement school or upgrading of existing host village facilities, including library.
- Provision of equipment, materials and furniture as required.
- Training of existing and new teaching staff.

Loss of health facilities

- Replacement health centre or upgrading of existing host village health facilities.
- Provision of equipment, medical supplies, water and sanitation arrangements.
- Support for district and provincial health facilities to be of good standard and to have trained staff.
- Improvement of health prevention, diagnosis treatment of common diseases.
- Training of existing and new village health volunteers.
- Health check for all resettles during resettlement transition period and annually until to get better off.
- Free referral and ambulance services for three years after moving.

Loss of cemetery

- New cemetery at the resettlement site as requested.
- Assistance for performing required ceremony in an amount of US$250 per cemetery.

Moving Assistance

- One time disturbance allowance for moving US$150 per household (This covers the cost of labour for dismantle, transportation of moveable assets to new site and assistance to perform spiritual ceremonies in departing villages).

Training and Support

- Training and support for livelihood restoration for 5 years after moving and establishment of household plots or until getting better off in a sustainable manner.
- Skill training for all households based on consultations and agreed to by the community and individual households.
- Social development training for all households, e.g. household budget training, saving and credit groups.
- Support and advice from Resettlement Coordination Unit (RCU) and district resettlement committees (see section 11.3).
- Priority for labour opportunities on project sites.

Food support

- Assistance for 20 kg of milled rice per person per month in the period of 3 years of resettlement or until the new resettled families can afford to get rice sufficiency.
- Additional support of supplementary protein to meet basic nutritional shortfalls during first year of resettlement.

Venerabl Households

- Households with insufficient labour force will receive special assistance for their individual needs during the movement to new place.
Resettlement Action Plan

As discussed in 0.3, two (2) schemes, “Relocation” and “Resettlement”, have been planned to restore long-term livelihood development for displaced people.

- Two resettlement sites at Kenthao Distrit (RS No. KD 1 - Houay Mouang and RS No. KD 2 - Dong Houay Ang) are selected for severely affected people at Ban Houay Lah and Ban Khae, respectively.
- A resettlement site at Sanakham District namely RS No. SD 1 – Donkouad is selected for Ban Donsok which will be severely affected by inundation.

Other mitigation is shifting some houses into the selected site above 223 masl within their home village. These sites are:

- RL No. KD 1 - for affected families of Ban Donmen
- RL No. KD 2 - for affected families of Ban Donsang
- RL No. KD 3 - for affected families of Ban Nakham
- RL No. PD 1 - for affected families of Ban Boungma
- RL No. PD 2 - for affected families of Ban Kengsao
- RL No. PD 3 - for affected families of Ban Nasack
- RL No. SD 1 - for affected families of Ban Donphoung
- RL No. SD 2 - for affected families of Ban Maipakthoun
- RL No. SD 3 - for affected families of Ban Houaytao RL
- No. SD 4 - for affected families of Ban Khokkhaodor

It is a lesser challenge to develop better infrastructure and housing for APs in the proposed relocation/resettlement sites than to restore livelihood development, that is, to make people better off than pre-project conditions.
0.6 LIVELIHOOD DEVELOPMENT

The Mekong Sanakham HPP will adopt a strategy of ensuring that resettled families and host village families are enabled to improve their standard of living by the development of a range of livelihood opportunities. A number of enterprises have been identified, based upon: (a) an evaluation of the natural resources; (b) taking into account the socio-economic and cultural background of the people and the economic environment in which they will be operating; and (c) ongoing consultations with the villagers.

The resettlers will be able to choose from a range of livelihoods, commonly referred to as the 5 livelihood options. They are as follows:

1) Agriculture: wet and dry season cropping with some portion of the land irrigated from nearby rivers.
2) Livestock: livestock raising on a mixture of feed-crops or forages possibly grown on the irrigated areas, and free range grazing
3) Community or private plantations, including management and harvest of Non Timber Forest Products (NTFPs) in community forest, plantation land with a mixture of fast growing industrial species and slower growing but valuable native species plus NTFPs.
4) Aquaculture: community fisheries at the reservoir and individual household fish ponds. For farmers who have paddy fields, the rice-fish system (simple enhancements to increase the natural productivity of fish in paddy fields) will be introduced and promoted.
5) Non-farm employment and cottage industry: waged or self-employment in a range of activities such as small shops, repair and fabrication shops, handicrafts, primary produce trading and construction labour.

0.7 RESETTLEMENT COST

The compensation of loss of land and trees is a requirement to be compensated based on an official rate set by a Committee to be appointed by the Government of Lao P.D.R (GOL). The estimates of compensation cost will be based on a recent official compensation rate paid in the project area (Document No. 163/Governor XBR date 3 February 2010). The compensation, resettlement and livelihood cost for Mekong Sanakham HPP is estimated at US$23,347,398 million as shown in Table 3 below.

Table 2: The compensation and resettlement cost

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>Construction (8 Years)</th>
<th>Operation (23 Years)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1,358,872</td>
<td>1,500,170</td>
</tr>
<tr>
<td>1</td>
<td>EMMP</td>
<td>1,358,872</td>
<td>1,500,170</td>
</tr>
<tr>
<td></td>
<td>Social</td>
<td>23,441,518</td>
<td>180,000</td>
</tr>
</tbody>
</table>
Since most APs are considered poor in the United Nations poverty index, the objective of poverty reduction should be incorporated in the developer’s social policy.

The planned net income after relocation/resettlement is estimated at US$1,000 per year wherein, compared to pre-project estimates, the production cost is about double while family expenses are 62.5% higher. Estimates of family income before and after resettlement are shown in table and figures below.

Table 3: The family income before and after resettlement

<table>
<thead>
<tr>
<th>Descriptions</th>
<th>Before (US $)</th>
<th>After (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FAMILY INCOME</td>
<td>1,500</td>
<td>3,000</td>
</tr>
<tr>
<td>FAMILY EXPENDITURE</td>
<td>1,150</td>
<td>2,000</td>
</tr>
<tr>
<td>- Production expenses</td>
<td>(350)</td>
<td>(700)</td>
</tr>
<tr>
<td>- Family/household expenses</td>
<td>(800)</td>
<td>(1,300)</td>
</tr>
<tr>
<td>NET INCOME</td>
<td>350</td>
<td>1000</td>
</tr>
</tbody>
</table>
Figure 1: Family net income target for (a) relocatees, and (b) Resettlers
0.8 PUBLIC PARTICIPATION AND GRIEVANCE PROCEDURE

A participatory approach is employed throughout the RAP planning process. Each affected village has been officially consulted through village consultation meetings and focus groups including participation in site selection surveys by district and village representatives.

The grievance redress mechanism and process proposed for the Mekong Sanakham HPP is outlined in section 10.3.

0.9 IMPLEMENTATION ARRANGEMENT

The implementation of RAP will be under the Lao system which requires the set up of Committees and Offices at all levels as follows:

1. Provincial Resettlement Committee (PRC)
2. Resettlement Coordination Unit (RCU)
3. District Resettlement Committee (DRC)
4. Village Resettlement and Development Committees (VRDCs)
5. Grievance Redress Committee (GRC)
6. Environment and Social Monitoring Unit (ESMU) under GOL/Ministry of Natural Resources and Environment (MONRE).
7. Resettlement Office (RO) by the project Company.

The timetable for relocation and resettlement should be compatible with the project construction. The best time for moving people would be in the dry season in years 4 and 5.
Table 4: Timetable for relocation and resettlement

<table>
<thead>
<tr>
<th>No.</th>
<th>Description of Activities</th>
<th>Year</th>
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<tbody>
<tr>
<td></td>
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<td>1</td>
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<td>11</td>
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<td>12</td>
</tr>
<tr>
<td>01</td>
<td>Preparation</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Construction</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Commissioning</td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Set-up Committees, RMU/RMO</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Updated census of affected people/assets</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Confirm relocation/resettlement sites</td>
<td></td>
</tr>
<tr>
<td>04</td>
<td>Village consultation program</td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>Capacity building for all parties</td>
<td></td>
</tr>
<tr>
<td>06</td>
<td>Finalization of compensation rate</td>
<td></td>
</tr>
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<td>07</td>
<td>Compensation payment</td>
<td></td>
</tr>
<tr>
<td>08</td>
<td>Relocation/resettlement site plan</td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>Infrastructural development in all sites</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Movement of affected people</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Re-establishment of community system</td>
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<tr>
<td>12</td>
<td>Livelihood development (Relocates)</td>
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<td>13</td>
<td>Livelihood development (Resettlers)</td>
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<tr>
<td>14</td>
<td>Resettlement monitoring</td>
<td></td>
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0.10 ACCUMULATIVE FUTURE COST OF RELOCATION AND RESETTLEMENT

The Figure below shows the number of APs and the resettlement cost the longer the cut-off date to register for resettlement is delayed. The estimate relocation and resettlement cost will be increase 10% every year US$25.63 million, US$ 28.2 million, US$ 31.01 million, in the years 2012, 2013 and 2014, respectively.

Figure 2: Cost for relocation and resettlement
0.11 RECOMMENDATIONS

A number of recommendations have been addressed. The key ones include:

- **Employment** – It is recommended that in each affected family an able member or representative should have a job working with the project construction/operation activities to provide a permanent income for local families during the seven year construction period at least.

- **Quality of Production Land** - Farm plots in the resettlement area should be improved in line with the modes of settler production so as to facilitate adaption to the new environment within the shortest time possible. Further, land improvement should aim to ensure that the per-unit production is higher or equivalent to that before resettlement. This will help guarantee that the resettler production and living standards are higher or equivalent to the original pre-resettlement level within the shortest time possible.

- **Capacity Building and Scholarship** – an adequately financed capacity building programme of relocatees and resettlers is required. In addition, each relocation/resettlement site should be provided with at least one scholarship for a student to further study after secondary school. The National University of Lao and Government Vocational Colleges are the targeted education institutes for young resettlers. In a quid pro quo, after they finish the scholarship, graduates return home and assist in long-term socio-economic and livelihood development of their villages.

- **Benefit Sharing and Equity Issues** - APs should gain benefits from the project such as electricity and employment. Vulnerable Groups including the poor, sick, orphaned and vulnerable children need to be given priority in employment opportunities arising from the project.

- **Micro Financing** - A micro-finance facility to provide small loans and saving accounts for resettled and relocated families is recommended.
1. PREAMBLE

1.1 BACKGROUND

Although hydropower developments create benefits to the country and region (generating revenues and employment from water resources), they also create negative social impacts. A key negative side is concerned with displacement and resettlement. This document is presenting a Resettlement Action Plan (RAP) which is a key environmental and social mitigation activity of the project.

1.1.1 MEKONG MAINSTREAM HYDROELECTRIC AND THE SANAKHAM HPP

The Lower Mekong Basin (LMB) contains four countries, Cambodia, Lao PDR, Thailand, and Vietnam. The LMB is home to approximately 60 million people. The region is faced with high demand for electricity due to population and economic growth including regional investments and cross border trade activities.

The LMB has high hydropower development potential of about 14,000 MW from 12 mainstream hydropower projects that are currently being studied (7 in Lao PDR, 2 in Cambodia and 3 on the Thai-Lao Border. (Figure 3)

To support the expanded role of electricity in the economic development of the region, the Mekong Sanakham HPP is one of 7 planned hydro projects on the main stream of the Mekong River within Lao PDR. China Datang Overseas Investment Co, Ltd (CDTO) is conducting the ESIA as part of the project feasibility studies. During 2010 and 2011 the Hydro China Northwest Engineering Corporation has carried out the engineering pre-feasibility/feasibility studies of the project with an Initial Environmental Examination (IEE) by Norconsult.

The Sanakham HPP dam site is located 1.4 km upstream of Pakheung Village, Kenthalao District, Xayaboury Province, Lao PDR. The dam will be located 1,737 km upstream of the Mekong estuary, 155 km upstream of Vientiane, 25 km downstream of Sanakham City, and 81 km downstream of the proposed Pak Lay HPP. Less than 100km downstream from the Sanakham HPP, there are Thai riparian villages on the opposite bank of the Mekong from the Lao PDR. Road access to the Sanakham dam site is possible via an existing secondary road on the left bank.

The Sanakham HPP is to be a low head run-of-river project with an installed capacity of 684 MW. The electricity produced by the project will be transmitted to Thailand through 500 KV transmission lines and to the Lao grid and Vientiane through on circuit of 230 KV. The reservoir above the dam will be some 93 km long and have a full supply level of 220 meters above sea level (masl). Most of the reservoir, (over 80%) will be contained within the present river channel which floods every year.

The project’s general layout, from left to right bank includes a concrete auxiliary dam, navigation lock, 14 sluice gates, powerhouse with 12 generating units, a flushing sluice with 4
outlets, a fishway and concrete auxiliary dam at the right bank. Overall the dam is 893 m long and 57.2 m high.

Figure 3: Potential Mekong Mainstream Hydroelectric Development
1.1.2 PROJECT PURPOSE

The development of the Mekong Sanakham HPP is consistent with the Lao government policy to encourage economically, socially, and environmentally sound development of the country. It will contribute to the government policy to eradicate poverty and achieve 90 percent electrification throughout the country by 2020. Once the Mekong Sanakham HPP is completed, it will increase national revenues by exporting power and supplying power to the national grid.

1.1.3 PROJECT NEED AND BENEFIT

Lao PDR has a mainly agricultural economy and is classified as a “least developed country”. In 2008 the annual Gross Domestic Product (GDP) per capital of the country was only US$ 810. Most of the population lives in the country side, have very little income and only basic health care. In 1996, at the sixth Party Congress, the GOL established a national poverty reduction program (since changed to the National Growth and Poverty Eradication Strategy (NGPES)) with the goal of lifting the country from the list of least developed countries by 2020. NGPES emphasizes that the social and economic development of the country must occur in a sustainable and environmentally sound fashion.

Achieving and securing sustainable and environmentally sound economic development of the country can be facilitated through developing environmentally, socially and economically sound hydroelectric power as less than 2% of the potential capacity of some 26,000 MW (excluding the main stream of the Mekong River) has been developed.

In 2005 the national electricity demand was only 334 MW. However, due to the continuing pace of development in the country, it is anticipated by 2020 this will have increased to 2,368 MW. Clearly there is a need for additional power generation in Laos and for both economic and environmental reasons hydropower is the preferred source. The guaranteed output of the Mekong Sanakham HPP is 256 MW and an annual average generated energy is 3697 GW hr.

Laos is also in a good position to generate and export significant power to neighboring countries thereby increasing national revenues which can improve development, help reduce poverty and improve agriculture, living conditions and the quality of life of Lao people.

1.1.4 DEVELOPMENT PROGRESS OF MEKONG SANAKHAM HPP

Key dates of development of the project can be briefed as below:

- December 2007, the GOL and Datang International Power Generation Co., Ltd. (DTP) sign a Memorandum of Understanding (MOU) for the Mekong Sanakham HPP, where the GOL entrusted the DTP to build and operate the project on a Build-Operate-Transfer (BOT) basis.

- In 2008, after the MOU was signed between GOL and DTP, as per the entrusted terms, DTP and Hydrochina Xibei Engineering Corporation signed a Contract of Investigation and Design and Research for Mekong Sanakham HPP. Hydrochina Xibei
Engineering Corporation immediately commenced full investigation and design services according to the contract.

- December 2008, CNR (Rhone) submitted an optimization study on Mekong River cascade planning which proposed the normal water level of the project at 220 masl, and installed capacity is 692MW.

- In 2009, the Electric Power Division of Ministry of Energy and Mines confirmed to CDTO for maximum operating water level of the project at 220 masl.

- May 2010, the Pre-feasibility Study Report was completed by the Hydrochina Xibei Engineering Corporation, and the CDTO entrusted Hydrochina Corporation to organize panels to consult the report, in which comprehensive comparison was conducted for the upper and lower dam sites, as well as two different layout schemes (Scheme 1 and Scheme 2) for the lower dam site.

- June 2010, Hydrochina Xibei Engineering Corporation completed the feasibility study in accordance with GOL’s requirement.

- July 2010, GOL reviewed the feasibility study report in line with the World Bank’s criteria.

- August 2010, Electricity Department of Ministry of Energy and Mines issued their review comments on the feasibility study.

- December 27, 2010, Overseas Investment Company of DTP signed the Project Development Agreement (PDA) with GOL.

- March 2011, Hydrochina Xibei Engineering Corporation completed the final feasibility study report responding to GOL comments.

- May 2010, completion of the IEE prepared by NorConsult.

- June 2011, completion of the Engineering feasibility study.

- August 2010-November 2011, ESIA study by the National Consulting Company (NCC).

1.2 **OBJECTIVE OF RAP**

Main objectives of this RAP are as follows:

1) To enhance the quality of life of APs

2) To prevent or minimize the adverse social impacts that may result from the back water effects that will occur from the project

3) To mitigate possible adverse social impacts such as land and asset loss through compensation of land and assets and reestablishment of infrastructure/supporting facilities including livelihood restoration.
1.3 CAUSE OF RELOCATION AND RESETTLEMENT

When closing the main-dam gates the water in the upstream area will gradually raise with the back water extending to 81 km from the main dam. The operating levels for the Mekong Sanakham HPP will be between 220 meters above sea level (masl) during the wet season and 219 masl in the dry season. Due to this operation, some village residing below 220+1 masl will be affected by flooding.

The construction of the upstream pond area of the Mekong Sanakham HPP will severely impact on several villages: namely, Ban Donsok (36 families), Ban Houay Lanh (81 families) and Ban Khae (150 families). All three villages (totaling 267 families, 1,127 persons) are required to move. This will be planned in the form of “Resettlement”.

Other groups of people from 10 riparian villages will be partially inundated and be at risk from bank erosion: namely, Donmen (120 families); Ban Nakham (19 families); Ban Donsang (17 families); Ban Boungma (10 families); Ban Kengsao (29 families); Ban Nasack (3 families); Ban Houyatao (56 families); Ban Donphoung (10 families); Ban Maipakt houn (54 families); and Ban Khokkhaodor (6 families). All affected people, (totaling 354 families, 1,808 people) will be required to shift to higher ground (above 220 masl) within their hom Village. This will be planned in the form of “Relocation”.

1.4 STAKEHOLDERS & SOCIAL GROUPS

There are many stakeholders and social groups involved in planning and implementation of this RAP. Key stakeholders have been listed based upon their stakes and levels of influence on the project in the RAP process. They are:

1) Central/Local GOL and key provincial/district authorities such as Ministry of Energy and Mines (MEM), Ministry of Natural Resources and Environment (MONRE), Ministry of Health (MOH), Ministry of Public Works and Transportation (MPWT), Ministry of Agriculture and Forestry (MAF), National Land Management Authority (NLMA), and concerned provincial and district authorities including:
   o Xayaboury Province/Kenthao District
   o Vientiane Province/Sanakham District

2) Civil Society and Non-Government Organizations (NGOs) including the Lao Women’s Union, Lao Youth Association, Lao National Front for National Construction and other non-governmental organizations that are working in the project area.

3) Potential Affected Communities include 3 groups:
   o Resettlement Group (3 villages)
   o Relocation Group (10 villages)
   o Host Community Group (2 villages)
4) International organizations such as Mekong River Commission, World Wide Fund for Nature (WWF), the International Federation of Red Cross and Red Crescent Societies.

5) Private stakeholders such as China Datang Overseas Investment Co, Ltd (CDTO) and Northwest Hydro (NWH), and National Consulting Company (NCC).

As required by the 2010 ESIA Decree, public participation needs to be conducted over the course of Social Impact Assessment (SIA). Public participation aims to introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns. The purpose is to incorporate stakeholder concerns and local knowledge in the design and execution of the project, and avoid/reduce potential conflicts to the possible extent. This approach fosters stakeholders’ engagement and contribution to the project, enhances its acceptability and encourages realistic expectations as to what the project will deliver to them.

The results of public participation with above key stakeholders were reported in Chapter 7 of this document.

1.5 MEASURES TAKEN TO AVOID OR MINIMIZE RESETTLEMENT

1.5.1 IMPACT AVOIDANCE

There were two studies that mentioned the operating levels of the Mekong Sanakham HPP. One was done in 1994 by the Mekong River Commission Secretariat (MRC) which suggested a normal water level of 230masl for the Sanakham HPP. Under this scheme, the damsite was located at 0+1772km from the estuary with a larger upstream pond.

In 2008 another study by CNR (Rhone), suggested that normal water level for the project would be optimized at 220 masl, which MEM subsequently affirmed. The adjustment of the normal water level is a social and economic impact avoidance since the lower water retention level has reduced the number of APs.

1.5.2 NO BUILD ALTERNATIVE

Under the No Build Alternative, existing conditions would be maintained. The No Build Alternative would not require any displacements or relocations and, thus, would not result in any direct or indirect impacts to the study area. But in the absence and/or very limited budget for fisheries and water resource development on the Mekong mainstream, including environmental management and awareness in this zone, that under the No Build Alternative the existing fish and environmental quality in this area would continue to degrade.

1.6 TERMINOLOGY USED IN THIS REPORT

1) Affected Persons (APs) any person who, as a result of the implementation of a project,
or both. This includes both Partially and Severely Affected Persons. **Affected Persons** = **Severely Affected Persons** + **Partially Affected Persons**.

2) **Severely Affected Persons** (SAPs): people who totally lose their residential and agricultural land including industrial and fruit trees and are required to move to a resettlement area.

3) **Severely Affected Families** (SAFs): families who totally lose their residential and agricultural land including industrial and fruit trees and are required to move to a resettlement area.

4) **Partially Affected Persons** (PAPs): people whose agricultural land or other assets may be damaged or lost due to flood or erosion. Partially affected people have to be compensated and possibly relocated to higher ground within the same village but not resettled in another area.

5) **Partially Affected Families** (PAFs): families whose agricultural land or other assets may be damaged or lost due to flood or erosion; Partially affected people have to be compensated and possibly relocated to higher ground within the same village but not resettled in another area.

6) **Compensation** means payment in cash or in kind for an asset or a resource that is acquired or affected by a project at the time the asset needs to be replaced.

7) **Cut-off date** means date of completion of the census and assets inventory of persons affected by the project. Persons occupying the project area after the cut-off date are not eligible for compensation and/or relocation or resettlement assistance. Similarly, fixed assets such as built structures, crops, fruit trees, etc. Established after the date of Completion of the assets inventory, or an alternative mutually agreed on date, will not be compensated.

8) **Host population** means people who living in or around areas to which people physically displaced by a project will be resettled who, in turn, may be affected by the relocation and resettlement schemes.

9) **Livelihood development** means actions that require to improve the APs living standards in a sustainable manner.

10) **Replacement cost** means the rate of compensation for lost assets must be calculated full replacement cost, that is, the market value of the assets plus transaction costs. The compensation rate will be set by the GOL committee for the project.

11) **Resettlement assistance** means support provided to people who are physically displaced by a project. Assistance may include transportation, food, shelter, and social services that are provided to affected people during their relocation and shelters.
12) **Resettlement Action Plan (RAP)** means an document that specifies the procedures it will follow and the actions that it will take to mitigate adverse effects, compensate losses, and provide development benefits to persons and communities affected by the project.

13) **Resettlement** means moving the whole village to another selected place (with the reestablishment of infrastructure and livelihood accepted by the local authority and the APs.

14) **Relocation** means shifting some houses to upper terraces within the original village which includes a livelihood restoration program.

15) **Study Area means the** area that will be impacted from the development of the Sanakham HPP. It comprises: (1) the area upstream of the reservoir; (2) the reservoir area (villages inside this area are required to be resettled or relocated to ground higher than the FSL of 220 masl); (3) the construction area; (4) the quarry site; and (5) the area downstream of the dam.
2. PROJECT FEATURES OF THE MEKONG SANAKHAM HPP

2.1 PROJECT LOCATION

The Mekong Sanakham HPP is one of 5 proposed projects in a cascade planned on the main stream of the Mekong River within the Lao PDR. The dam will be located 1,737 km upstream of the Mekong estuary, 155 km upstream of Vientiane, 25 km downstream of Sanakham City, and 81 km downstream of the proposed Pak Lay HPP. Less than 100km downstream rom the project, there are Thai riparian villages on the opposite bank of the Mekong from the Lao PDR. Road access to the Mekong Sanakham dam site is possible via an existing secondary road on the left bank.

The Mekong Sanakham HPP is to be a low head run of river project with an installed capacity of 684 MW. The electricity produced by the project will be transmitted to Thailand through 500 kV transmission lines and to the Lao grid and Vientiane through on circuit of 115 kV.

The project’s general layout, from left to right bank includes a concrete auxiliary dam, navigation lock, 14 sluice gates, powerhouse with 12 generating units, a flushing sluice with 4 outlets, a fish pass and concrete auxiliary dam at the right bank. Overall the dam is 893m long and 57.2 m. high.

The upstream pond above the dam (based on backwater length at nomal pool level) will be some 81 km long and have a full supply level of 220 meters above sea level (masl). Most of the reservoir will be contained within the present river channel which floods every year.

It is important to note that he Sanakham HPP is to be operated as a run-of-river scheme. The maximum surface area of the upstream pond, at 220 masl during project operation, will be 131.6 / or 106.2 km². This is approximately (33% or 7%) greater than the 98.9 km² area flooded by the river at its average normal high water level of 211.8 masl before the project.

During operation, average low water levels downstream will be (on average) 0.3% lower than without the project during the dry season (between the months of December and May). This will have relatively insignificant physical, biological and social impacts.

In contrast average high water levels downstream will be (on average), 0.95% higher than without the project during the wet season (between the months of June and November). The biological and social impacts of this increase in average high water level are discussed in the Environmental Impact Assessment (EIA).
As shown on Figure 4 above, the closest National Biodiversity Conservation Area (NBCA) called Nam Phouy is located near the upper limit of the study area and will not be affected by construction or operation of the project. The EIA search of existing information and subsequent field studies did not identify any rare, endangered or threatened habitats or species in the study area. This is due to extensive human occupation and activities over many years.
2.2 PROJECT FEATURES

The project is a run-of-river dam type. Major structures include concrete wing dam on the left bank, 14 sluice gates, power house, 500-tons navigation ship lock, fish pass, 4 sluice gates and concrete wing on right bank. Normal water level is 220 m (asl), dam crest level is 230.5 masl, dam height is 57.2 m and length of retaining structure is 893 m. Total installed capacity of the power plant is 684 MW, average annual energy output is 3,696.7 GWh with an annual utilization hours of 5,601 hours. There are 12 bulb turbines in total, with a minimum discharge of about 540 m$^3$/s.

The major electricity produced will be transmitted to Thailand through 500 KV transmission lines and the remaining electricity will be transmitted to Vientiane through on circuit of 115 KV. The catchment area of the whole basin is 795,000 km$^2$. The catchment area above the dam site is 290,103 km$^2$.

![Figure 5: HPP Normal Water Level Planned on the Mekong](image)

The Table 5 below provided details of the project.
Table 5: Project Features

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<tr>
<td></td>
<td>Catchment area of whole basin</td>
<td>km²</td>
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<tr>
<td></td>
<td>Catchment area above dam site</td>
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<td>Mean annual discharge</td>
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<td>Minimum actual discharge</td>
<td>m³/s</td>
<td>540</td>
<td>ChiangKhan station(2004)</td>
</tr>
<tr>
<td></td>
<td>Design flood standard &amp;discharge</td>
<td>m³/s</td>
<td>31,700</td>
<td>P=0.2%</td>
</tr>
<tr>
<td></td>
<td>Check flood standard &amp; discharge</td>
<td>m³/s</td>
<td>34,400</td>
<td>P=0.05%</td>
</tr>
<tr>
<td>4</td>
<td>Sediment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual mean suspension load discharge</td>
<td>10³ t</td>
<td>69,000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Annual mean sediment concentration</td>
<td>kg/m³</td>
<td>0.495</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Measured maximum sediment concentration in flood season</td>
<td>kg/m³</td>
<td>0.686</td>
<td>September</td>
</tr>
<tr>
<td></td>
<td>Annual mean bed load discharge</td>
<td>10³ t</td>
<td>1,310</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Reservoir</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Reservoir level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Check flood level</td>
<td>m</td>
<td>222.15</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design flood level</td>
<td>m</td>
<td>221.20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Normal water level</td>
<td>m</td>
<td>220</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dead level</td>
<td>m</td>
<td>219</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Reservoir area at normal pool level</td>
<td>km²</td>
<td>131.64</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Backwater length at normal pool level</td>
<td>km</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Reservoir volume</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total reservoir storage (natural)</td>
<td>106 m³</td>
<td>987</td>
<td>Flood level 222.15m</td>
</tr>
<tr>
<td></td>
<td>Active storage</td>
<td>106 m³</td>
<td>131.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dead storage</td>
<td>106 m³</td>
<td>760.2</td>
<td>Dead level 219m</td>
</tr>
<tr>
<td>III</td>
<td>Discharge and corresponding downstream level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum discharge at design flood</td>
<td>m³/s</td>
<td>31,700</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corresponding downstream level</td>
<td>m</td>
<td>219.53</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum discharge at check flood</td>
<td>m³/s</td>
<td>34,400</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corresponding downstream level</td>
<td>m</td>
<td>220.59</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Minimum discharge</td>
<td>m³/s</td>
<td>540</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corresponding downstream level</td>
<td>m</td>
<td>198.34</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discharge at unit operating under full load</td>
<td>m³/s</td>
<td>5,500</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Corresponding downstream level</td>
<td>m</td>
<td>205.02</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Power benefit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Total installed capacity</td>
<td>MW</td>
<td>684</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Firm output (P=90%)</td>
<td>MW</td>
<td>256</td>
<td></td>
</tr>
</tbody>
</table>
### Main structure

1. **Dam**
   - **Dam type**: Concrete weir dam
   - **Designed earthquake intensity**: Degree VII
   - **Dam crest elevation**: m 230.5
   - **Maximum dam height**: m 57.2
   - **Dam crest length**: m 893

2. **Water release structure**
   2.1 **Sluice gate**
      - **Floor elevation of sluice gate inlet**: m 198
      - **Opening dimension and number**: m² 18–15×22
   2.2 **Sediment flushing outlet**
      - **Floor elevation of inlet**: m 176.3
      - **Opening dimension and number**: m² 6-2.5×5

3. **Powerhouse**
   3.1 **Powerhouse dimension (L×W×H)**: m 352.2×80.7×57.2
   3.2 **Unit installation elevation**: m 187.4
   3.3 **Design available discharge**: m³/s 5,500 Single unit 458.3
   3.4 **Bottom sill elevation of power intake**: m 182.8
   3.5 **Switchyard model**: GIS

4. **Navigation lock**
   4.1 **Effective dimension of navigation lock**: m 120×12×4
   4.2 **Maximum lift of navigation lock**: m 20
   4.3 **Daily water consumption of lock**: m³/s 5.62

5. **Fish ladder**
   5.1 **Type**: Bottom outlet+ vertical & sloped channel
   5.2 **Size of fish ladder section**: m 5×3
   5.3 **Area of fish passage holes**: m² 7
   5.4 **Longitudinal slope**: 1/70
   5.5 **Overall length of fish ladder**: m 1,530

### Main E&M equipment

1. **Turbine (GZ(763)-WP-730)**
   1.1 **Number**: set 12
   1.2 **Rated output**: MW 56.1
   1.3 **Rated head**: m 13.5
   1.4 **Rated discharge**: m³/s 458.3

2. **Generator (SFW55-72/)**
   2.1 **Single unit capacity**: MW 57

3. **Transmission lines**
   3.1 **Voltage (kV)**: 500/115 Thailand:500kV
### Resettlement Action Plan

**Source:** NHW (2011), Feasibility Study of Sanakham HPP  
**Note:** *Resettlement **Relocation*

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2</td>
<td>Number of circuits</td>
<td>circuit</td>
<td>2/2</td>
<td>Lao:115kV</td>
</tr>
</tbody>
</table>

#### VIII Construction Works

1. **Main works items**
   - Overburden excavation: $10^6$ m³, 4.43
   - Rock open excavation: $10^6$ m³, 3.52
   - Concrete and reinforced concrete: $10^6$ m³, 1.66
   - Reinforcing bars: t, 63,594
   - Steel materials: t, 3,220

2. **River diversion**
   - Method: By stages
   - 1st-stage diversion standard: 20-year flood, Q=22,900m³/s
   - 2nd-stage diversion standard: 20-year flood, Q=22,900m³/s

3. **Construction period**
   - Preparation: month, 17
   - First unit generation: month, 70
   - Total construction duration: month, 85

#### IX Estimated cost

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Static total investment</td>
<td></td>
<td>106 $</td>
<td>1,367.51</td>
</tr>
<tr>
<td></td>
<td>Including:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a) Major components structure</td>
<td></td>
<td>106$</td>
<td>943.764</td>
</tr>
<tr>
<td></td>
<td>b) Land acquisition &amp; resettlement</td>
<td></td>
<td>106$</td>
<td>9.27</td>
</tr>
<tr>
<td></td>
<td>c) Independent cost</td>
<td></td>
<td>106$</td>
<td>282.1</td>
</tr>
<tr>
<td></td>
<td>d) Transmission line works</td>
<td></td>
<td>106$</td>
<td>42.826</td>
</tr>
<tr>
<td></td>
<td>e) Basic contingency fee</td>
<td></td>
<td>106$</td>
<td>98.533</td>
</tr>
<tr>
<td>2</td>
<td>Pricing difference contingency fee</td>
<td></td>
<td>106$</td>
<td>229.283</td>
</tr>
<tr>
<td>3</td>
<td>Loan interest during construction period</td>
<td></td>
<td>106$</td>
<td>243.197</td>
</tr>
<tr>
<td>4</td>
<td>Total investment</td>
<td></td>
<td>106$</td>
<td>1,848.97</td>
</tr>
</tbody>
</table>

#### X Economic indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Unit</th>
<th>Quantity</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Static investment per kW</td>
<td>$/kW</td>
<td></td>
<td>2,072</td>
</tr>
<tr>
<td></td>
<td>Static investment per kW.h</td>
<td>cents/kW.h</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>2</td>
<td>Dynamic investment per kW</td>
<td>$ /kW.h</td>
<td></td>
<td>2,801.5</td>
</tr>
<tr>
<td></td>
<td>Dynamic investment per kW.h</td>
<td>cents/kW.h</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>FIRR of total investment</td>
<td>%</td>
<td></td>
<td>9.91 After income tax</td>
</tr>
<tr>
<td>4</td>
<td>FIRR of capital fund</td>
<td>%</td>
<td></td>
<td>12.34</td>
</tr>
<tr>
<td>5</td>
<td>Electricity tariff to grid</td>
<td>cents/kW.h</td>
<td></td>
<td>7.7</td>
</tr>
<tr>
<td>6</td>
<td>Loan payback years</td>
<td>Year</td>
<td></td>
<td>19.8</td>
</tr>
</tbody>
</table>
2.3 PROJECT COMPONENTS

The project components consist of a retaining structure, reservoir, navigation lock, sluice gates, power house, fish-pass and auxiliary facilities.
Table 6: Project Components of Mekong Sanakham HPP

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retaining Structure</td>
<td>The whole structure of the project across the Mekong River has a total length of about 893 meters with a crest elevation of 230.50 meters and a height of 57.2 meters.</td>
</tr>
<tr>
<td>Reservoir</td>
<td>Construction of the dam across the Mekong river will create upstream reservoir area of 131.64 km² at normal pool level 220 masl with a reservoir volume of 987 million m³ and a backwater length at normal pool level of 81 kilometers.</td>
</tr>
<tr>
<td>Navigation Lock</td>
<td>Single-line one stage ship lock in the left bank flood plain right side of sluice gate. It will consist of the following: upstream approach channel, upstream lock head, downstream approach channel, U/S and D/S berthing piers. Dimension of navigation lock is 120x12x4 meters. Maximum navigation clearance is 8 meters. The mean duration of passing the lock for a vessel is tentatively defined as 40 minutes; the daily mean passing frequency is 20. The number of navigable days is 330; the annual total dead weight tonnage of one way passing is 2.64 million tons. The daily mean water consumption is about 5.6 m³/s.</td>
</tr>
<tr>
<td>Sluice Gates</td>
<td>To minimize the impact on reservoir sediment and reduce land inundation impact from the reservoir tail, 18 sluice gate are part of the design. There will be 11 surface flood flow releasing and sand flushing sluice gates on the left bank; also there will be 7 low level outlets, 4 on the right bank and 3 on bank which are designed for operation during the flood season and will facilitate the discharge of sediment. The dimensions of each sluice gate are 15x22 meters.</td>
</tr>
<tr>
<td>Power House</td>
<td>One power house dam section is arranged on the riverbed on the right side; it has 12 bulb tubular units with a total Capacity of 684 MW. The Power house dam section is 343 meters long.</td>
</tr>
<tr>
<td>Fish-pass</td>
<td>The fishpass will be designed to connect the migratory paths of fish. The proposed design consists of an entrance, fishway pond, resting pond, flood gate and a maintenance gate at the entrance and exit. The size of fishpass opening is 5x3 meters and the overall length of the fishpass is 1455 meters.</td>
</tr>
</tbody>
</table>
2.4 OVERVIEW OF THE SOCIAL ENVIRONMENT IN THE PROJECT AREA

Lao PDR has the population of 6.8 million (about 100,000 HH). The country is home to 49 ethnic groups that can be categorized into four main language groups: Tai-Lao (formerly Lao Loum), Mon-Khmer (formerly known as Lao Theung), Sino-Tibetan (formerly known as Lao Soung) and Hmong-Ewmien (formerly known as Lao Soung).

The main religion is Buddhism. The general socio-cultural information can be summarized as below:

Land Area: 236,800 km$^2$
Population Density: 25 persons/km$^2$
Population Growth: 2.5%
Labour Force: 3.1 Millions
Ethnicity: 49 ethnic groups
Religion: Buddhism

Based on the Lao administrative map, the Mekong Sanakham HPP is within the boundary of 2 provinces, Vientiane and Xayaboury (Figure 10). Xayaboury is located on the right bank while Vientiane is on the left bank. Some villages in Kenthao and Pak Lay in Xayaboury Province will be affected by the operation level of 220 masl and some villages in Sanakham District in Vientiane Province will also be affected. Vientiane Province is located on the left bank of the Mekong River in Central Lao PDR and has a total area of 15,927 square kilometers. The total population is about 433,567 people. Phonehong is its capital city and Sanakham (left bank) is a border District situated in front of Chiang Khan District in Thailand.

Also located downstream on the left bank is Meun District. Meun is a new district of Vientiane Province. It was established recently in 2006. Meun is a border district located on the left bank of the Mekong opposite Pak Chom District of Thailand. Some riparian villages in this district are identified as downstream communities of the proposed Mekong Sanakham HPP.

Xayaboury (right bank of the Mekong) is a northwestern province sharing a border with Thailand and is known for its very rugged landscape with forested mountains and production of rice, cotton, peanuts, sesame, maize and oranges. Teak forests cover large parts of the province. Xayabou y has a po ulation of about 346,500.
The SIA divided the community and people in the project area into three social groups.

- Group 1 – Upstream and communities residing near construction/quarry sites.
- Group 2 – Downstream communities.
- Group 3 – Resettlement host communities.

A detailed socio-economic survey of each group is presented in the SIA report. However, some key socioeconomic information is available in Chapter 5 of this report.

2.5 PROJECTED AFFECTED AREAS

2.5.1 INUNDATE AREA

The project will create a tail-water-pond capacity of 987 million m³ (below PMF level 222.15 masl) and 8.27 million m³ (below normal water level 220 masl). The backwater will be extended to 81 km upstream from the main dam.

The inundated land includes arable land (565.14 ha), orchard (59 ha), woodland (1,750.74 ha) and homestead (28.1 ha). A total of 3 villages will be severely affected and 10 villages will be partially submerged.

2.5.2 POPULATION INFORMATION

The census with demarcation of inundation/backwater level of 220 + 1 masl indicated that there are 13 villages that will be potentially impacted, they include:

- Three villages (Donsok, Houay Lah, and Khae) with total 267 families (1,127 people) will be severely affected as most houses and farmland in the village will be submerged.
- Two villages (Houaytao and Donmen) with total 436 families (1,828 people) will be partially affected by the reservoir. 176 families (774 people) 176 families (787 people) will need to be relocated to higher terrain within their village land.
- Eight villages (Donphoung, Maipakthoun, Khokkhaodor, Nakham, Donsang, Boungma, Kengsao, and Nasack) with total 1,391 families (7,769 inhabitants) will be at risk of bank erosion. Around 178 families (1,021 people) will need to be relocated to higher ground far from the Mekong River Bank.
- Subtotally, the number of families to be relocated due to the potential flood and the risk from bank erosion is 354 (1,808 people).
- In sum, from the total number of 2,003 families (10, 724 people) of the 13 directly affected villages by Sanakham HPP, 621 families (2,935 people) are to be resettled or relocated.

2.5.3 CONSTRUCTION AREA
The land area in the vicinity of the dam site will be used for office and living facilities, warehouses, electrical and mechanical equipment assembly yard, auto repair workshop, materials to make up area, machinery depot, concrete batching plant, quarry sites, disposal areas, and road. (Fig. 2-8)

![Construction Layout Plan](image)

**Figure 11: Construction Layout Plan**

### 2.5.4 ACCESS ROAD

The road from Sanakham to the damsite as well as the road from Kenthao to the damsite on the right bank will be reconstructed. In addition, the bridges need to be reinforced or rebuilt to meet the transportation requirements.

The access road from Ban Pakmee to the head work area, about 24.2 km, will need to be constructed. This includes 6.35 km around the seat of Sanakham Town. The access road is a highway grade III (asphaltic surface with two-lanes 8m wide) with a design speed of 30 km/hour. A similar design will also be used for road access to the quarry site; a total length of 1.88 km connected to the main access road.

The IEE/EIA of the access road will be conducted separately as a specific project and will not be included in this report.
2.6 PROJECT COST

The 2011 latest estimated construction cost of the project is US$ 1,848.9 million. The key items of project costs are as follows:

- Static total investment: 1,367.5
- Pricing difference contingency fee: 229.2
- Loan interest during construction period: 243.2
- Estimated Total Project Cost: 1,848.9

2.7 PROJECT IMPLEMENTATION SCHEDULE

The project implementation time is divided into 2 periods; preparation and construction.

- Preparation: 15 months
- Construction: 75 months
- First unit generation: 43 months
- Total construction duration: 75 months

![Figure 13: Tentative Project Implementation Schedule](image)
3. POLICY FRAMEWORK RELEVANT TO RESETTLEMENT

3.1 LIVELIHOOD POLICY ISSUES

3.1.1 NATIONAL FOCUS

In the Lao PDR, assessment of livelihood systems have focused on food security, ethnicity, gender, coping mechanisms, the availability of infrastructure (energy, education, health) and the impact of poverty reduction.

In regard to food security, the negative impact of shifting cultivation is a constant theme of government policy since the establishment of the Lao PDR. The 1989 national forestry conference, for instance, recommended rationalizing land and forest use among villagers and introducing alternatives to shifting cultivation.

The government wants settled upland communities to practice permanent agriculture on attributed land parcels, with access to village buffer-zone forest, infrastructure and social services, linking them to wider economic and social systems.

To achieve this, the tools used in the development during the period of 1989-1996 were based on land use planning and land and forest allocation. From 1996 to 2002 land allocation was carried out in some 6,200 villages (or more than 50% of the national total) and more than 379,000 households (or more than 60% of all agricultural households) Land use planning and land allocation has been characterized as one of the few forest related programmes with clearly defined policy objectives, detailed instructions for field implementation and nation-wide implementation.

In recognition that shifting cultivation (slash-and-burn) is unsustainable and impoverishing and there is need of alternatives, the GOL aims to:

- Make agriculture sedentary through diversification and agro forestry.
- Open market access through feeder roads and market information.
- Rationalize land allocation and land use entitlements
- Introduce land-use zoning based on slope and land capability
- Establish rural savings and credit.

3.1.2 AGRICULTURE/FORESTRY FOR NATIONAL GROWTH AND POVERTY ERADICATION

The National Growth and Poverty Eradication Strategy (NGPES) is the strategic framework under which the GOL’s future growth and poverty eradication programs will be developed and implemented. The NGPES is a holistic and comprehensive framework for tackling poverty and achieving the goal of leaving behind the Lao PDR’s least developed country status by the year 2020. The NGPFS has a dual objective - to enhance growth and development, and to reduce poverty
The agriculture and forestry sector provides the economic, social and cultural base for more than 80% of the population and accounts for more than 50% of Gross Domestic Product. This sector is therefore a key component of the NGPES.

The other NGPES objectives and goals are to sustain economic growth with equity at an average rate of about 7%; triple per-capita income of the multi-ethnic Lao population by 2020; and to halve poverty levels by 2005 and eradicate mass poverty by 2010; and to eliminate opium production by 2006 and shifting cultivation by 2010

### 3.1.3 RURAL DEVELOPMENT AND THE NGPES

The GOL rural development strategy has two major components: improving access to the factors of development; and strengthening a comprehensive poverty-focused planning process at the district level to ensure all initiatives are mutually supportive and coordinated.

Improving access to the factors of development means access to production inputs, markets, human resources, social services and rural finance. These 5 categories include infrastructure, technology, education and health services and natural resource management. Market information, market linkages and trade facilitation and other factors are needed to help the transition from subsistence to commercial farming and from overwhelming dependence on agriculture to a more diversified economy.

A particular challenge is the development of alternatives to shifting cultivation: hence the need to support initiatives for diversification into livestock, horticulture and cash crops. Agro forestry and NTFPs also offer alternatives. Poor households in rural areas must first and foremost secure their food supply. Planning must start with this basic need.

All factors must be mutually supportive. Thus the NGPES places a great emphasis on enabling the rural poor to attack their own poverty.

### 3.1.4 CAPACITY BUILDING

Capacity building at the district and village level is urgently needed. Improvement of skills is required in diversifying land use and watershed management in social and environmental impact analysis and in mitigation regarding rural and other developments. Across all participants complementary support in all undertakings at the district level is necessary, including for the elimination of poppy cultivation and unexploded ordnances (see Figure below).
3.1.4 ROLE & IMPORTANCE OF AGRICULTURE/FORESTRY IN POVERTY REDUCTION

Most of the poorest people are upland farmers belonging to ethnic groups and living in diverse socio-economic and agro-ecological settings. From 1976 to 2000, the role of agriculture and forestry sector in poverty reduction was characterized by an increase in wetland rice production. This success occurred mainly in the lowlands, with development of irrigation schemes while poverty in isolated areas remained unsolved. From 2000 onwards, the agriculture and forestry sector worked from a strategic vision and master plan. The agriculture and forestry objectives for 2020 include:

- Ensure food security
• Promote commodity production, especially for export
• Stabilize shifting cultivation & eradicate poppy cultivation
• Diversify and modernize the Agro-forestry sector
• Maintain a healthy & protective forest cover as an integral part of rural livelihood system and generate a sustainable stream of forest products
• Improve rural livelihoods.

The agriculture and forestry policy priorities of Lao PDR can be summarized as below.

• Market orientation
• Participation and human resource development.
• Community-based participation is the catalyst for diversifying and modernizing agriculture. It is fundamental to a focused development approach that forms the core of the strategic plan. For participation to be effective a long-term commitment is needed to build capacity at the local level.

3.1.5 DECENTRALIZATION & AGRICULTURAL DEVELOPMENT GOALS

The government is redefining central and local government relations: “The provinces as the strategic units, the districts as the planning and fiscal units and the villages as the implementation units”. Responsibilities at each level are being reviewed to develop a fully integrated system that is highly responsive to local needs and opportunities. See Table 7 below.
### Table 7: Agricultural Development in the Mekong Corridor

<table>
<thead>
<tr>
<th>For Sloping/Uplands</th>
<th>For Lowlands/Mekong Corridor</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Land use zoning</td>
<td>• Improve &amp; Diversify farming systems: cash crops, livestock, fishery production.</td>
</tr>
<tr>
<td>• Land allocation and use</td>
<td>• Expand intensify value added processing.</td>
</tr>
<tr>
<td>• diversify farming systems and agro forestry development through adaptive research</td>
<td>• Dev. Internationally accepted product grades &amp; Standards.</td>
</tr>
<tr>
<td>• Promote community management of natural resources</td>
<td>• Dev. Market research and information systems and regional market links between producers and wholesale and retail buyers.</td>
</tr>
<tr>
<td>• Sustainable land use management</td>
<td>• Rehabilitate expand &amp; intensify irrigation Schemes with community based management.</td>
</tr>
<tr>
<td>• Strengthen demand driven extension</td>
<td>• Strengthen rural and agribusiness lending by state-Owned commercial Bank and Private commercial banks.</td>
</tr>
<tr>
<td>• Expand and intensify small scale community managed irrigation Schemes</td>
<td>• Strengthen and expand rural credit facilities through free competition and market determined interest rates.</td>
</tr>
<tr>
<td>• Develop and expand rural savings &amp; credit systems: target credit to support techno Adoption.</td>
<td></td>
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<tr>
<td>• Strengthen the capacity and legal framework of state owned commercial Banks in commercial banking transactions.</td>
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<tr>
<td>• Open community market access by upgrading and expanding feeder roads and market information</td>
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### 3.2 SOCIAL & RESETTLEMENT LAWS/REGULATIONS

The social legal and regulatory frameworks in Lao PDR are considered progressive from the perspective of international lending/development agencies. The key legal framework for compensation and resettlement is “The Prime Minister’s Decree No. 192/PM on Compensation and Resettlement (2005). Other related GOL social and cultural frameworks are found in Land law, Archaeology Law and Legal Status of Ethnic Groups.

#### 3.2.1 GOL RESETTLEMENT POLICY & GUIDELINES

**a) Decree 192/PM**

The Office of Prime Minister’s Decree No. 192/PM on Compensation and Resettlement (2005) comprises six sections and nineteen articles:

- Section 1 is the general section which sets out the objective and fundamental principle of compensation, and resettlement/relocation of APs. It also provides instructions and procedures for mitigation and mediation for all potential negative
impacts on socio-economic and livelihood of APs within or in the vicinity of the project
area. Defines and classifies APs such as vulnerable and minority ethnic groups.

- Section 2 states and defines the right of APs to receive compensation
- Section 3 states and defines compensation requirements and procedures, assistance
  measures during relocation, resettlement and livelihood development
- Section 4 defines resettlement and compensation components and emphasizes the
  importance of local culture and tradition, community participation in the process,
  grievance mechanisms and budgetary considerations.
- Section 5 refers to enforcement procedures for both the violator and complier
- Section 6 sets out the implementation procedures as well as sets out the institutional
  frame work of responsibility.

Decree 192/PM further states that the project owner is responsible for planning and the
implementation of resettlement of APs to a standard that no less than pre-project living
standards. This requires the identification of APs, details of their current lifestyle as well as
understanding possible relevant social issues that may have resulted from other projects. As a
part of the SIA the project owner must employ a third party, a resettlement expert, to engage
with all key project stakeholders including relevant GOL officials, APs, village representatives,
host and neighboring communities in addition to the project owner.

Once a SIA has been completed the Decree requires the development of a Social Monitoring
and Management Plan (SMMP) aimed at mitigating the identified adverse social impacts while
encouraging and enhancing positive social impacts.

Mitigating adverse social impacts requires creating an inventory of lost assets, land, public
infrastructure or culture. Planning and the implementation of compensating losses whether by
means of monetary reimbursement, resettlement/relocation and replacement or repair of losses,
must be achieved at an equal or greater value than pre-project levels.

The planning and implementation phase under Decree 192/PM must include the participation
of all key stakeholders including minority and vulnerable groups. Finally, monitoring and
evaluating methods must be carried out to identify and remediate any other adverse social
impacts faced by APs.

b) GOL Resettlement Policy (1997)

The GOL’s Resettlement Policy (1997) falls under the Electricity Law, the Water Law, and the
Road Law in that project developers are required to provide the affected population with
compensation and/or replacement land for land taken from them as a result of the construction
and/or operation of a project. The Draft National Resettlement Policy for Major Projects in Lao
PDR delineates a set of regulations for preparing and implementing an involuntary relocation
program:

- All electricity projects in Lao PDR that fulfill the following criteria are required to
• All Electricity Projects involving the necessary relocation of 200 or more individuals.

• All Electricity Projects involving the loss of land, community structures, services and/or livelihood (income) of 200 or more individuals.

• All Electricity Projects that result in the loss of housing, land, community structures, resources, habitat and/or livelihood of 100 or more individuals that are disadvantaged, including vulnerable ethnic groups, isolated communities, households headed by women and the poorest communities.

• All Electricity Projects with less than 200 individuals affected by project activities do not require a separate RAP, however, resettlement plans for those individuals that fall into this category (i.e. 100 individuals from disadvantaged groups, requiring relocation, loss of community structures, services, livelihoods, housing and land), shall be included in the SMMP and an Environmental Monitoring and Management Plan (EMMP) that is required for the environmental assessment process. In doing so the resettlement plans included in the SMMP shall incorporate the relevant requirements of the Environmental Management Standard.

3.3 PROVINCIAL SOCIO-ECONOMIC DEVELOPMENT PLAN

3.3.1 VIENTIANE PROVINCE

The Vientiane Province’s fourth five-year development plan (2011-2015) focuses on the development of agricultural processing industry, and the creation of prerequisite factors for rural development with the family and village at the centre of development. Economic development progress in the past five years can be figured from the average annual per capita income which rose from approximately US$330 to over US$750. The value of the province’s exports reached US$30 million, which reflects a 24 percent increase over of the past five years. Imports were valued at US$14 million this year; an increase of 14 percent over the previous year. There are now 5,968 poor families in 88 villages of Vientiane Province, accounting for 7.2 percent of the total provincial population. It should be noted that a target has been set to achieve an average annual per capital income of US$1,400, with an average growth rate of 9 percent for the next five years.

3.3.2 XAYABOURY PROVINCE

Xayaboury Province comprises 10 districts, of which Xayaboury and Xienghon are on the government's list of 47 poorest districts nationwide. Locals have been farming for many centuries and district officials believe combining local knowledge with modern farming techniques is a key to poverty reduction. Although the number of poor families is steadily declining year by year the district basic poverty among households continues to persist. However, district officials are confident they will be able to declare basic poverty reduction by 2012.
The district has more than 3,000 hectares of rice fields and 2,600 hectares of Job's tears which are expected to increase in the future as villagers boost production for sale. Villagers compete to grow Job's tears to sell to a Chinese-owned factory in the district. A Chinese company also has a concession of about 4,500 hectares to grow rubber trees, which provides local people with employment. It is believed that infrastructure development and the adoption of new farming methods will expand farming and animal husbandry activities, which are key factors in improving living standards.

3.4 ETHNIC GROUPS

The 1991 Constitution defined Lao PDR as a Multi-Ethnic State with "Equality among all ethnic groups" as described under Article 8 of the Constitution below:

The State pursues the policy of promoting Unity and Equality among all ethnic groups. All ethnic groups have the rights to protect, preserve and promote the fine customs and cultures of their own tribes and the nation. All Acts of creating Division and Discrimination among ethnic groups are forbidden. The State implements every measure to gradually develop and upgrade the economic and social level of all ethnic groups.

The 1992 ethnic policy, which stems from the Resolution of the Central Politic Bureau of the Party, focuses on improving living conditions of the ethnic groups, while promoting their ethnic identity and cultural heritage. This general policy of the Party can be summarized as follows:

- Build national sentiment (national identity).
- Realize equality among ethnic groups.
- Increase the solidarity level among ethnic groups as members of the Lao family.
- Resolve problems of inflexible and vengeful thinking, as well as economic and cultural inequality.
- Improve the living conditions of the ethnic groups step by step.
- Expand, to the greatest extent possible, the good and beautiful heritage and ethnic identity of each group as well as their capacity to participate in the affairs of the nation.

Various organizations responsible to implement the above policies are as follows:

- The "Ethnic Committee" under the National Assembly is in charge of drafting and evaluating all legislation concerning ethnic groups, lobbying for its implementation and the implementation of its socio-economic development plans.
- The "Institute for Cultural Research" under the Ministry of Information and Culture is responsible for carrying out all ethnic research activities.
- The "Lao Front for National Construction (LFNC)", as the mass (political) organization, is the lead institution in ethnic affairs.
The Constitution of Lao PDR was passed in 1991 as a consolidation of the rights and responsibilities of the State and the people. Throughout the Constitution the term "citizens of all ethnicity" is used. The Constitution states that all citizens have rights in education, health, land use and ownership, domicile of choice, and economic development regardless of sex, religion, social status, education, or ethnicity; as well as freedom of religion, freedom of speech; freedom to peacefully assemble and to protest. All citizens have the right to work and carry out their chosen livelihoods. Articles 8 and 22, guarantee that there will be no discrimination on the basis of ethnicity or gender, as specifically mentioned as follows:

- Article 8 - The State will carry out a policy of unity and equality among the various ethnic groups. All ethnic groups have the right to preserve and improve their own traditions and culture and those of the nation. Discrimination between ethnic groups is forbidden. The state will carry out every means in order to continue to improve and raise the economic and social conditions of all ethnic groups.
- Article 22 - All Lao citizens, regardless of their sex, social position, education, beliefs or ethnicity, are equal in front of the law.
- One key management of ethnic groups in Lao PDR is the LFNC. The LFNC is the institution that manages affairs related to indigenous people. It was established in 1996. The LFNC is designated as an advisor to the central committee of the Party and the State and at the local level, including the district level. The Party assists the LFNC in carrying out its duties. The LFNC is responsible for the following:
  - To promote the human development of ethnic minority officials;
  - To ensure that educational opportunities are made available to ethnic Minorities;
  - To promote and preserve cultural traditions;
  - To improve and expand healthcare, knowledge of reproductive health traditional medicine and detoxification of opium addicted persons;
  - To enhance the administrative mechanism for ethnic minorities including their promotion in rural development activities by ensuring that other agencies are aware of the requirements for the participation of ethnic minorities.

Other GOL’s policies and legislations relevant to ethnic groups are as follows:

- According to The Land Laws, 1997, the GOL consider Land as the National Community Property that is administered by the State for use and as a mean for all Socio-Economic Development. All the lands must be used effectively and be based on the macro-level and micro-level development planning. There is no personal ownership of land, but the citizens are allowed to use it and have a customary right to its resources.
- The Land Law also stipulates that, in the case that the public infrastructure development projects cause damages to trees, crops or buildings of the private owners, the land owners have the rights to be compensated for the damages.
- Ethnic groups maintain land tenure rights equal to all Lao citizens with certain specifications (see Section 3.1.5.1) and even preferential access and customary user rights to certain forest products (Forestry Law, Article 30; MAF Regulation 535; MAF Orders 54 and 377).
Customary rights on land use among the ethnic groups are passed down from generation to generation. Traditionally, no land titles were involved and no boundaries were officially demarcated. In remote rural areas, these customary rights are still practiced to the acceptance of the local authorities widely. Many ethnic groups have traditionally recognized certain areas of forest as sacred forests. In addition, among the ethnic groups, individuals or households were considered to be the owners of specific trees, such as those used for resin-tapping or that may have ancestral spiritual significance. These are important aspects of village cultural and economic life that need to be investigated and strictly respected.

- The GOL has developed a "Land and Forest Allocation" program with the aim to allocate land to individuals and to demarcate village forest and land boundaries for proper land use planning and forest management in a sustainable way. The main objectives of the land and forest allocation program are:
  - To promote crop production to replace shifting cultivation through allocation and titling of production land
  - To protect forest through forest classification
  - To utilize the allocated forests on sustainable basis.

- The Prime Minister Decree No. 117 elaborated in 3 articles aiming:
  - To allocate 2-5 ha of forest and forest land to each household and 100-500 ha to each village
  - To allow villagers to manage and use allocated forest as long as wood volume increases
  - To allow villagers to inherit or transfer allocated forest to others
  - To recognize ownership of individuals and groups to degraded land which they plant trees, regenerate, grow crops or raise livestock by themselves.

- The MAF’s Regulation on Village Forest Management was issued in June 2001. Mostly to consolidate existing provisions concerning village forests, e.g. classification of village forest, harvest of logs for housing and social welfare construction activities. However, collection of NTFPs for sale is also recognized, with the condition that management plans are formed and approved. NTFPs have been recognized as one of the few income sources available to rural villagers for a long time without legal recognition, which, for the first time, this regulation provides.

- The exploitation of forest resources must be in a sustainable way and be under the close supervision of the local authorities as per adopted Forestry Law and in accordance to the land use planning.

There are also other related policies and laws/regulations, such as the GOL’s Resettlement and Compensation policies, the Asian Development Bank’s (ADB) and World Bank’s (WB) Safeguard Policies on the same issues. These aim at ensuring that the losses of APs are compensated, that they share project benefits and that their social and economic potential
are developed in order to improve or at least restore their incomes and living standards to pre-project levels.

Despite the efforts made by the above institutions to improve the situation of ethnic people, many ethnic groups still lag behind the Lao ethnic group in terms of the poverty rate, literacy and health. Many ethnic groups still cannot speak and read the Lao language and thus are unable to effectively make use of schools and health clinics which have only Lao speaking staff. Also, many ethnic people live in remote areas of the country and have difficulty reaching a larger settlement where access to employment opportunities, healthcare and education is available.

3.5 CULTURAL AND ARCHAEOLOGY

Cultural and Natural Heritage in the Lao PDR is controlled by the following laws and regulations:

- The national Heritage Laws of Lao PDR on the preservation of culture, historical and natural heritage, referred to as Physical Cultural Resources (PCRs). Complete set of regulations concerning the management of culture, historical and natural heritage was agreed by the National Assembly Number 08/NA on dated 09 November 2005.
- The Decree of the President of the Lao PDR on the preservation of culture, historical and natural heritage. Complete set of regulations concerning the management of cultural, historical and natural heritage.
- Constitution. Article 19: The management of national heritage is a State study.
- Penal Code. Article 103: Sanction to law offenders in particular in the cases of damage and destruction of cultural sites, export and trade of antiquities.
- Law on the protection of environment. Article 16: Developers must abide by laws and regulations concerning the material culture sites that might be affected by their development projects.
- The Ministry of Information and Culture, on behalf of the council of Ministers implements the National policy on culture and cultural heritage. It is represented at provincial and district level by the Office of Information and Culture of province and district, respectively. Laws and regulations on cultural heritage are enforced under the guidance and control of Ministry of Information and Culture. Lawsuits are filed by Ministry of Information and Culture and transmitted to courts for trials and sanctions against offenders.

In other contractual arrangements, PCRs are to be handled in accordance with the GOL’s regulations and the WB’s Operational Policy Note (OPN) 11.03 and Operational Policy (OP) 4.11.

3.6 TOURISM

Key issues of the 2005 Law on Tourism related to Sanakham tourism are as follows:

Article 1: Purposes - The Law on tourism sets the principles, procedures and measures on the establish
cultural, historical and eco-tourisms in extending, sustainable ways, transforming to modern tourism industry and contributing the national protection and development, to promotion of mutual understanding, peace, friendship and to cooperate in international development.

Article 2: Tourism - Tourism is traveling to other locations or countries for the purpose of sightseeing, relaxation, entertainment, cultural exchange, sport, health promotion, research study, exhibition, meeting, and other activities without the intention of finding employment, or it’s the movement of professional carriers in any form of profit making.

Article 4: State Policy towards Tourism - The State centrally and uniformly administers throughout the country on the conservation, protection and development of cultural and historical, eco-tourism in sustainable and participatory manner.

The State considers tourism as a component of the national economy to promote the production, services, increasing of the standing export, creation of works’ places, income’s generation and improvement of livelihood of Lao ethnical people.

The State and society promote advertising campaigns, festivals, fairs on culture, fine national traditions and the heroic inheritances of Lao ethnic people to attract domestic and foreign tourists.

The State respects and protects legitimate interests including securing the safety of the tourists.

The State pays attention to create the conditions and protect rights and interests of individuals, organizations within the country and abroad that invest in the development and promotion of tourism.

Article 5: The Obligation of Individuals and Organizations - To promote tourism, individuals and domestic organizations shall have obligations to contribute in conservation, protection, development and promotion of culture, fine traditions, arts, literature, handicraft that have unique character, tourism resources, the wealthy and beauty of national natural resources.

Individuals and foreign organization entering the Lao PDR shall have the same obligations to contribute to the protection of the tourism sites, culture and fine Lao traditions.

Article 6: International Cooperation - The State promotes international cooperation in tourism to exchange lessons, information, building and training of authorities; attract assistance, promote investment, advertise Lao tourism, promote tourism development and integrate with international standards of tourist services.

3.7 LAO PARTY CONGRESS SOCIAL POLICY

The eighth Party Congress of Lao People’s Revolutionary Party in of 2006 issued seven main policies:

1) Determine targets related to national development aiming at central economic development; continue to deal with the poverty of people focusing on addressing poverty of families; strongly strive to achieve the target of eliminating basic poverty by 2010; and
2) Enhance the effectiveness of state macro management of the market economy to ensure the expansion of economy and society in line with socialist principles.

3) Bolster human resource development in every area to fulfill the modern needs of socioeconomic development; attend to implementation of suitable social policy, harmonizing with the conditions and reality of the economic and financial situation in Laos.

4) Enhance state power in line with the principle of building a state that is of the people, by the people and for the benefit of the people; and subject to the rule of law.

5) Increase unity among the entire population on the basis of workers-farmers alliance, revolutionary intellectuals and students under the leadership of the Party.

6) Implement the national defense and security policy among the entire population to defend the independence, sovereignty and territorial integrity and guarantee stability and peace for socioeconomic development and the livelihood of the people.

7) Continue implementing creative foreign policy for the purpose of actively integrating Laos with the international community on the basis of mutual respect for each other’s independence, sovereignty and territorial integrity and non-interference in each other’s internal affairs.

3.8 OTHER REGULATORY FRAMEWORK

Lao PDR is one of the 10 countries in ASEAN that has advanced environmental laws and regulations. Key organizations and agencies involved in the EIA process include the Government of Lao PDR (GOL); the Prime Minister’s Office (PMO); the Ministry of Natural Resources and Environment (MONRE); the Ministry of Agriculture and Forestry (MAF) especially the Department of Forestry; the Ministry of Energy and Mines (MEM) especially the Department of Mines; the Ministry of Public Work and Transport (MPWT); the Ministry of information, Culture and Tourism; the Ministry of Finance; the National Land Management Authority especially the Department of Land Development and Planning; the Ministry of Health, the Provincial Administration, District administration and Village administration of the project location.

Since the establishment of Lao PDR in 1975 and the adoption of a new constitution in August 1991, a number of laws and regulations were onboarded. The main ones related to ESIA are as follows:
3.8.1 THE LAO ENVIRONMENTAL PROTECTION LAW (1999)

The Lao Environmental Protection Law (EPL) disseminated in 1999, established a framework for environmental management of environmental resources with the objective of preserving and facilitating the sustainable use of natural resources. MONRE is responsible for the implementation of the EPL. Other ministries issue guidelines for implementing provisions but ultimately MONRE issues the environmental compliance certificate.

The basic precept of the EPL is that all persons or organizations residing in Lao have an obligation to protect the environment. People or parties who cause damage to the environment are responsible for the impact under the EPL. Relevant Sections of the EPL include:

Article 5 of the EPL stipulates that natural resources, raw materials and energy shall be used in an economical manner to minimize pollution and waste and to allow for sustainable development.

Article 8 states that all development projects and activities that have potential to affect the environment shall require an EIA.

Article 22 It is the obligation of all organizations to control pollution in accordance with the Environmental Quality Standards set forth in regulations by the various agencies involved Relevant Governmental Decrees, Regulations and Standards include:

- The Implementing Decree of (2002) provides the legal tool for implementation of the law.
- The Environmental Management Standard (2001) stipulates the minimum requirements to develop a project.

MONRE has also developed a set of regulations for conducting the EIA of proposed development and industrial projects (2000, 2001). These regulations and standards established general impact assessments requirements, including timing of the EIA in the project development cycle. They stipulate detailed project screening, both IEE and EIA requirements, including content and format of reporting, and approval of the report.

3.8.2 THE LAO AMENDED FORESTRY LAW (NO. 06/NA-DEC.2007)

The Amended Forestry Law, No 06/NA (Dec. 2007): determines basic principles, regulations and measures on sustainable management, preservation, development, utilization and inspection of forest resources and forestland. At the same time it promotes regeneration of forest and tree planting, and increase of forest resources in the Lao PDR with aiming to maintain the balance of nature, making forest and forestland a stable source of living and use of people, ensuring sustainable preservation of water sources, prevention of soil erosion and maintenance of soil quality, conserving plant and tree species, wildlife species as well as environment and contributing to the national socio-economic development.

- Natural forest and forestland is the property of the national community and the State manages them in a centralized and uniform manner. Trees planted in the areas designated for tree planting by labour and/or fund of individuals or organizations with recognition of
the Forest and Forestland Management Organizations become the property of such individuals or organizations.

- Forests in Lao PDR are classified into three categories such as Protection Forest, Conservation Forest (or National Biodiversity Conservation Areas) and Production Forest. Each category of forest has a different zone and area which includes rich or dense forest, degraded forest, bare forestland and village use forest according to each zoning plan.

- Utilization of forest and forest products is classified into 4 categories such as: utilization for village public benefits, utilization for household, customary utilization, utilization for business. All categories of utilization must avoid causing negative impacts on forest, natural environment and society. While the utilization of forestlands is classified into three types such as utilization for public benefits, for household utilization and for business. All categories of forestland utilization must not cause negative impacts on forest, soil quality, society or natural environment.

- Conversion of public forestland to another land use type is only possible when it brings maximum benefits to the nation and to the well-being of people and it is included in the national socio-economic development plan, and can be undertaken only in the designated areas. Entities that are approved of forestland conversion are responsible for paying fees for technical service, royalties and conversion fees. In the case of temporary conversion such as mining exploitation and other production activities, the land must be restored and trees must be replanted. In case that the State needs to convert forestland, which is allocated to an individual or organization to use for a specific purpose, for other purposes with maximum national benefits, the State shall compensate according to laws and regulations.

- There are 2 types of forestland conversion i.e. temporary type and permanent type. The temporary type of forestland conversion is the conversion of forestland into another land type to undertake a certain work. After the completion of such work, the converted land must be re-converted to its original forestland type such as conversion to forestland from industrial land for mining exploitation. The permanent type of forestland conversion is the conversion into another land type for long term purpose i.e. conversion for roads and hydroelectric power construction. The timber and forest resources that are cut or harvested in these forestland areas belong to the State.

- Forest and forest land can be converted into other uses (e.g., for national infrastructures projects such as transmission line rights-of-way, etc.) when necessary and if in the public interest, and subject to be approved by the government representative by Prime Minister under the proposal from the responsible authorities.

- The change or conversion of three categories of forest such as from Production Forest into Protection Forest or Conservation Forest, or from Conservation Forest into Protection Forest must be approved by the government based on proposal of Ministry of Agriculture and Forestry.
• The change of Protection Forest to Conservation Forest or Production Forest, or Conservation Forest into Production must be endorsed by the National Assembly’s Standing Committee based on the proposal of the government.

• Conversion of degraded forestland to other land uses can be undertaken only if it is necessary for the benefits of the locality without causing negative impacts on society and natural environment and only in so designated areas. Organizations with right to make decision on conversion of degraded forestland, which cannot naturally regenerate, are the followings:

  o Provincial or Vientiane Capital Administration Office; for degraded forestland area of no more than 100 hectares per one activity through the proposal by the Provincial or Vientiane Capital Land Management Authority based on the agreement of Provincial or Vientiane Capital Agriculture and Forestry Department;

  o The government; for degraded forestland area of more than 100 hectares to 1,000 hectares per one activity through the proposal by the National Land Management Authority based on the agreement of the Ministry of Agriculture and Forestry and Provincial or Vientiane Capital Administration Office. In the case of more than 1,000 ha, must be endorsed by the National Assembly Standing Committee.

• Conversion of barren forestland to other land uses can be undertaken only if it is necessary for the benefits of the locality without causing negative impacts on society and natural environment and only in so designated areas. Organizations authorize to make decision to convert barren forestland are the followings:

  o District or Municipal Administration Office; for barren forestland area of no more than 30 hectares per one activity based on the proposal by the District or Municipal Land Management Authority with the agreement of the District or Municipal Agriculture and Forestry Office;

  o Provincial or Vientiane Capital Administration Office; for barren forestland area of more than 30 hectares to 200 hectares per one activity based on the proposal by the Provincial or Vientiane Capital Land Management Authority with the agreement of the Provincial or Vientiane Capital Agriculture and Forestry Department;

  o The government; for barren forestland area of more than 200 hectares to 10,000 hectares per one activity through the proposal by the NLMA based on the agreement of the MAF and Provincial or Vientiane Capital Administration Office. In the case of more than 10,000 ha, the endorsement by the National Assembly Standing Committee is necessary.

• The government manages forest and forestland in a centralized and uniform way by assigning the MAF to be the lead agency coordinating with other organizations concerned such as the NLMA, Ministry of Industry and Commerce, the MEM, Ministry of Public Health and the Water Resources and Environment Agency. The forest and forestland management organization in Lao PDR is comprised of:

  o The MAF, of which the Department of Forestry performs secretariat roles
o District or Municipal Agriculture and Forestry Office
  o Village Forestry Units.

- Provision for setting up a fund for activities such as protection and conversion of forests, tree planting, and forest regeneration to protect and conserve watersheds, the environment and wildlife.

- Compensation is based on the areas (ha) of forest and/or volume of timber (m³) of a given class or species of tree that will be cut down. Compensation is only paid for timber removed from private forestry plantations. No compensation is paid for timber removed from natural forests on public lands. Nor is any compensation paid for removal of any kind of natural NTFPs, except for villagers’ planted NTFPs such as bamboo, etc..

- After the infrastructure development projects have been approved by the Government, the Department of Forestry in collaboration with Provincial or District forest office staff will assess the volume of natural or plantation forest that will be removed by a project. An assessment report is prepared and submitted to Ministry of Agriculture and Forestry to consider and then will be proposed to the Prime Minister for consideration and providing approvals.

- Natural timber removed from development projects will be sold according to the regulations concerned under the Industry and Commerce Sector. Where timber is removed from a private tree plantation, the project owners or developers are responsible for compensating the owner of the plantation.

- During the timber survey, the Department of Forestry in collaboration with Provincial Forestry Section or District Agriculture and Forestry staff will demarcate the boundary of the areas that to be harvested. Fines will be levied against the contractor for any timber that is cut outside the approved areas. This is aiming to protect illegal logging.

- The project owners or developers are responsible for paying for all costs incurred by the Department of Forestry, including costs of preparing timber cutting assessments during surveys.

3.8.3 THE LAO WILDLIFE AND AQUATICS LAW (NO. 07/NA-DEC.2007)

Wildlife and Aquatics Law, No 07/NA (Dec. 2007) determines principles, regulations and measures on wildlife and aquatic in the natural to promote the husbandry, breeding to regenerate and utilization of wildlife and aquatic in sustainable manner, without any harmful impact to the natural resources, habitats, restricts on decreasing and extinction of the wildlife and aquatics, encouraging people at the whole to understand and recognize the significance, and enhancing their conscientious in loving, care and be kind to the animals. To engage in managing, monitoring, conserving, protecting, developing and utilizing wildlife and aquatics in sustainable manner. To guarantee plenteousness and richness of ecological natural equilibrium system, to contribute in upgrading livelihoods condition of the multi ethnic people, which is the potential in the development of the national socio-economy.

- Wildlife and aquatics living in the nature on the territory of the Lao People’s
Taking an individual and organization brought for captivities, and reproduce by investment, it is belonged to their own property in accordance with law regulation.

- Wildlife and aquatics the Lao People’s Democratic republic comprises of Mammals, Birds, Reptiles, Amphibian, and Insects. Wildlife and Aquatics are divided in three categories such as: 1) Prohibition category, 2) Management category, and 3) Common or generally category.

- Classification and listing of wildlife and aquatics, is to divide the animals in different categories and different species with the reference to the situation and trend of animals’ number such as: Endangered species, rare species, and threat species in their habitats condition, regeneration and reproduction. The government considers and approves on changing list of prohibition and management category list of animals by recommendation of the Ministry of Agriculture and Forestry. For the common or general category list of animals the Ministry of Agriculture and Forestry is authorized to change.

- The protection is focused on the prohibited, managed and common or general wildlife and aquatics category list that to be maintained in plentiful richness and sustainable. It is also the protection of the wildlife’s habitats and preservation of reservoir, conservation zone not to be devastated, in simultaneously to take any measures to protect, prevent of the attachment devastation from human and from the nature.

- Prohibit individual, local organization and international organization in the Lao PDR taking any actions as follow:
  - Taking of a life wildlife and aquatics prohibition category, carcasses, parts and organs of such animals from its habitats or to have in the possession.
  - Any torment on wildlife and aquatics
  - Illegal catching, hunting, trading and aving the wildlife and aquatics in the possession without any permission.
  - Catching aquatics and hunting wildlife in the conservation zone, in breeding season, pregnancy and small calves.
  - To produce, import, sell and use the tools of fishing by weapons depletion hunting such as: All hunting Guns or rifles, explosive, chemicals, poisons, electricity, ray or sound wave, etc.
  - Devastation of wildlife conservation zone, reservoir conservation, habitats and feeding zone of wildlife and aquatics directly or indirectly such as: Clearing, resettlements, slush and burn, felling, using of pesticide or herbicide over doses, and other activities which are violated the law and regulation.
  - Occupation resettlement shifting, changing or damaging of boundary signs of reservoir conservation, wildlife conservation zone and the habitats.
  - Husbandry wildlife and aquatics for business purpose in city and community areas which pollutes to the contamination and the environment.
- Import, export, re-export, transshipment, or moving pass of wildlife and aquatics infected diseases, insecurity to the animal’s health, to import the animals in the period of restriction prohibition confirmedly to the permission, and law and regulation.
- Bribery to staffs and officers to fake any documents and fake stamp.
- Threatening, pulling back and to obstruct the civil servants in carrying out of their tasks dealing with the wildlife and aquatics.
- Any other actions that are violation of law and regulation on wildlife and aquatics.

3.8.4 THE LAO WATER LAW (1996)

The Water Law (1996) is intended to assure the sustainable use of water. The Water Resources Committee under the Prime Minister’s Office administers the Water Law and is responsible for the review and evaluation of EIAs related to use of Water resources.

Relevant sections of the Water Law (1996) include:

- Under Article 14, Water use is divided into small, medium and large-scale uses.
- Article 4 defines rights, obligations and procedures for gaining approval for use of water resources.
- Article 18 establishes the requirements for preparation of an EIA for any large-scale use of water.
- Article 17 states that medium and large-scale uses of water resources are restricted to permitted reservoir developments.

3.8.5 THE LAO AMENDED LAND LAW (NO. 04/NA-OCT.2003)

The GoL grants rights to individuals, families or organizations pursuant to the Land Law (2003). These grants are either temporary “right to use” grants for up to five years or as thirty year “leases”. The NLMA, in conjunction with the PMO, has the responsibility for land titling, registration and leasing of land. The MAF manages the use of the land. Decree 37/PM specifies that the MAF provincial office shall determine which parts of the resettlement area shall be used for what purpose. Subsequently, the land will be surveyed by the NLMA which can grant a thirty years lease on land for housing and agricultural development.

3.8.6 ENVIRONMENTAL & SOCIAL IMPACT ASSESSMENT

Decree on Environmental Impact Assessment 2010 – The latest decree of Lao PDR that addresses 2 types of investment project requiring environmental and social assessment:

- **Category 1**: Investment projects which are small or create less impacts on environment and society, but require initial environmental examination;
- **Category 2**: Large - sized investment projects which are complicated or create substantial
The E&S assessment principles can be summarized as below.

(1) In relation to investment projects classified in Category 1 and Category 2, including projects provided in Article 6 (2) of this Decree, the project developer must, first, obtain an environmental compliance certificate, before any contract of mining and extracting of mineral substances or constructing can be concluded, or before any business license can be issued; and before they can start to clear the area, construct or implement the project.

(2) An IEE or an EIA must be conducted only by a Consultant Firm or by a Consultant who is registered at the Water Resources and Environment Administration. The IEE or the EIA must study several options, so that the best option can be selected. The scope should cover impacts on antiquities, culture, and customs/traditions; plans to solve the negative impacts on the environment and society; participation of the people who are (or will be) affected by the investment project; participation of other stakeholders in discussion at all levels, and in drawing up the budget for these activities.

(3) Ensuring the participation of the public and discussion with local administrations at all levels, with those who are (or will be) affected by an investment project and other persons involved in preparation and examination of a report on IEE or a report on the EIA.

(4) An individual, legal entity or organization who wishes to render environmental impact assessment services in Lao PDR must comply with the following procedures:

- A domestic Consultant Firm must be licensed and registered at the Water Resources and Environment Administration.
- A domestic Consultant must be registered as an Environmental Consultant at the Water Resources and Environment Administration.
- A foreign Consultant Firm or foreign Consultant who has already got a license to render environmental services in a foreign country must register its business with the Water Resources and Environment Administration.

(5) A project developer must be liable for:

- The accuracy of the data and information contained in the IEE or the EIA report.
- Every expense incurred in the process of preparing and examining the IEE, including measures to prevent and minimize impacts on the environment and society or an EIA report or an EMMP or a SMMP that monitors the implementation of measures to prevent and minimize the impacts on the environment and society.
- In relation to a new investment project which is likely to affect other investment projects, there must be a Cumulative Impact Assessment (CIA).
- For an investment project which is likely to create impacts beyond the
(6) Any organizations involved in examination (or deliberation) of an IEE or an EIA report is obliged to monitor the outcomes of the implementation of measures on prevention and minimization of impacts on the environment and society or of an EMMP, whereas local administrations have duties to monitor the implementation of the SMMP.

There are key roles of Lao governmental agencies, namely, MONRE and local administrations, in the ESIA process as per the following.

- **MONRE**
  - To issue environmental compliance certificates to approve the IEE report proposed by the sector bodies in charge of investment.
  - To participate in field inspections and participate in consultation meetings at district level. The Water Resources and Environment Administration may nominate Provincial or Prefectural Water Resources and Environment Divisions to participate on its behalf.
  - To coordinate with the concerned sector bodies and issue guidelines on practical implementation.
  - To liaise with local administrations

- **Local Administrations**
  - To issue environmental compliance certificates to certify an IEE report based on the verification of the Water Resources and Environment Administration.
  - To cooperate with and facilitate project developers in surveying and collecting information to prepare reports and in organizing consultations with the people who are (likely to be) affected by the investment project and other stakeholders.
  - To cooperate in the information dissemination process, and encourage people who are (likely to be) affected by an investment project to access the objectives of the project, expected benefits and the environmental and social impacts which might occur from the project.

3.8.7 **HYDROPOWER ENVIRONMENTAL & SOCIAL SUSTAINABILITY**

An important GOL environmental policy improvement can be found in the new national policy on Environment and Social Sustainability of the Hydropower Sector in Lao PDR, adopted in June 2005. This policy employed the development principle based on Nam Theun 2 Hydropower Project which is an integrated approach to the river basin that assesses cumulative impacts and proposes mitigation inclusive of institutional and financing mechanisms. It applies to all large hydropower dams (with an installed capacity of more than 50 MW or inundated area more than 10,000 hectares) constructed or proposed after 1990. Accordingly, the Sanakham HPP should address the following:

- Completion of a comprehensive EIA including cultural and archeological resources.
- Identification of APs whose assets, resource use and livelihoods, and/or social or cultural structures are involuntarily altered by the project. In addition cases of involuntary resettlement and the SMMP are to be based on the decree no. 192/PM on the Compensation and Resettlement of the Development Project (July 2005).
- Watershed Management and Conservation should be effectively implemented through offsetting any loss of natural terrestrial habitat based on NT2 Watershed Decree 39 of 2005. This includes compensation measures to people residing within protected areas.
- Continuous consultation with affected communities is required with comprehensive environmental education and awareness activities.
- Disclosure of information (Lao and English) related to project consultation reports, impact assessment, mitigation plans and monitoring report are required with provision of information centers in project area and in Vientiane.
- Compliance with all relevant obligations including concession agreement under Lao national laws, policies, strategies, action plans and international conventions through regular monitoring and reporting.
- The cost to the developer of implementing all environmental and social safeguards under the user pay principle.
- Organization of third-party monitoring and assessment with respect to the environmental and social guidelines set.
- Periodic review of the lessons learned from the implementation of this policy.

3.9 SAFEGUARD POLICY OF INTERNATIONAL LENDING AGENCY

The international lending agencies, in particular, the World Bank requires that the dam be designed and its construction supervised by experienced and competent professionals.

It also requires that the borrower adopt and implement certain dam safety measures for the design, bid tendering, construction, operation, and maintenance of the dam and associated works.

A number of operational directives have been on boarded as basis for the borrowers to follow. Tabulated below summarizes the Bank’s operational policies (OP).

<table>
<thead>
<tr>
<th><strong>Operational Policy</strong></th>
<th><strong>Actions and/or Responses</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment (OP 4.01)</td>
<td>Phase 1 Report analyzing project alternatives through environmental and social screening. This EIA which covers environmental impacts, mitigation and management in the design, construction and operation phases of the project. Parallel SIA which covers social impacts, mitigation and management in the design, construction and operation</td>
</tr>
<tr>
<td><strong>Operational Policy</strong></td>
<td><strong>Actions and/or Responses</strong></td>
</tr>
<tr>
<td>------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>Natural Habitats (OP 4.04)</td>
<td>Flora and fauna species arrays and habitats are examined in Sections 4.4.1 and 4.4.4 respectively. Conservation status of all species is noted and forest protection areas are identified in Section 4.4.3 and analyzed in Section 5.1.3. Fish species and habitats are examined in Section 4.4.5. Riverine habitats are mapped and described. Habitat preferences are assigned to all species. The absence of endemic species is noted. Impacts on natural habitats and mitigation management are included.</td>
</tr>
<tr>
<td>Pest Management (OP 4.09)</td>
<td>Reservoir biomass clearance will be by mechanical means. No chemicals will be used. Similarly, use of pesticides will be minimized in resettlement site preparation. Livelihood programs in the resettlement plan and Watershed Management Plan will teach biological and environmental pest control measures.</td>
</tr>
<tr>
<td>Involuntary Resettlement (OP 4.12)</td>
<td>A Resettlement Action Plan complying with World Bank guidelines and Lao legislative requirements has been prepared and submitted to rounds of APs and other stakeholder participation and APs approval.</td>
</tr>
<tr>
<td>Indigenous Peoples (OP 4.10)</td>
<td>All APs are from the same ethnic minority group. Therefore an Ethnic Minorities People’s Plan (which complies with World Bank and Lao PDR guidelines) has been incorporated into the resettlement plan to produce a Resettlement and Ethnic minorities People’s Plan,</td>
</tr>
<tr>
<td>Forests (OP 4.36)</td>
<td>The Watershed Management Plan will protect the catchment forests as a priority. The project will impact on a minimal area</td>
</tr>
</tbody>
</table>
Operational Policy | Actions and/or Responses
--- | ---
of natural forest.
The project includes management measures to minimize exploitation of NTFPs by the construction work force.
The REMPP includes the retention of NTFP collection rights for resettlers.

Safety of Dams (OP 4.37) | Dam safety, including an assessment of seismic potential, has been fully covered in the technical and economic component.

3.10 International Principle and Best Practice

3.10.1 Equator Principle
The “equator principle” is one of the various international E&S standards primarily based on its International Financial Corporation’s Performance that contains 9 principles which are:

- Principle 1: Review and Categorization
- Principle 2: Social and Environmental Assessment
- Principle 3: Applicable Social and Environmental Standards
- Principle 4: Action Plan and Management System
- Principle 5: Consultation and Disclosure
- Principle 6: Grievance Mechanism
- Principle 7: Independent Review
- Principle 8: Covenants
- Principle 9: Independent Monitoring and Reporting
- Principle 10: Reporting

The above 2006 Principles adopt stronger social and environmental standards. They place a greater emphasis on the social risks and impacts associated with a project. These changes are reflected in both the language (e.g. the shift to “social and environmental assessment”) and substance (e.g. the clear separation of social and environmental impacts in the revised project categories) of the 2006 Principles. The 2006 Principles also include a commitment to periodic reporting. This change seeks to address a common criticism of the original principles: a lack of transparency. However, the 2006 Principles also expressly recognize that confidentiality must be taken into account in reporting. At a minimum, the Equator financial institutions commit to report annually on the number of transactions screened and the categorization accorded to them, and on their experience in implementing the 2006 Principles. It is expected that reporting will exceed this benchmark. To the extent that the Equator financial institutions are able to balance periodic reporting on the kinds of items described in Bank Track’s working document,
Transparency and the Equator Principles, with their confidentiality obligations, the 2006 Principles may avoid some of the criticism leveled at its original principles.

### 3.10.2 WORLD COMMISSION ON DAMS – CRITERIA AND GUIDELINES

The World Commission on Dams, having considered the multiple and diverse impacts and interests in dams, conclude in their report to have identified five critical decision points within dam planning to have the strongest influence on the performance of projects. These points are strategic in nature, and not directly applicable to the current status of the HLG. However, in regard to projects in the pipeline such as HLG, the WCD suggests that projects should be reviewed for social aspects such as:

- Stakeholder analysis based on risks and rights and resulting in the formation of a stakeholder forum
- Supporting vulnerable and disadvantaged stakeholders to participate in an informed manner
- Understand the distribution of costs and benefits across stakeholders
- Agree measures to promote development of, and ensure benefits to project affected and displaced people
- Include recourse and compliance mechanisms

### 3.11 INTERNATIONAL CONVENTIONS AND TREATIES

Lao PDR is a signatory to several international conventions and treaties. Those relevant to the Project are listed below:

- Convention Concerning the Projection of World Cultural Heritage and Natural Heritage (1979).
- UN Convention on Biological Diversity (CBD-1996) under which Lao PDR agrees to:
  - Develop a national biodiversity conservation and sustainable use strategy;
  - Develop legislation for protecting species and populations that are threatened;
  - Integrate conservation and sustainable use of biological resources into national decision making;
  - Conduct EIA of proposed development projects with a view to minimizing negative impacts.
  - Accession to the Kyoto Protocol (2003);
3.12 REGIONAL AGREEMENT

The regional agreement is founded on "The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (1995)". This agreement was signed on 5 April 2005 by four Mekong riparian countries, namely, the Kingdom of Cambodia, the Lao People's Democratic Republic, the Kingdom of Thailand and the Socialist Republic of Vietnam.

The agreement has set a new mandate for organization to cooperate in all fields of sustainable development, utilization, management and conservation of the water and related resources of the Mekong River Basin. Signatories to this treaty agree that transfer of the Mekong River and tributary water outside the Mekong River Basin can occur only by consensus among the four country members. The member countries therefore agree to coordinate in water project planning and monitoring of the basin waters.

Also important is to start a process of reasonable and equitable use of the Mekong River system in each country to develop procedures for water utilization. The Mekong River Commission (MRC) is supporting a joint basin-wide planning process with the four countries called The Basin Development Plan, which is the basis of its Integrated Water Resources Development Program. The MRC has included the following topics: fishery management, the promotion of safe navigation, irrigated agriculture, watershed management, environmental monitoring, flood management and exploring hydropower alternatives.

The agreement outlines three sets of procedures:

1) Procedures for Notification, prior to Consultation and Agreement, requires member countries to alert each other on planned river development that could significantly affect their neighbors, and to provide information regarding the developments, including technical specifications and environmental assessments.

2) Procedures for Water Use Monitoring which can provide a legal basis for a water use monitoring system to be established in the lower Mekong Basin.


These agreed procedures provide a definition of water use, covering uses of the Mekong that may have a significant impact on water quality and hydrological regimes on the mainstream of the Mekong.
4. CENSUS AND SOCIOECONOMIC SURVEY RESULTS

4.1 SOCIO-ECONOMIC OVERVIEW

The census of the potentially affected population was undertaken over 30 days from the 1st to the 30th of December 2010. The census teams consisted of international experts, NCC social surveyors, representatives of villages, representatives of district authorities, and some villages were observed by local NGO people.

The Sanakham HPP is within the boundary of 2 provinces, Vientiane and Xayaboury. Xayaboury is located on the right bank while Vientiane is on the left bank. Some villages in Kenthao and Pak Lay of Xayaboury will be affected by the FSL of 220 masl and some villages in Sanakham will also be affected.

Vientiane Province is located on the left bank of the Mekong River in Central Lao PDR and has a total area of 15,927 square kilometers. The total population is about 433,567 people. Phonehong is its capital city and Sanakham is a border district situated opposite to Chiang Khan District in Thailand.

Xayaboury (right bank of the Mekong) is a northwestern province sharing a border with Thailand and is known as a very rugged landscape with forested mountains. Its also known for the production of rice, cotton, peanuts, sesame, maize and oranges. Teak forests cover large parts of the province. Xayaboury has a population of about 346,512.

Limited social infrastructures are generally observed in the project area. These include limited paved roads, limited health and education service facilities. Clean water and environmental services also limited and need to be improved. Key statistical indicators about Xayaboury and Vientiane are listed below.

- 42% and 78% of villages in Xayaboury and Vientiane, respectively, are served with electricity.
- Approximately 10% of villages in the two provinces have a market.
- About 90% of villages in the two provinces have primary schools.

Socio-economic life in the provinces is based on Lao lowlander people who believe in Buddhism. The way-of-life of people relies on lowland and upland farming with glutinous rice and other cash crops such as maize, job’s tears, local fruits and vegetables. The survey indicates that approximately 80% of the total population is engaged in farming. The average land holding is 1.79 ha with 20 % of households having 1 hectare or more and 40 % having less than 1 hectare. About 60% of the area devoted to rice production is for the production of sticky rice, a subsistence crop used primarily for home consumption. Some fruit trees grown are mango, coconut, banana, jackfruit and tamarind. Livestock raised include cattle, buffaloes, goats, turkeys, pigs and chickens.
4.2 IDENTIFICATION OF DISPLACED POPULATION

Due to the back water effect (operating level 220masl) extending 81 km upstream from the proposed main dam, the project will occupy an area for upstream tail water of 6,332 ha. Of this, 4,452 ha is a land area (including 308 ha of paddy land) that people are currently enjoying for a living. There are 13 villages that will be directly impacted. Of these, three villages (Donsok, Houay Lah, and Khae) totalling 267 families (1,127 people) will be severely affected due to the inundation of most houses and farmland in the village. Meanwhile, the community infrastructure and farmland of ten villages (Donphoung, Maipakthoun, Houaytao, Khokkhaodor, Donmen, Nakham, Donsang, Boungma, Kengsao, and Nasack) with a population of 1,736 families (3,378 inhabitants) will be partially affected. Out of these, 354 families (1,808 people) will need to be relocated to higher ground.

Figure 15: Location of Upstream Affected Villages
Resettlement Action Plan

Table 8: Demography of Upstream Directly Affected Villages

<table>
<thead>
<tr>
<th>No.</th>
<th>Village Name</th>
<th>English</th>
<th>Lao</th>
<th>Family</th>
<th>HH</th>
<th>People</th>
<th>Female</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Donsok</td>
<td>36</td>
<td>28</td>
<td>155</td>
<td></td>
<td>73</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>02</td>
<td>Donphoung</td>
<td>135</td>
<td>127</td>
<td>576</td>
<td></td>
<td>255</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>03</td>
<td>Maipakthoun</td>
<td>240</td>
<td>238</td>
<td>1,984</td>
<td></td>
<td>593</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>04</td>
<td>Houaytao</td>
<td>217</td>
<td>216</td>
<td>805</td>
<td></td>
<td>405</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>05</td>
<td>Khokkhaodor</td>
<td>274</td>
<td>247</td>
<td>1,611</td>
<td></td>
<td>492</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

- Vientiane Province, Sanakham District (Left Bank)

- Xayaboury Province, Kenthao District (Right Bank)

- Xayaboury Province, Pak Lay District (Right Bank)

<table>
<thead>
<tr>
<th>No.</th>
<th>Village Name</th>
<th>English</th>
<th>Lao</th>
<th>Family</th>
<th>HH</th>
<th>People</th>
<th>Female</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
<tr>
<td>06</td>
<td>Houay Lah</td>
<td>81</td>
<td>77</td>
<td>323</td>
<td></td>
<td>150</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>07</td>
<td>Donmen</td>
<td>217</td>
<td>217</td>
<td>1,023</td>
<td></td>
<td>511</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>08</td>
<td>Khae</td>
<td>150</td>
<td>140</td>
<td>649</td>
<td></td>
<td>308</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>09</td>
<td>Nakham</td>
<td>72</td>
<td>72</td>
<td>339</td>
<td></td>
<td>172</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>10</td>
<td>Donsang</td>
<td>82</td>
<td>75</td>
<td>365</td>
<td></td>
<td>169</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Bouungma</td>
<td>268</td>
<td>258</td>
<td>1,235</td>
<td></td>
<td>616</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>12</td>
<td>Kengsao</td>
<td>151</td>
<td>161</td>
<td>814</td>
<td></td>
<td>357</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td>13</td>
<td>Nasack</td>
<td>168</td>
<td>170</td>
<td>845</td>
<td></td>
<td>404</td>
<td></td>
<td>Lao</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2,003</td>
<td>2,065</td>
<td>10,724</td>
<td></td>
<td>4,505</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Right-bank family size = 4.70, Left-bank family size = 5.68, Overall average family size = 5.35

Note: Severely Impacted Partially Submerged

Template of project profile of individual directly affected village is provided in Appendix 1.

4.3 DEMOGRAPHY AND CULTURE

The APs are of Tai-Lao ethnicity (formerly Lao Loum) with an average family size of 5.35 (4.70 on the right bank, and 6.30 on the left bank). These Lao communities live in the lowlands
on both banks along the Mekong River valley which is an ideal environment for rice paddy and maize farming.

As they follow Buddhism, the key religious festivals include Boun Pimai Lao or Lao New Year and Boun Bangfai or the Rocket Festival. Lao New Year is celebrated nationwide during mid April each year. On 13 April Buddha images are taken out of the temples to be cleansed with scented water by devotees and placed on temporary altars. Devotees gather the scented water falling off the images to take home and use it to pour on friends and relatives as an act of cleansing and purification before the New Year. On the evening of 15 April the images are returned to their proper shrines. Held at the eve of the planting season, the Rocket Festival is held to coax rain and fertility back to the earth. The festival commences with a morning ceremony praying for rain followed by gathering in fields on the outskirts of the villages and towns to launch home-made rockets.

4.4 HOUSING

Dwellings among the directly affected comprise of Lao-style houses that reflect the focus of rice/maize farming. The house is generally built on wooden posts that raise the house up by about two meters in case of flooding from the rice paddies. Some 2-storey houses are also found and considered as good quality one of which minimum cost of house construction is approximately 60 million kip. Most of good quality houses were constructed of brick concrete, especially at the first floor. One house may take years to build, depending on the availability of wood, expenses and labour. The average house in the project area can costs anything up to 50 million kip to construct. This height also cools the house during the hotter months. The area under the house is used to keep livestock as well as a rice mill, fuel wood and other household used items. The living area on the first floor generally consists of an open space- one end that is used for cooking, with an open fire and the other for the family to gather and conduct their everyday business activities.

The survey revealed three key categories of house as follows:

- Roof: Tile/Metal Sheet
- Post: Wood
- Floor: Concrete/Wood
- Wall: Concrete/Wood
- Partition: Wood
- Window: Wood/Glass
- Door: Wood

Figure 16: Type 1 – Good Quality House
Roof: Metal Sheet
• Post: Wood
• Floor: Wood
• Wall: Wood/Bamboo
• Partition: Wooden/Bamboo
• Window: Wood
• Door: Wood

Figure 17: Type 2 - Medium Quality House

Roof: Thatch/Metal
• Post: Wood
• Floor: Wood
• Wall: Wood/Bamboo
• Window: Wood/Bamboo
• Door: Wood

Figure 18: Type 3 – Low Quality House

Table 9: Type of House in Upstream Directly Affected Villages

<table>
<thead>
<tr>
<th>Category of House</th>
<th>Total Number Surveyed</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>o Good Quality House</td>
<td>178</td>
<td>10.6%</td>
</tr>
<tr>
<td>o Medium Quality House</td>
<td>893</td>
<td>53.2%</td>
</tr>
<tr>
<td>o Low Quality House</td>
<td>607</td>
<td>36.2%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,678</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

About 60% of 2-storey houses are medium to good quality ones; around 40% are low-quality houses generally built on wooden posts that raise the house up by about two meters in case of flooding from the rice paddies. This height also cools the house during the summer months. The area under the house is used to keep livestock as well as a rice mill, fuel wood and other household used items. A typical village layout involves the temple located centrally, with the houses situated within walking distance of each other. Livestock generally run freely in and around the area and gardens are located not far from each house.
4.5 LAND HOLDING & OWNERSHIP

The interviews of APs showed that the average land holding per family is about 4.8 ha of which 0.1 ha is for a home plot; 1.2 ha for rice paddy; 1.6 ha for swidden upland field crop; 1.3 ha for gardens (include river-bank plantation); and 0.5 ha for other purposes. Some encroachments for practicing swidden upland farming were observed in the mountainous areas near to the villages.

Land ownership is identified by a white certificate that was issued for verification of using land and payment of yearly tax. The white certificate identifies the plot number, land area and use category details. Land ownership in the project area is considered complicated since no real title deed is found for each family in the upstream affected villages.

Table 10: Average Land Holding of Directly Affected Persons

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Paddy</th>
<th>Swidden</th>
<th>Gardens</th>
<th>Home Plot</th>
<th>Other Lands</th>
<th>Total HH Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vientiane Province (Left Bank)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanakham District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Donsok</td>
<td>1.3</td>
<td>2.0</td>
<td>1.3</td>
<td>0.2</td>
<td>0.5</td>
<td>28</td>
</tr>
<tr>
<td>2. Maipakthoun</td>
<td>1.7</td>
<td>0.0</td>
<td>0.5</td>
<td>0.2</td>
<td>0.0</td>
<td>42</td>
</tr>
<tr>
<td>3. Donphoung</td>
<td>0.8</td>
<td>1.6</td>
<td>0.7</td>
<td>0.1</td>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td><strong>Xayaboury Province (Right Bank)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pak Lay District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Boungma</td>
<td>1.0</td>
<td>0.0</td>
<td>0.9</td>
<td>0.0</td>
<td>0.0</td>
<td>25</td>
</tr>
<tr>
<td>Kenthao District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Donmen</td>
<td>1.0</td>
<td>4.1</td>
<td>2.7</td>
<td>0.1</td>
<td>0.7</td>
<td>231</td>
</tr>
<tr>
<td>6. Khae</td>
<td>1.4</td>
<td>3.0</td>
<td>2.3</td>
<td>0.1</td>
<td>0.9</td>
<td>124</td>
</tr>
<tr>
<td>7. Nakham</td>
<td>1.4</td>
<td>0.7</td>
<td>2.1</td>
<td>0.0</td>
<td>0.3</td>
<td>14</td>
</tr>
<tr>
<td>8. Donsang</td>
<td>1.0</td>
<td>0.0</td>
<td>0.6</td>
<td>0.0</td>
<td>0.0</td>
<td>13</td>
</tr>
<tr>
<td>9. Houay Lah</td>
<td>1.3</td>
<td>3.8</td>
<td>1.4</td>
<td>0.2</td>
<td>1.7</td>
<td>77</td>
</tr>
<tr>
<td><strong>Average (ha/HH)</strong></td>
<td>1.2</td>
<td>1.6</td>
<td>1.4</td>
<td>0.1</td>
<td>0.5</td>
<td>578</td>
</tr>
</tbody>
</table>
4.6 OCCUPATION & WORKFORCE

The interview of 2,281 people aged 10 or above indicated that 81.7% are farmers, 14.4% are students, and 2.5% are local government officials. Trading occupation accounts for only about 1%. The unemployment situation is low account at 0.1%.

Table 11: Occupation of Directly Affected Villagers

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Farmer</th>
<th>Trader</th>
<th>Gov’t official</th>
<th>Employment</th>
<th>Unemployment</th>
<th>Student</th>
<th>Others</th>
<th>Total interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vientiane Province (Left Bank)</td>
<td>2. Vientiane Province (Left Bank)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1. Sanakham District</td>
<td>2.1. Sanakham District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donsok/Khokkhaodor</td>
<td>Donmen</td>
<td>Khae</td>
<td>Nakham</td>
<td>Donsang</td>
<td>Houay Lah</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>126</td>
<td>684</td>
<td>459</td>
<td>38</td>
<td>45</td>
<td>221</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>14</td>
<td>5</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>17</td>
<td>-</td>
<td>9</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>144</td>
<td>140</td>
<td>89</td>
<td>3</td>
<td>14</td>
<td>33</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,860</td>
<td>19</td>
<td>56</td>
<td>11</td>
<td>1</td>
<td>328</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2,281</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81.7%</td>
<td>0.8%</td>
<td>2.5%</td>
<td>0.5%</td>
<td>0.01%</td>
<td>14.4%</td>
<td>0.1%</td>
<td>100.0%</td>
<td></td>
</tr>
<tr>
<td>Total (Exclude students)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,860</td>
<td>19</td>
<td>56</td>
<td>11</td>
<td>1</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>1,953</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>95.2%</td>
<td>1.0%</td>
<td>2.8%</td>
<td>0.6%</td>
<td>0.05%</td>
<td>-</td>
<td>0.3%</td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

The upstream communities have a low population density. Most (approximately 60 percent) of this population are at productive working age of between 18 to 60 years. The overall sex ratio
of females per 1,000 males is 704 indicating an imbalance of the female gender, which are smaller number.

4.7 LIVELIHOODS

4.7.1 LIVELIHOOD RESOURCE

The way of life of people on both banks is dominantly based on rice and maize farming. It was found that land resources for each family in the upstream communities despite the abovementioned average land holding of 4.8 ha per family.

As a source of livelihood, the farm sector employs approximately 95 percent of the active and productive work force whereas the non-farm sector employs less than five percent of the workforce.

Fishing can be done in the Mekong River, nearby natural streams, fish ponds and paddy fields but most fishermen catch fish only for household consumption.

Close to the village, there are village forest areas, mostly comprising of disturbed secondary forest. Some parts of these forest areas are using for harvesting of NTFPs and for livestock rearing (such as cattle, buffaloes, and goats). The NTFPs harvesting value is found to be very small (approximately 1-2% of total family income).

Discussions with the village leaders in the upstream area confirmed sources of irrigation are limited and mostly rain dependent. The other source of irrigation are the streams, creeks and small rivers that act as perennial source of water not only for irrigational purposes but also for domestic usage. Land productivity is considered low because of limited soil improvement and lack of proper irrigational systems.

The discussions with district administrators and district land office reported some encroachments of forest land in the project area. However no formal survey or assessment has been done to assess the extent and degree of encroachment on different categories of land.

4.7.2 AGRICULTURE

Most farmers are able to cultivate only one crop in the rainy season after the rains. Cash crops grown are of local varieties mainly glutinous rice, maize, and job’s tear. Most of the paddy cultivated (about 70 ha per village) is able to meet the food requirements of the households for the whole of the year. The average yield of rice ranges from 2.7 to 3.5 tons per ha.
The maize plantation area on average is about 200 ha per village while the Job’s tears is about 100 ha per village both of which are grown primarily as cash crops. Other minor crops grown include beans, cassava and sesame, while perennial trees and fruits include teak, rubber, oranges, and oil palm. It was found that only about 10 ha per village of grassland were reported.

Cropping calendar and productivity are as follows:

<table>
<thead>
<tr>
<th>Season</th>
<th>Crops</th>
<th>Yield/ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainy (May to October)</td>
<td>Glutinous Rice</td>
<td>2.7-3.5 tons</td>
</tr>
<tr>
<td>Rainy (May to October)</td>
<td>Maize, Cattle feed</td>
<td>2.0-2.5 tons</td>
</tr>
<tr>
<td>Other seasons</td>
<td>Job’s Tears, Vegetables</td>
<td>2.0-4.0 tons</td>
</tr>
</tbody>
</table>

4.7.3 LIVESTOCK

Livestock rearing is also an important in source in the family economy. The cattle and buffalo population are like household savings (money) and a e an important asset which can be turned into ready cash in times of need, such as when children start a new semester of education, for health care, celebration or transportation expenses. A typical household in the project villages has livestock including cattle, pigs, buffaloes, poultry, and goats which are used both for generating subsidiary income and to a lesser extent for household consumption. Surprisingly, the surveys indicated some elephant rearing; this was found only at Donmen Village where there we e 16 eleph nts.
Table 12: Livestock Survey in Directly Affected Villages

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Poultry</th>
<th>Turkey</th>
<th>Goats</th>
<th>Pigs</th>
<th>Cattle</th>
<th>Buffalo</th>
<th>Elephant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vientiane Province (Left Bank)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Sanakham District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donson</td>
<td>668</td>
<td>-</td>
<td>-</td>
<td>45</td>
<td>53</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Donphoung</td>
<td>10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>2. Xayaboury Province (Right Bank)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Kenthao District</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donmen</td>
<td>5,098</td>
<td>9</td>
<td>109</td>
<td>128</td>
<td>553</td>
<td>168</td>
<td>16</td>
</tr>
<tr>
<td>Khae</td>
<td>4,090</td>
<td>5</td>
<td>5</td>
<td>109</td>
<td>182</td>
<td>139</td>
<td>-</td>
</tr>
<tr>
<td>Houay Lah</td>
<td>1,227</td>
<td>-</td>
<td>-</td>
<td>47</td>
<td>110</td>
<td>108</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,860</td>
<td>19</td>
<td>56</td>
<td>11</td>
<td>1</td>
<td>328</td>
<td>16</td>
</tr>
<tr>
<td><strong>Percentage</strong></td>
<td>81.7%</td>
<td>0.8%</td>
<td>2.5%</td>
<td>0.5%</td>
<td>0.01%</td>
<td>14.4%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

The survey also found that the community sells livestock through middlemen who come to the villages. Interviews of villagers revealed that these middlemen are frequent in the area. Buffaloes have the highest price ranging from 3.0 to 3.5 million kip/head followed by cattle (1.5 to 2.0 million kip/head). The selling price of livestock slightly varies depending upon the size and quality of animal. The following is the list of village gate price of livestock in the area.

Table 13: Average Village-Gate Price of Livestock (Kip/head)

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of Livestock</th>
<th>Vientiane Province</th>
<th>Xayaboury Province</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Sanakham District</td>
<td>Pak Lay District</td>
</tr>
<tr>
<td>01</td>
<td>Buffaloes</td>
<td>3,000,000</td>
<td>3,000,000</td>
</tr>
<tr>
<td>02</td>
<td>Cattle</td>
<td>1,550,000</td>
<td>1,500,000</td>
</tr>
<tr>
<td>03</td>
<td>Pigs</td>
<td>1,000,000</td>
<td>1,200,000</td>
</tr>
<tr>
<td>04</td>
<td>Goat</td>
<td>350,000</td>
<td>350,000</td>
</tr>
<tr>
<td>05</td>
<td>Poultry</td>
<td>20,000</td>
<td>20,000</td>
</tr>
</tbody>
</table>

4.7.4 FISHING

The aquatic biology sampling and social surveys revealed that the upstream area of the Mekong River in this zone has a limited population of fish. Fishing is practiced on a small scale either in the small fish ponds in the paddy fields or in the nearby streams. Fish caught were reportedly used mostly for household consumption.
A number of fish culture (Tilapia) on 4x4 size cages was observed in downstream from the main dam on the Thai side, especially in the area from Nam Heung River mouth to Chiang Khan Civic Center.

4.8 FAMILY INCOME & EXPENDITURE

4.8.1 FAMILY INCOME

The analysis of family income and expenditure was made for villages located on each river bank. Results of analysis indicated that villages on the right bank (Houay Lah, Donmen, Khae, Nakham, Donsang, and Boungma) have an average annual family income (13.8 million kip/family) about 30% higher than villages on the left-bank (10.6 million kip/family). This is largely because of location: households on the Thai side a more able to serve markets due to better roads compared to roads on the left-bank.

The main source of income was from farming 62% and 67% (or 7.1 -8.8 million kip) for the right bank and left bank respectively. The analysis also indicated the important role of non-farming of which 36% and 32% (or 4.2 million kip) of income contributed from trading/employment and others on the RB and LB respectively. The source of income from NTFPs was marginal, contributing only about 1% of total average family income. (Table 14)

4.8.2 FAMILY EXPENSES

Family expenditure, among villages both on the right and left bank, spend between 31-37% on production costs (equivalent to about 3.1 million kip per family per year) reaching as high as 62-68% (or 7.1 to 7.8 million kip/family/year) of household expenses. High outlays were observed for transportation and celebration costs which alone are estimated at approximately 25% of total expenses.

---

Table 14: Average Gross Income of Directly Affected Family

<table>
<thead>
<tr>
<th>No.</th>
<th>Sources of Income</th>
<th>Left-bank Family</th>
<th>Right-bank Family</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kip</td>
<td>%</td>
<td>Kip</td>
</tr>
<tr>
<td>1.</td>
<td>Farm Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Lowland rice</td>
<td>1,330,000</td>
<td>1,326,000</td>
</tr>
<tr>
<td>1.2</td>
<td>Upland crops</td>
<td>217,000</td>
<td>674,200</td>
</tr>
<tr>
<td>1.3</td>
<td>Maize</td>
<td>2,641,900</td>
<td>1,430,000</td>
</tr>
<tr>
<td>1.4</td>
<td>Beans</td>
<td>932,200</td>
<td>158,000</td>
</tr>
<tr>
<td>1.5</td>
<td>Fruits</td>
<td>487,600</td>
<td>238,000</td>
</tr>
<tr>
<td>1.6</td>
<td>Vegetables</td>
<td>537,000</td>
<td>548,000</td>
</tr>
</tbody>
</table>
### Table 15: Family Expenditures of Directly Affected Family

<table>
<thead>
<tr>
<th>No.</th>
<th>Distribution of Expenses</th>
<th>Left-bank Family (kip)</th>
<th>%</th>
<th>Right-bank Family (kip)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food &amp; Beverage</td>
<td>703,000</td>
<td>8.45</td>
<td>1,020,000</td>
<td>10.10</td>
</tr>
<tr>
<td>2</td>
<td>Education</td>
<td>560,000</td>
<td>6.73</td>
<td>707,000</td>
<td>7.00</td>
</tr>
<tr>
<td>3</td>
<td>Transportation</td>
<td>1,139,000</td>
<td>13.69</td>
<td>1,605,000</td>
<td>15.89</td>
</tr>
<tr>
<td>4</td>
<td>Housing</td>
<td>1,028,000</td>
<td>12.36</td>
<td>1,665,000</td>
<td>16.49</td>
</tr>
<tr>
<td>5</td>
<td>Health</td>
<td>887,000</td>
<td>10.66</td>
<td>960,000</td>
<td>9.51</td>
</tr>
<tr>
<td>6</td>
<td>Ceremonies</td>
<td>906,000</td>
<td>10.89</td>
<td>993,000</td>
<td>9.83</td>
</tr>
<tr>
<td>7</td>
<td>Production cost</td>
<td>3,095,000</td>
<td>37.22</td>
<td>3,147,000</td>
<td>31.18</td>
</tr>
<tr>
<td></td>
<td><strong>Grand Total</strong></td>
<td><strong>8,318,000</strong></td>
<td><strong>100.00</strong></td>
<td><strong>10,097,000</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

### Average per capita income

- **0.79 US$/person/day**
- **0.83 US$/person/day**
4.9 POVERTY ISSUE

The left-bank villages have an average daily income of 0.79 US $/person/day while right-bank villages have a daily income of 0.83 US $/person/day. On both banks villagers have an average per capita income slightly higher than the Lao poverty line (0.75 US$/person/day) but still below the UN poverty line (1.25 US$/person/day). The challenge is how to help people move above the UN poverty line.

Table 16: Poverty Status of Directly Affected Persons

<table>
<thead>
<tr>
<th>JSS per person/day</th>
<th>Left-bank Directly Affected Villages</th>
<th>Right-bank Directly Affected Villages</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.00</td>
<td>(0.79 $)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.75</td>
<td>(0.83 $)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.25</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.10 EDUCATION

Similar to other rural areas in the Lao PDR, the educational situation in the project area is constrained by a lack of proper infrastructure and facilities. Each village has a primary school of different size based on the number of youth. For example Donsok and Nakham (7mx15m) are small followed by Khokkhaodohaodo (9mx15m) and Houay Lah (6mx18m). The village of Boungma of Paklay District has a secondary school with two bigger buildings sized 7m x 35m and 7m x 40m.

Figure 20: Primary School at Donsok
Figure 21: Primary School at Donmen
The recent field survey confirmed that literacy ranged from 75% to 85% in all the villages which is uniformly spread across gender groups. It was observed that the literacy rate in the area in the younger age group was higher than the older age group of people above 35 years, which may indicate an improvement in educational standards, awareness and/or attendance.

Table 17: Schools in the Directly Affected Villages

<table>
<thead>
<tr>
<th>Province/District Name</th>
<th>Upstream Directly Affected Village Name</th>
<th>Existing School Primary</th>
<th>Secondary School</th>
<th>Building Quality</th>
<th>Size (m x m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vientiane Province</td>
<td>Donsok</td>
<td>1</td>
<td>None</td>
<td>Bamboo wall, cement floor and corrugated zinc roofing</td>
<td>(8x15)</td>
</tr>
<tr>
<td></td>
<td>Houaytao</td>
<td>1</td>
<td>None</td>
<td>Solid building with corrugated roofing</td>
<td>(9x40)</td>
</tr>
<tr>
<td></td>
<td>Donphoung</td>
<td>1</td>
<td>None</td>
<td>Corrugated roofing with concrete wall</td>
<td>(6x40)</td>
</tr>
<tr>
<td>Sanakham District</td>
<td>Maipakthoun</td>
<td>1</td>
<td>None</td>
<td>Permanent school with corrugated roofing and break wall</td>
<td>(9x46)</td>
</tr>
<tr>
<td></td>
<td>Khokkhaadorn</td>
<td>1</td>
<td>None</td>
<td>Wooden wall, corrugated roofing</td>
<td>(9x15)</td>
</tr>
<tr>
<td>Xayaboury Province</td>
<td>Houay Lah</td>
<td>1</td>
<td>None</td>
<td>Corrugated roofing, break wall</td>
<td>(6x18)</td>
</tr>
<tr>
<td></td>
<td>Khae</td>
<td>1</td>
<td>None</td>
<td>Corrugated roofing, cement wall</td>
<td>(35x7)</td>
</tr>
<tr>
<td></td>
<td>Donmen</td>
<td>1</td>
<td>None</td>
<td>Shingle roofing, concrete wall, solid building</td>
<td>(38 x21)</td>
</tr>
<tr>
<td>Kenthao District</td>
<td>Nakham</td>
<td>1</td>
<td>None</td>
<td>Break wall</td>
<td>(7x15)</td>
</tr>
<tr>
<td></td>
<td>Donsang</td>
<td>1</td>
<td>None</td>
<td>Concrete wall with corrugated roofing</td>
<td>(7x20)</td>
</tr>
<tr>
<td>Pak Lay District</td>
<td>Boungma</td>
<td>1</td>
<td>1 secondary school with 2 buildings</td>
<td>Solid, permanent school buildings with Wooden walls &amp; corrugated roofing</td>
<td>(7x40) + (7x35) + (7x25)</td>
</tr>
</tbody>
</table>
4.11 HEALTH

a) *Accessibility to Health Care Facilities*

In addition to ascertaining health care facilities and infrastructure utilized by people in the survey area the team also sought to gain an understanding of the accessibility of the facilities inclusive of the obstacles. The most prevalent problem cited for limiting accessibility was the distance between the villages and district town and available transport whether car, motorbike or boat in some villages.

The distances from households in the surveyed villages to the district hospital ranged from 31 km to 75 km in Meun District, from 1 km to 70 km in Sanakham, and about 7 to 35 km in Kenthao and 0.5 km to 27 km in Paklay District.

![Figure 22: Donsok Village Group Health Center](image)

b) *Behavior of People in Medical Treatment Services*

Health-seeking behavior is an important factor to understand when analyzing the health of a given population. Understanding the patterns in seeking medical care can assist to understand the healthcare gaps or the cultural barriers for improving health condition. According to data obtained from the surveyed villages on both river banks, when people are ill people like to go to the district hospital (50%); followed by the pharmacy (20%), the village drug box (12%), the Health Centre (HC) (10%), provincial hospital (5%), central hospital (2%) and clinics in Thailand (1%). It is important to note that people go for medical treatment at provincial and central hospitals when they have severe illness.

c) *The Crude Birth Rate (CBR) and Crude Death Rate (CDR)*
The field survey revealed that over a period of one year (2009 – 2010) there were differences in CDRs. Within the Sanakham HPP area for example a 4.4 per 1000 CDR was recorded in downstream villages while a 3.2 per 1000 CDR was observed in upstream communities. However, both CDRs were lower than the whole-country status (5.4 per 1000) see Table 18.

Table 18: The Crude Birth Rate and Crude Death Rate in Each Zone

<table>
<thead>
<tr>
<th>Locations</th>
<th>Number of Live births</th>
<th>Number of Deaths</th>
<th>CBR (per 1000)</th>
<th>CDR (per 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole country</td>
<td>3,470</td>
<td>651</td>
<td>28.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Vientiane Province</td>
<td>566</td>
<td>43</td>
<td>28.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Xayaboury Province</td>
<td>337</td>
<td>32</td>
<td>24.0</td>
<td>4.8</td>
</tr>
<tr>
<td>Downstream Villages</td>
<td></td>
<td></td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>Upstream Villages</td>
<td></td>
<td></td>
<td></td>
<td>3.2</td>
</tr>
</tbody>
</table>

**d) Clean Water, Hygiene and Sanitation**

The main source of water for drinking and domestic use were natural streams/rivers, gravity-fed system (from nearby mountains) and bore-wells which in some cases are supported by various donors and organizations such as UNICEF, Lao Lux. It is interesting to note that out of a total of 39 surveyed villages, 35 villages have access to safe drinking water (i.e. gravity-fed system and bore-wells). Most families in district town use bottled drinking water. However, some villages faced with inadequate water during the dry season use natural streams/rivers for taking a bath and washing clothes. Villagers usually boil water for drinking if bottled water is not readily accessible. About 80% of households drink boiled water.

Hygiene and sanitation is an important health indicator. Inadequate disposal of human faecal waste is related to a range of diseases such as diarrhea, cholera and parasitic diseases. The hygiene data was obtained from the village head and village health volunteer of 39 villages. Approximately 66% of households have latrines in downstream villages, 79% in upstream villages have latrines while 34% have no latrines in downstream villages (compared to 21% in upstream villages). The percentage of households that have latrines in the project area is higher than the national situation – 50.2% according to the National Health Survey (2005).
e) The Common Causes of Morbidity in the Village

Based on data obtained from the village health volunteer and head of villages, the common causes of morbidity in the villages within Sanakham HPP area were Acute watery diarrhea (50%), Road accidents (33%), Malaria and seasonal flues (28%), followed by respiratory infection (18%), bloody diarrhea (12%), Tuberculosis Pulmonary (10%), Hepatitis (7%) and Drowning (5%).

f) Indicators of Health Risk Factors in the Villages

Information obtained from 39 surveyed villages revealed that smoking and alcohol consumption posed the highest health risks in the project area. These were followed by the medium factors of rice/food deficiency and poor sanitation (50%-60%). The remaining health risk factors included limited health care facilities, UXOs, poor drinking water and poor living conditions. These altogether were low health risk factors of approximately 10% to 20%.

g) Current Preventative Health Care Programs

There are preventative health care programs in place in the project area which are ongoing programs. The mobile vaccination team supported by the GAVI Alliance and UNICEF and run by the HC and DHO provide the following vaccinations children and pregnant women: BCG, DPT, Polio, Measles and Hepatitis B and Tetanus. The vaccinations are provided approximately four times per year in the survey villages. In addition, Mother and Child Health at the HC and District Hospital also provide antenatal-postnatal care. The anti-malaria program is a national program which implements preventative measures on a national basis. Between 2005–2010 villagers were provided with long-lasting mosquito bed nets at a nominal price supported by Global fund.

The Family Planning project is also an ongoing project in this area. It is based on the national program and is supported by the United Nations Population Fund (UNFPA). The program provides family planning services and contraceptives. Supported by range of local and foreign NGOs, such as the DHO, PHO, Lao Red Cross, SIDA and UNFPA, other preventative programs include TB control, HIV/AIDS control, food security, water supply and sanitation. In all of the above programs, the major constraint is limited financial and human resources. Each program requires ongoing access to scarce health care funds in order to make a long-term impact on the health status of local villages.

4.12 GENDER & VULNERABLE GROUPS

a) Identification of Vulnerability

The sampling of three directly affected villages (Donsok, Houay Lah and Khae) and an indirectly affected village (Donmen) were conducted. Disabled, mentally ill and landless are normally identified as vulnerable groups. In the above villages, there are 11 disabled people (5 of them are female), 5 mentally ill people (all of them are female) and 3 landless families (11 people).
Table 19: Vulnerability of Directly Affected Villages

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>Village</th>
<th>Disability</th>
<th>Mental illness</th>
<th>Landless</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>Female</td>
<td>Total</td>
</tr>
<tr>
<td>Vientiane</td>
<td>Sanakham</td>
<td>Donsok</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Houay Lah</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Xayaboury</td>
<td>Kenthao</td>
<td>Donmen</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Khae</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>11</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

b) Gender

Gender and gender conditioning is another area that potentially harbours vulnerable people, notably single mothers. According to the IEE, the number of women is close to parity between the sexes. Data collected in the 4 mentioned villages shows that there are 891 females of which 7 are divorces, 59 widows and 6 female headed families. Ban Donmen has the highest number of women and widows (see Table 20).

![Figure 25: Woman Bagging Corn](image)

Table 20: Gender Status in the Directly Affected Villages

<table>
<thead>
<tr>
<th>Province/District/Village Name</th>
<th>No. of Women</th>
<th>No. of Divorce</th>
<th>No. of Widow</th>
<th>Women Headed Family</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vientiane Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Sanakham District</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donsok Village</td>
<td>73</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td><strong>Xayaboury Province</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <strong>Kenthao District</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Houay Lah village Donmen</td>
<td>66</td>
<td>3</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Village Khae</td>
<td>444</td>
<td>2</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td>Village <strong>TOTAL</strong></td>
<td>891</td>
<td>7</td>
<td>59</td>
<td>6</td>
</tr>
</tbody>
</table>
4.13 CULTURAL RESOURCES & ARCHEOLOGY

Since all villagers are Lao, Buddhist temples are a key cultural center. There are also some important cemetery/spiritual sites where people pay respects. These are now discussed.

a) Cemetery/Funeral Place

A total of 3 important cemeteries are found below the 220 masl. They are located in the boundary of severely affected villages. (*Boxes 1 to 4*)

| GPS Coordinates: 101.32, 312E; 17.48,777N |
| Village: Ban Houaylah |
| Physical Description: The site is located on the south west of the Houaylah Village near the Mekong River with the size of approximately 0.25 hectares. The villagers respect this site. |
| Potential Impact: The site will be submerged from water retention level of 220 masl. |
| Photograph of the site: |

Box 1: HouayLah’s Cemetery

| GPS Coordinates:101.24, 281E; 17.56,460N |
| Village: Donmen |
| Physical Description: It's located on the south west the village with the size of 7 ha. It will be submerged by 220 masl back water. |
| Photo of site: |
Box 2: Donmen’s Cemetery

- **GPS Coordinates:** 101,25, 311E; 18,00,424N
- **Village:** Khae
- **Physical Description:** Located north west the village with the size of 2 ha. A ceremony is required when relocating. It requires 4 goats, 4 ducks, alcohol, cigarettes, Khan Ha, Khan Ped and cash in the amount of approximately 5,000,000 Kip.

Box 3: Khae’s Funeral/Cemetery

**b) Ho Phi Ban/Ho Phi Mouang**

Only at Donmen Village that is identified as important spiritual site.

- **GPS Coordinates:** 101,24, 281E; 17,56,460N
- **Village:** Donmen
- **Physical Description:** It's located on the south west the village with the size of 7 ha. It will be submerged by 220 masl back water.
- **Photo of site:**

---

Box 4: Important Spiritual Site at Donmen Village
c) Archaeological Artifacts

At Ban Houay Lah, Ban Donmen and and Khae, respectively, the surveys found artifacts including clay pottery and bronze axes of the Neolithic and Bronze Age. They were all located on the right bank of the Mekong. All artifacts are collected as a family heirloom.

Table 21: Types of Cultural and Archaeology Found

<table>
<thead>
<tr>
<th>Village Names</th>
<th>Cemetery</th>
<th>Spirit</th>
<th>Religious</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Houay Lah</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. Donmen</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3. Khae</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4. Veunkham</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>5. Donsok</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>6. Donphoung</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>7. Khokkhaodor</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>8. Houaytao</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

Key archaeological information found in the upstream directly affected villages can be briefed in Boxes 5 to Box 7 as follows:

Object Type: Clay pottery

Further Details: The object was found by Mr Xing Noi. He found it during his clearance of a wet rice field approximately 3 km to the north of the village. This day pottery is 25cm high.

GPS Coordinates: 101.31.33.6N; 17.49.41.8E

Toponymic Information: In the village name “Houay Lah”, Houay means stream, but the meaning of Lah is unknown. According to the village representative, the stream flows into the Mekong, but does not contain fish (at least not for eating).

Village Details: Houay Lah village is located in the eastern Kenthao district, Xanyaoury province. The Village was erected in 1986, and many of the villagers came from Donsang village. It is a strategic village due to its location near the border with Thailand and it is approximately 2 km upstream from the dam site. The village is comprised 81 households and 77 families with a population of 323 persons including 150 women. The livelihood of most of the residents is agriculture.
- **Ethnic Composition**: All Houaylah villagers are Lao Loum.
- **Religious Information**: All the residents are Buddhists.

**Box 5: Clay Pottery at Houay Lah Village**

- **Object Type**: Red Bronze Axe

- **Further Details**: The object was found in 2010 by Mr. Vong at Mekong River side from using his fishing net in 2010. The location is about 3km south of the village.
- **GPS Coordinates**: 101.24.23.0N; 17.56.46.3E
- **Village toponymic Information**: In the village name “Donmen”, Don means island, and men means bad smell. According to the village representative in former times people would come to the island to fish and cook giant catfish. Because of this activity the island smelled bad, so it was named Donmen.
- **Village Details**: Donmen Village is located in the eastern Kenthao district, Xayaboury province. It is a strategic village being located near the border to Thailand. It is approximately 32km to upstream from the future dam site. The Village is comprised of 217 households and 217 families with a population 1,023 persons including 511 women. The livelihood of most of the residents is agriculture.
- **Ethnic Composition**: Donmen Village is 100% Lao Loum ethnic group.
- **Religious Information**: All the residents are Buddhists.

**Box 6: Red Bronze Axe at Donmen Village**
Phoxay Monastery
Building has a high archaeological significance because it is an old wooden architecture.

**Figure 26: Phoxay Monastery Building**

- **Object Type:** A collection of rock art and artifacts from the prehistoric period (Stone, Neolithic and Bronze Age)

- **GPS Coordinates:** 101.25.08.4N; 18.01.04.6E

- **Village toponymic Information:** “Khæ” means stream.

- **Village History:** Khæ village is located in the eastern part of the Kênthao district, Xayaboury province, approximately 40km upstream from the dam site. The village comprises of 140 households with 50 families. The population is 649 persons with 308 women. The livelihood of most of the residents is related to agriculture.

- **Ethnic Composition:** Khæ village is 100% Lao Loum ethnic group.

- **Religious Information:** All the residents are Buddhists.

### 4.14 VILLAGE ADMINISTRATION

As discussed with the village leaders, the village administration generally includes the village leader and deputy (elected by the villagers and responsible for the implementation of plans) and a party leader and deputy (elected by the provincial government and generally responsible for developing village plans). Often the village and party leader is the same individual. All of
the Lao villages in the project area follow this structure. The village leaders are responsible for resolving any disputes, issues related to land use or sale and generally any village related matters.

With regards to issues such as the promotion of gender, health and family planning the Lao Women’s Union (LWU) and Lao Youth Union are responsible. These are groups of local females and youth within each villages nominated by the village leader.

With the assistance of the district administrators, the village authority also seeks guidance from the elderly community members who are respected amongst all sections of the community. For matters relating to security, the village authority has nominated a group of males to take charge of all issues security related.

4.15 ATTITUDES TO THE SANAKHAM HPP

Attitudes of APs including gender and vulnerable groups is shown in the Tables below. Severely affected people knew about the project from the Engineering/ESIA study teams where at least one official consultation meeting in each village was conducted (more details in Chapter 8 – Public participation).

Attitudes among people residing below 220 masl, approximately 10%, 60%, and 30% of total people interviewed (624 families), respectively, disagreed, agreed and were unsure about the project. While a small group of approximately 10% felt disinclined to support the Sanakham HPP, nearly 30% felt unsure about their future situation or about the project impacts.

Among gender and vulnerable groups, women were concerned about the loss of housing, land and plantation areas and the consequent loss of agricultural production and income, particularly given that they had fertilized land along the Mekong river.

Other concerns were related to the loss of community properties, particularly schools, temples and health center. Some women were concerned about their children’s education as well as changes in their ethnic customs and beliefs.
Table 22: How affected persons found out about the project

<table>
<thead>
<tr>
<th>Village Name</th>
<th>Village committee</th>
<th>Study teams</th>
<th>Others</th>
<th>Total Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HH %</td>
<td>HH %</td>
<td>HH %</td>
<td>HH %</td>
</tr>
<tr>
<td>1. <em>Vientiane Province (Left Bank)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <em>Sanakham District</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01 Donsok</td>
<td>22 31.4</td>
<td>46 65.7</td>
<td>2 2.9</td>
<td>70 100.0</td>
</tr>
<tr>
<td>02 Maipakthoun</td>
<td>- -</td>
<td>28 66.7</td>
<td>14 33.3</td>
<td>42 100.0</td>
</tr>
<tr>
<td>03 Donphoung</td>
<td>2 8.3</td>
<td>1 4.2</td>
<td>21 87.5</td>
<td>24 100.0</td>
</tr>
<tr>
<td>2. <em>Xayaboury Province (Right Bank)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• <em>Pak Lay District</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>04 Boungma</td>
<td>- -</td>
<td>24 96.0</td>
<td>1 4.0</td>
<td>25 100.0</td>
</tr>
<tr>
<td>• <em>Kenthao District</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05 Donmen</td>
<td>182 78.8</td>
<td>48 20.8</td>
<td>1 0.4</td>
<td>231 100.0</td>
</tr>
<tr>
<td>06 Khac 07</td>
<td>106 82.8</td>
<td>22 17.2</td>
<td>- -</td>
<td>128 100.0</td>
</tr>
<tr>
<td>Nakham</td>
<td>- -</td>
<td>- -</td>
<td>14 100.0</td>
<td>14 100.0</td>
</tr>
<tr>
<td>08 Donsang</td>
<td>- -</td>
<td>13 100.0</td>
<td>- -</td>
<td>13 100.0</td>
</tr>
<tr>
<td>09 HouayLah</td>
<td>64 83.1</td>
<td>13 16.9</td>
<td>- -</td>
<td>77 100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>376 60.2</strong></td>
<td><strong>195 31.3</strong></td>
<td><strong>53 8.5</strong></td>
<td><strong>624 100.0</strong></td>
</tr>
</tbody>
</table>
The majority of women and vulnerable people in the project area believed that the Sanakham HPP would make their life better off. It would create good roads, electricity, clean water, permanent housing, schools, markets and a health centre. Ban Houay Lah’s vulnerable people expected the project would create job opportunities and there would be many tourists come to their village so they could earn some income. Many expected that after the project village women would work less because of better infrastructure. Therefore, they supported the project.
5. CATEGORIES OF AFFECTED PEOPLE BY TYPE & DEGREE OF IMPACTS

5.1 IDENTIFICATION OF PROJECT AFFECTED PERSONS

Affected Persons (APs) means any person or persons, household, firm, private or public institution that, on account of changes resulting from the Sanakham HPP, will have its:

- Standard of living adversely affected.
- Right, title or interest to any house, land (including residential, commercial, agricultural, forest, and/or grazing land), water resources or any other moveable or fixed assets acquired, possessed, restricted or otherwise adversely affected, in full or in part, permanently or temporarily.
- Business, occupation, place of work or residence or habitat adversely affected, with or without displacement.

Other categories of APs include are Families (FM), Affected Households (AHs), Severely Affected Families (SAFs) (see terminology section 1.6).

The Mekong Sanakham HPP has adopting an operating level of 220 masl with safety a level of +1 masl. Based on this criteria, there will be a total of 13 villages in three districts of the two provinces (Sanakham District of Vientiane Province, and Kenthao and Paklay districts of Xayaboury province) that will experience a change from their pre-project social condition.

It should be noted that the comprehensive assessment was undertaken in the SIA – a separate report of the ESIA process documents.

The Table below presents details of the number of families, households and people that require relocation and resettlement.

Table 24: Number of Villages and Families anticipated to be Severely Affected by the Sanakham HPP (220 masl)
### Resettlement Action Plan

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>No.</th>
<th>Village Name</th>
<th>Population</th>
<th>Affected FM</th>
<th>Affected Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FMs</td>
<td>HHs</td>
<td>People</td>
</tr>
<tr>
<td><strong>Totally Submerged</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Houaylah</td>
<td></td>
<td></td>
<td>81</td>
<td>77</td>
<td>323</td>
</tr>
<tr>
<td>02</td>
<td>Khae</td>
<td></td>
<td></td>
<td>150</td>
<td>140</td>
<td>649</td>
</tr>
<tr>
<td><strong>Number to be resettled</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>231</strong></td>
<td><strong>217</strong></td>
<td><strong>972</strong></td>
</tr>
<tr>
<td><strong>Partially submerged</strong></td>
<td></td>
<td>03</td>
<td>Donmen</td>
<td></td>
<td></td>
<td>217</td>
</tr>
<tr>
<td><strong>Bank Erosion Risk</strong></td>
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### Resettlement Action Plan

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<td>5</td>
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<td>2065</td>
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Figure 27: Fully and Partially Affected Villages in the Upstream Area
5.2 SEVERELY AFFECTED FAMILIES

Severely Affected Families (SAFs) refers to families who will totally lose their residential land, agricultural land and their industrial and fruit trees. The census indicated 267 severely affected families in Kenthao and Sanakham Districts: 231 at Ban Houay Lah and Ban Khae; 36 at Ban Donsok. These villages have to be entirely moved to new areas. The private houses and community facilities are to be rebuilt. SAFs cannot stay in the current place and cannot continue their current livelihood activities due to the loss of agricultural land from flooding. They have to be resettled at a new place where essential infrastructure and facilities as well as assistance in the form of a livelihood restoration program are available to regain pre-project living standards or higher.

Table 24: Severely Affected Families in Sanakham and Kenthao Districts

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>No</th>
<th>Village Name</th>
<th>Population</th>
<th>Affected Items</th>
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<td></td>
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<td>HUs</td>
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<td>Kenthao</td>
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<td>Houay Lah</td>
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<td>Khae</td>
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<td>140</td>
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<tr>
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<td>Sanakham</td>
<td>7</td>
<td>Donsok</td>
<td>36</td>
<td>28</td>
</tr>
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</table>

No. to be resettled: 231

Totally Flooded

No. to be resettled: 36

Grand Total No. to be resettled by the Reservoir: 267

5.3 LOSS OF PRODUCTIVE ASSETS

At Kenthao District (Xayaboury Province), the Mekong Sanakham HPP upstream pond will cause losses to a productive land area of approximately 1.753 ha. In detail, the pond water at FSL of 220 masl will submerge 377 ha of rain-fed rice fields of which 66 ha are irrigated; 367 ha of upland rice fields; 910 ha of orchards; 15 ha of grazing land and 13 ha of riverbank gardens at Ban Houay Lah and Ban Khae and Ban Donmen (partially flooded).

Tree plantations will also be flooded. Around 43,055 industrial trees will be lost including: Teak - 23,100 trees; Rubber – 12,500 trees; Agar wood – 2,800 trees; Kapok – 2,600 trees; Eucalyptus -550 trees and around 1,500 other trees. Fruit trees that will be lost amount to
19,600 trees, of which 6,350 are *Oranges*; 2,600 *Mangoes*; 2,500 *Coconuts*; 1,900 *Jack fruits*; 1,500 *Tamarinds*; 1,030 *Rambutans*, and 3,050 others.

*Figure 28: Fruit Trees at Ban Nakham*
Table 25: Total Land and Perennial Trees To be Affected in Kenthao District

<table>
<thead>
<tr>
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<td>362</td>
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<td>ha</td>
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<td>2</td>
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<tr>
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<td>1</td>
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</tbody>
</table>

At Paklay (Xayaboury Province), there is no severe impact and therefore no loss of productive lands and tree plantations. However, the project will affect 42 houses that are expected to be at risk from future bank erosion and are required to relocate to higher ground within the original village boundary.
In the Sanakham District, Vientiane Province, the Mekong Sanakham HPP development will cause losses to productive land of approximately up to 202 ha. In detail, the reservoir water at FSL of 220 masl will submerge 79 ha of rain-fed rice fields; 88 ha of upland rice fields; 34 ha of orchards; 1 ha of grazing land and 1 ha of fish ponds at severely affected Ban Donsok and partially affected Ban Donphoung (14 ha of rain fed rice field) and Ban Maipakthoun (19 ha of rain fed rice field). The tree plantation that will be flooded comprises about 230 industrial trees of which 122 are Teak trees; 60 trees are Cotton; and around 50 are other trees. There are no Rubber trees, Agar wood trees and Eucalyptus trees. The Fruit trees that will be lost total 1,900 trees. These include about 1,170 are oranges; 83 mangoes; 140 coconuts; 77 jack fruits; 40 tamarinds; 52 rambutans; and 340 others.

Figure 29: Low-land Rice Field at Ban Boungma
Table 26: Total Land and Tree Plantation To be Affected in Sanakham District

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<thead>
<tr>
<th>No</th>
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<th>Donsonk</th>
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<td>4</td>
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<td>88</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2.7</td>
<td>Livestock Land</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
<tr>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.1.1</td>
<td>Eucalyptus</td>
<td>Tree</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.1.2</td>
<td>Rubber</td>
<td>Tree</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.1.3</td>
<td>Teak</td>
<td>Tree</td>
<td>122</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>122</td>
</tr>
<tr>
<td>3.1.4</td>
<td>Kapok</td>
<td>Tree</td>
<td>61</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>61</td>
</tr>
<tr>
<td>3.1.5</td>
<td>Bamboo</td>
<td>Tree</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.1.6</td>
<td>Other</td>
<td>Tree</td>
<td>47</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>47</td>
</tr>
<tr>
<td>3.1.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,734</td>
</tr>
<tr>
<td>3.2</td>
<td>All Fruit Trees</td>
<td>Tree</td>
<td>1,734</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,734</td>
</tr>
<tr>
<td>3.2.1</td>
<td>Coconut</td>
<td>Tree</td>
<td>140</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>140</td>
</tr>
<tr>
<td>3.2.2</td>
<td>Rambutan</td>
<td>Tree</td>
<td>52</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>52</td>
</tr>
<tr>
<td>3.2.3</td>
<td>Jackfruit</td>
<td>Tree</td>
<td>77</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>77</td>
</tr>
<tr>
<td>3.2.4</td>
<td>Mango</td>
<td>Tree</td>
<td>83</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>83</td>
</tr>
<tr>
<td>3.2.5</td>
<td>Tarmarind</td>
<td>Tree</td>
<td>41</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>41</td>
</tr>
<tr>
<td>3.2.6</td>
<td>Egg Fruit</td>
<td>Tree</td>
<td>21</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>21</td>
</tr>
<tr>
<td>3.2.7</td>
<td>Orange</td>
<td>Tree</td>
<td>1,170</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1,170</td>
</tr>
<tr>
<td>3.2.8</td>
<td>Others</td>
<td>Tree</td>
<td>150</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>150</td>
</tr>
</tbody>
</table>
5.4 LOSS OF RESIDENCE AND BUSINESS PREMISES

In Xayaboury Province, at Kenthao District, the Mekong Sanakham HPP development will cause losses of 384 houses from severely and partially affected villagers. In detail, the reservoir water at FSL of 220 masl will affect 50 houses of Housing Type 1; 151 houses of Type 2; 141 houses of Type 3; and 42 houses of Type 4 from the severely affected villages of Ban Houay Lah and Ban Khae and the partially affected villages of Ban Donmen, Ban Nakham and Ban Donsang. In total, there are 384 directly affected households in Kenthao District. Actually, before the reservoir impoundment, the houses can be dismantled and along with the movable assets all can be shifted to the resettlement/relocation sites. The project developer will be responsible for budget allocation to dismantle houses, move assets and provide new houses as compensation.

Table 27: Detailed Private Affected Houses in Kenthao District

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Unit</th>
<th>Xayabury Province</th>
<th>Kenthao District</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Houay Lah</td>
<td>151</td>
</tr>
<tr>
<td>1</td>
<td>Housing Types</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>(Brick; 2-storey) House</td>
<td>House</td>
<td>6</td>
<td>23</td>
</tr>
<tr>
<td>1.3</td>
<td>(Brick; wooden) Housing Type 3</td>
<td>House</td>
<td>22</td>
<td>69</td>
</tr>
<tr>
<td>1.4</td>
<td>(Brick-1storey) Housing Type 4</td>
<td>House</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td>1.5</td>
<td>(Wooden: 2-storey) Housing type 5</td>
<td>House</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>1.6</td>
<td>(Wooden; 1-storey) House</td>
<td>House</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The community assets that are expected to be affected and are required to be constructed as compensation at the new sites are as follows: 3 village meeting rooms, a police house at Ban Donmen, 2 primary schools, a secondary school and a health center, a water pumping station funded by Ban Khae villagers for rice irrigation, a low voltage 22 kV electricity grid for 120 families at Ban Donmen and 4 temples at each village except Ban Donsang. Ban Donmen affected families require new houses at the relocation site to be composed of piped water system with faucets (see table below).
Table 28: Community Infrastructures To be Affected in Kehthao District

<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Unit</th>
<th>Hoonay Lah</th>
<th>Khae</th>
<th>Donmen</th>
<th>Nakham</th>
<th>Donsang</th>
<th>Tota l</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Meeting room</td>
<td>Unit</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Police House</td>
<td>Unit</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Primary School</td>
<td>Unit</td>
<td>-</td>
<td>-</td>
<td>0</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Secondary School</td>
<td>Unit</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Health center</td>
<td>Unit</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Irrigation System</td>
<td>System</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Electricity Grid (22 kv)</td>
<td>Grid</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Temple (Ceremony Performing)</td>
<td>Unit</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Piped Water System with faucets</td>
<td>Unit</td>
<td>-</td>
<td>-</td>
<td>120</td>
<td>-</td>
<td>-</td>
<td>120</td>
</tr>
</tbody>
</table>

Figure 30: Type of Houses to be Compensated
In Sanakham District, only Ban Donsok is severely affected (actually a Khoum or a sub-village of Ban Phalad) with 30 houses and 36 families that have to be resettled in the Donkouad area. There are 4 partially affected villages, namely, Ban Donphoung, Ban Maipakthoun, Ban Houaytao and Ban Khokkhaod. Some houses are expected to be at risk from bank erosion and have to be moved away far from the Mekong River bank. In total, from severely and partially affected villages, 184 houses will need to be dismantled and rebuilt. Ban Donsok assets comprise a primary school, a teacher dormitory and a temple.

Table 29: Total Private Houses To be Affected at Sanakham District

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>Unit</th>
<th>Donsok</th>
<th>Houaytao</th>
<th>Donphoung</th>
<th>Maipakthoun</th>
<th>Khokkhaod</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Housing Types</td>
<td>House</td>
<td>30</td>
<td>56</td>
<td>40</td>
<td>52</td>
<td>6</td>
<td>184</td>
</tr>
<tr>
<td>1.2</td>
<td>Brick house (2-storey)</td>
<td>House</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>1.3</td>
<td>Brick-wooden house (2-storey)</td>
<td>House</td>
<td>9</td>
<td>30</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>39</td>
</tr>
<tr>
<td>1.4</td>
<td>Brick house (1-storey)</td>
<td>House</td>
<td>9</td>
<td>26</td>
<td>40</td>
<td>52</td>
<td>6</td>
<td>133</td>
</tr>
<tr>
<td>1.5</td>
<td>Wooden house (2-storey)</td>
<td>House</td>
<td>12</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>1.6</td>
<td>Wooden house (1-storey)</td>
<td>House</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 30: Community Structural Properties To be Affected in Sanakham District

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>Unit</th>
<th>Donsok</th>
<th>Houaytao</th>
<th>Donphoung</th>
<th>Maipakthoun</th>
<th>Khokkhaod</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Primary School</td>
<td>Unit</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Dormitory teacher</td>
<td>Unit</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Temple+Ceremony</td>
<td>Unit</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Cemeteries &amp; Graves</td>
<td>Unit</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Village Holly Spirit</td>
<td>Unit</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Others</td>
<td>Unit</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0</td>
</tr>
</tbody>
</table>
5.5 PARTIALLY AFFECTED FAMILIES

The houses of Partially Affected Families (PAFs) will either be flooded or are anticipated to be at risk from bank erosion in the project operation phase. PAFs are required to relocate to higher location within the current village location. The whole village will continue to be located in the same area but the lay-out of the villages will change due to the relocation of houses.

Most houses at Ban Donmen (120 of 217 houses) and Ban Houaytao (56 of 166 houses) have to be moved to higher ground due to expected flooding. From these 2 villages, 176 families need to be relocated (See table below). At Ban Donmen, some families are likely to lose their house and some of their productive land areas. On the other hand, some families will lose only part of their land but not their house. At the final measurement stage before the compensation will take place, these issues must be clarified.

Table 31: Number of Affected Families at Kenthao and Sanakham Districts

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>No.</th>
<th>Village Name</th>
<th>Population</th>
<th>Affected Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FMs</td>
<td>HHs</td>
</tr>
<tr>
<td>Xayaburi</td>
<td>Kenthao</td>
<td>3</td>
<td>Donmen</td>
<td>217</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Partially submerged</td>
<td>Number to be relocated:</td>
<td>120</td>
</tr>
<tr>
<td>Vientiane</td>
<td>Sanakham</td>
<td>8</td>
<td>Houaytao</td>
<td>217</td>
<td>166</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Partially submerged</td>
<td>No. to be relocated:</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total number to be relocated:</td>
<td>176</td>
</tr>
</tbody>
</table>

The Table below shows the number of PAFs anticipated to be at risk from future erosion of the Mekong river bank because they are just located on the bank though they are considerably higher than the level of 220 masl.

In Kenthao District, Ban Donsang and Ban Nakham have 17 and 19 PAFs respectively. In addition, an elementary school and a Buddhist temple at Ban Nakham will also be required to relocate to higher ground.

In Paklay District, there are a total of 42 PAFs who need to be relocated from Ban Bounghma (10 families), Ban Kengsao (29 families) and Ban Nasack (3 families).
In Sanakham District, there are 100 families who are required to be relocated from Ban Donphoung (40 families), Ban Maipakthoun (54 Families) and Ban Khokkhaoedor (6 Families). There are no anticipated impact on infrastructure or productive assets of the villages.

Table 32: Number of PAF in Kenthao, Paklay and Sankham Districts

<table>
<thead>
<tr>
<th>Province District</th>
<th>No.</th>
<th>Village Name</th>
<th>Population</th>
<th>Affected Items</th>
<th>Upstream (Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Population</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FMs</td>
<td>HHs</td>
<td>People</td>
</tr>
<tr>
<td>Xayaburi</td>
<td>1</td>
<td>Nakham</td>
<td>72</td>
<td>72</td>
<td>339</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Donsang</td>
<td>82</td>
<td>75</td>
<td>365</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Boungma</td>
<td>268</td>
<td>258</td>
<td>1,235</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Kengsao</td>
<td>151</td>
<td>161</td>
<td>814</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Nasack</td>
<td>168</td>
<td>170</td>
<td>845</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subtotally Affecte</td>
<td>741</td>
<td>736</td>
<td>3,598</td>
</tr>
<tr>
<td></td>
<td>No. to be relocated:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paklay</td>
<td>6</td>
<td></td>
<td>135</td>
<td>127</td>
<td>576</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Donphoung</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Maipakthoun</td>
<td>240</td>
<td>238</td>
<td>1,984</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Khokkhaoedor</td>
<td>275</td>
<td>247</td>
<td>1,611</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subtotally Affecte</td>
<td>650</td>
<td>612</td>
<td>4,171</td>
</tr>
<tr>
<td></td>
<td>No. to be relocated:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vientiane</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sanakham</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Grand Total No. to be relocated far from the Reservoir Bank: 178 1 1
6. **COMPENSATION ENTITLEMENT CRITERIA**

6.1 **COMPENSATION POLICY**

In this section the basic principles and measures for compensation and mitigation of resettlement impacts of the Mekong Sanakham HPP are outlined:

- APs will be systematically informed and consulted on compensation and/or resettlement options, including relocation options/sites, and socio-economic rehabilitation measures, the acquisition of lands, assets and possible impacts on their livelihoods. They will be informed of their rights and options and be invited to participate actively in the identification of mitigation and rehabilitation measures.

- The APs are to be identified and recorded as early as possible in order to establish their eligibility through a population record or census that has a cut-off date, preferably at the subproject identification stage, to prevent a subsequent influx of encroachers or others who wish to take advantage of such benefits.

- Eligible APs are entitled to compensation and livelihood rehabilitation measures sufficient to assist them to improve or at least maintain their pre-subproject living standards, income earning capacity and production levels.

- In the consultation process, representatives of local governments, village leaders (including spiritual or traditional leaders), civil society organizations such as NGOs. The customs and traditions, as well as the religious practices of all APs, will be respected and protected.

- The institutions of APs, and, where relevant of their hosts, are to be protected and supported. APs are to be assisted to integrate economically and socially into host communities so that adverse impacts on the host communities are minimized and social harmony is promoted.

- Lack of formal legal rights to assets lost will not deprive any APs from receiving compensation and entitlements. In application of the resettlement policy, distinctions should not be made between APs “with” and “without” formal legal title.

- Particular attention must be paid to the needs of the poorest APs, and socially and economically vulnerable groups. This may include those without legal title to the land or other assets, households headed by females, the elderly or
disabled, and other vulnerable groups, such as people living in extreme hardship, and ethnic groups that may be a minority in specific locations. Appropriate assistance must be provided to help them improve their socio-economic status.

- Where APs are particularly vulnerable groups, resettlement planning decisions will be preceded by a social preparation phase to enhance the participation of these APs in negotiation, planning, and implementation.

- Compensation rates for physical assets, i.e. houses, buildings and other structures, and non-physical assets such as lost income from productive assets or jobs, will be calculated at replacement cost and included in the RAP. These costs will be updated and adjusted as required at the time of compensation by the Resettlement committee.

- The APs who stand to lose only part of their physical assets will not be left with a proportion of land inadequate to sustain their current standard of living. A minimum land size will be identified and agreed upon during the resettlement planning process.

- For those resettlement impacts that will be non-significant (i.e. will not undermine the livelihoods of APs), cash compensation at replacement costs will be offered. For severely affected people (i.e. those APs experiencing significant impacts) sustainable livelihood restoration measures will be identified.

- An independent grievance redress mechanism, linked with existing formal and informal systems and cognisant of cultural requirements, will be established to solve resettlement related disputes and complaints from APs.

- All land acquisition, compensation, resettlement and rehabilitation activities need to be satisfactorily completed and the project area cleared of obstructions before the commencement of civil work.

6.2 ELIGIBILITY CRITERIA FOR AFFECTED PERSONS

6.2.1 DEFINITION OF PROJECT AFFECTED PERSONS

The definition of affected persons (APs) and affected households (AHs) proposed for the Mekong Sanakham HPP is as per Decree 192 (see section 3.2.1), which includes any person, entity or organization affected by a project; and, as a consequence of changed land use, would have their (i) standard of living adversely affected; (ii) right, title or interest in all or any part of a house, land (including residential, commercial, agricultural, plantations,
forest, and grazing land), water resources, or any other moveable or fixed assets acquired or possessed, in full or in part, permanently or temporarily adversely affected; (iii) business, occupation, place of work or residence areas adversely affected with or without displacement; or (iv) community resources adversely affected.

6.2.2 CRITERIA FOR ELIGIBILITY

Under Decree 192, all individuals and entities residing, or making a living, within an area to be acquired for a project - by the formally recognized cut-off date - would be considered APs with entitlements to compensation, resettlement and rehabilitation assistance.

The people, who are not living within the project area, but have land and/or buildings in the project area, are also considered to be APs and as such are entitled to compensation, resettlement and rehabilitation assistance.

The APs eligible for compensation and assistance under the Mekong Sanakham HPP include those APs falling into any one of the following three groups:

- Those who have formal legal rights to land (including customary and traditional rights recognized under the laws of the country).

- Those who do not have formal legal rights to land at the time the census begins but have a claim to such land or assets (on the condition that such claims are recognized under the laws or become recognized through a process identified in the resettlement plan).

- Those who have no recognizable legal right or claim to the land they are occupying (non-titled users).

- An acknowledgement of land owners and land users can mean that entitlement to compensation for the loss of land applies to more than one household. For example, when the land is owned by one household but used to gain a livelihood by another different household (who is usually paying some type of rent to the owner) then there are two eligible affected households and people for this one asset. The eligibility is based on: (a) ownership; and (b) use.

- There are no formal "land titles" that have been issued for land or assets in the project area. However, ownership is officially recognized in the Lao PDR by the registration of land and assets for the purposes of tax. In the case where owners have not declared their entire area of land (to reduce their tax charge), the discussion and agreement with the Village Head will assist in determining the correct area of land eligible for compensation. In the case where there are no tax registration certificates, customary use and ownership will be recognized, and this is usually well known in each village. However, in the
case that there is a dispute as to the owner then the grievance redress process may need to be activated at the village level initially to potentially resolve any issues relating to customary and traditional ownership and use rights over a particular land or asset (see section 10.3).

6.3 DESCRIPTION OF COMPENSATION ENTITLEMENTS

6.3.1 ASSET REGISTRATION

One of the steps involved in Resettlement planning is registration of every household’s non-movable assets. The precise information concerning the size, composition and productivity of these assets has to be collected from the villages to be resettled. The “Detailed Measurement Survey” (DMS) of the lost assets will be carried out after the Concession Agreement between the GOL and project developer. Asset registration functions as a cut-off date for claiming assets which will be affected by the reservoir and the construction site. Unless there are acceptable reasons for failure to include assets when the registration took place, no allowance will be made to include any claim for additional assets. The table below gives an example a household asset registration form.

<table>
<thead>
<tr>
<th>HOUSEHOLD ASSET REGISTRATION RECORD</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household location (Unit)</td>
<td></td>
</tr>
<tr>
<td>Village name</td>
<td></td>
</tr>
<tr>
<td>Village code</td>
<td></td>
</tr>
<tr>
<td>District</td>
<td></td>
</tr>
<tr>
<td>Province</td>
<td></td>
</tr>
<tr>
<td>Date of interview</td>
<td></td>
</tr>
<tr>
<td>Name of Interviewee</td>
<td></td>
</tr>
<tr>
<td>Cash Compensation</td>
<td></td>
</tr>
<tr>
<td>Resettlement Program</td>
<td></td>
</tr>
<tr>
<td>Not decided yet</td>
<td></td>
</tr>
</tbody>
</table>

Household profile:
Household Head Name
Family Census Book No.

Main house:
House Size (m2)
House with concrete post
House with wood post
Two storey house mixed wooden (2nd fl) and bricks (1st
One storey concrete house:
Others (describe)
House Frame:
Sawn Timber
Split timber
Bamboo
Concrete
Iron bar
Others

**Roof coverage:**
Tatch
Bamboo
Split timber
Corrugated sheet
Tiles
Others

**Floor:**
Split timber
Bamboo
Concrete
Soil
Other

**Walls:**
Split timber
Bamboo
Leaf
Bricks
Others

**Kitchen house/second house**
House Size (M2)
House with concrete post
House with wood post
Two storey house mixed wooden (2nd fl) and bricks (1st
One storey concrete house:
One storey wood house
Others (describe)

**House frame:**
Sawn Timber
Split timber

Bamboo
Concrete
Iron bar
Others

**Roof coverage:**
Tatch
Bamboo
Split timber
Corrugated sheet
Tiles
Others

**Floor:**
Split timber
Bamboo
Concrete
Other
**Walls:**
Split timber
Bamboo
Tatch
Bricks
Others

**Other Assets:**
**Rice barn**
Size [m2]
Wood
Bamboo
Others

**Toilet:**
Indoor flush toilet
Septic tank
Pit latrine (Cement lined)
Pit latrine (Timber/bamboo)
Pit latrine(Unlined)

**Land ownership**
Land area for housing: [m2]
Rain fed paddy field areas:[Ha]
Irrigated paddy field areas [Ha]
Gardens (all types):[Ha]
Swidden fields (all types): [Ha]
Grazing Land [Ha]
Fish Pond [m2]

**Main fruit trees**
1. Mango [No. of trees]
Mango [Production/year in Kip]
2. Jackfruit [No. of trees]
Jackfruit [Production/year in Kip]
3. Other fruit trees:

**Industry trees**
1. Name of trees:
No. of trees with the diameter < 2 cm
No. of trees with the diameter 3-5 cm
No. of trees with the diameter 6-10 cm
No. of trees with the diameter 11-15 cm
No. of trees with the diameter > 15 cm
2. Other Industrial trees:

**Name of Village Head:**
(Signature/fingerprint stamp and village seal)

**Name of Witness:**
(Signature)

**Name of Household Head:**
(Signature and fingerprint stamp)
6.3.2 COMPENSATION CRITERIA

The following compensation criteria are used for planning the relocation and resettlement schemes for Mekong Sanakham HPP:

- All APs who will experience impacts and losses under the Mekong Sanakham HPP will be entitled to adequate and prompt compensation for, or replacement of, assets lost.
- Proof of residency or traditional use from the village administration is required to establish the right to compensation.
- Compensation based on the principle of replacement cost will be provided for agricultural lands, gardens, building land, fruit trees, houses and other structures, schools, hospitals, dispensaries, temples, cemeteries, markets, buildings, and any other assets and activities that will be affected.
- Following the completion of the DMS and updating of the RAP, based on detailed design and demarcation of the impact zone on the ground, the project will provide residential/homestead, garden and/or agricultural-forestry production land for any household relocating due to construction of the access roads.
- For any household not wishing to receive land or housing, the Mekong Sanakham HPP will pay cash compensation at replacement cost based on the local market value prevailing at the time. Productive trees i.e. fruit and timber trees shall be compensated according to the agreement between the concerned parties and/or locally prevailing market prices and include the opportunity losses of future harvest forgone.
- Non-productive trees i.e. ornamental trees and shrubs shall be compensated according to the agreement between the concerned parties and/or locally prevailing market prices.

A. Housing

All resettled households will be provided with a new house to replace the house lost through resettlement. The standard house design will be an improvement on the majority of existing houses. For those APs with more developed residences or special needs, replacement housing will be provided to a standard better than the existing structure as recorded in the asset registration.

B. Outbuildings

Non-residential structures including commercial structures registered during asset registration will be replaced with structures of at least equivalent size and material composition at a location approved by the asset owner. Where APs do not wish to accept a new structure, the cash replacement value can be paid.

C. Productive Trees
The commercial trees are reported very few. Trees producing edible and industrial products which were listed during asset registration will be compensated for with cash and replacement seedlings. The budget in this RAP is estimated at an average rate for a tree. These APs may elect to receive cash compensation only for the lost assets if they do not have land available to plant the replacement seedlings.

D. Land Assets

The area of productive or unproductive agricultural land, residential and commercial land is gathered during asset registration. Land ownership can be proven with land title, tax payment certificates or village approval for undocumented land. Land will be compensated for with new land in the resettlement sites or cash payment in case that there is no enough land for replacement.

E. Land Valuation

Before commencing the compensation payments, a district-wide land valuation must be undertaken. The results of the land valuation are endorsed by the Land Department in the Ministry of Finance and accord to standards for calculating cash compensation. Land can be categorized as (a) residential land, (b) commercial land, (c) irrigated paddy land, (d) non-irrigated paddy land, (e) garden, (f) productive upland fields, (g) unproductive upland fields, (h) fallowed fields and (i) plantation. Annual updates to the land valuation are a good idea in areas where development is going ahead at a rapid pace in order to keep up with market trends.

F. Commodities production and Valuation

The District Agriculture and Forestry Office can produce statistics of historical annual agricultural land use, agricultural production and agricultural commodity prices. This data can be used to determine standards for the productivity of land and equitable cash compensation entitlement. Annual updates of the standards are essential in order to keep the payments in line with inflation and the current situations.

G. Community Buildings

In addition to the registration of household assets, the structures which belong to the directly affected villages as a whole will need to be assessed. The compensation for community structures will involve the physical relocation of the structures where possible. New buildings will be constructed from new materials at the resettlement sites.

The schools, health centers, dispensaries, markets, temples, meeting hall, cemeteries, roads and other constructions owned by the state and/or the affected village by the Project will be re-built by the Mekong Sanakham HPP or will be otherwise be compensated at replacement cost.

6.3.3 ENTITLEMENTS TO COMPENSATION & ASSISTANCE
The entitlements to compensation and assistance to be provided under the Mekong Sanakham HPP are consistent with those accepted by the GOL for other recent hydropower projects developed in Lao PDR. These include the packages of entitlements developed for Nam Ngum 2, Nam Theun 2, Nam Ngiep 1 HPP, Nam Ngiep 2 HPP, Theun Hinboun Expansion Project, and the Hongas Lignite Project.

The project entitlements presented below will address the various types of losses, as expected from the Mekong Sanakham HPP and as identified and presented in detail in Section 3.5.1 and 3.5.2.

The absence of legal or formal title to land is not a barrier to compensation. Both male and female APs will be equally consulted and their rights recognized. Negotiations and compensation payments and livelihood restoration will be with both the male and female heads of each household.

6.3.4 ENTITLEMENT TO LOSS OF LAND

As a priority, compensation will be based on the principle of “land-for-land” of equal size and/or productive capacity, as satisfactory to affected households. However, at the request of the affected household, compensation for loss of land can also be paid in cash equivalent of the current market value of lost land. If the head of household is married, land title for new land will be issued in the names of both the husband and wife. AHs will not be charged for taxes, registration and land transfer costs.

1) Temporary Loss of Land, loss of use of land for a period of less than one year e.g. during construction works:

   - No compensation for land if returned to the original user. However, the project will pay compensation to APs for the temporary use of land.
   - In the case of land being adversely affected, the project will restore land to its previous condition or better quality through measures to improve land quality.
   - If the disruption is more than one (1) year, APs have an option to a) continue the temporary use arrangements or b) sell affected land to the project through the provision of “land-for-land of equal productive capacity” and in a location satisfactory to APs.
   - Extreme care shall be taken by contractors to avoid damaging properties. Where damages do occur, the contractor will be required to pay compensation immediate to APs.

2) Damages will be restored to its former condition.
After the use of the land, the project will ensure the land is restored to its original condition or an improved condition and quality and returned to the land owner or lease holder within the agreed timeframe.

6.3.5 SPECIAL ASSISTANCE AND ALLOWANCES

In addition to compensation, at replacement cost, for lost and affected assets, relocating and vulnerable APs will be entitled to additional measures to assist in restoring, rehabilitating, and if possible, improving, their standard of living and well-being. As set out in Articles 7 and 8 of Decree 192, such additional assistance may come in the form of:

A. Relocation Assistance and Transition Support

APs displaced and/or affected due to the loss of income and livelihood shall be provided the following assistance until their income levels and living conditions can be stabilized: (a) transport allowance or assistance in kind to transfer to the resettlement site or their choice of relocation; (b) food allowance, in cash or in kind, to compensate for income lost, during the transition period; (c) suitable development assistance after displacement during the transition period until they are able to restore their incomes and living standards or reach the targeted level of household incomes on a sustainable basis.

B. Economic Rehabilitation

In addition to compensation, and measures as set out above, APs will be entitled to assistance to ensure economic rehabilitation/restoration and livelihood development support. Such measures include:

- all APs severely affected by the project due to loss of 10% or more of their productive income generating assets (loss of agricultural, industrial or commercial land), means of livelihood, employment or business and access to community resources shall be entitled to sustainable income restoration measures in addition to their entitlement for compensation and other allowances enabling them to attain at a minimum pre-project livelihood levels.

- For displaced persons whose land-based livelihoods are affected due to the project, preference shall be given to land-based resettlement strategies, or where land is not available, options built around opportunities for employment or self-employment.

- For displaced persons whose businesses are affected due to the project, in addition to compensation for lost land, structures and income, assistance shall be given to finding replacement sites for business as appropriate.

- Rehabilitation measures will focus on vulnerable groups. Adequate assistance, in addition to compensation for affected assets and other allowances, shall be
provided to enable such APs to achieve household income targets set above the national poverty line.

6.4 SPECIAL MEASURES FOR POOR AND VULNERABLE PEOPLE

Decree 192 requires that where a project is likely to adversely affect households belonging to poor and other vulnerable groups, the resettlement plan should specify measures, additional to the compensation entitlements, aimed to improve the livelihood status of the poor or vulnerable to a level above the poverty line.

The measures should focus to avoid potential social risks and should be organized around the themes that include: a) reducing barriers to market access, trade and employment opportunities; b) improving access to and delivery of essential social services to the poor; c) empowerment through good governance, sound participatory processes and effective organization of the poor; and d) reducing vulnerability to poverty through building social assets i.e. asset building strategies such as land-for-land, replacement housing, and increased security of tenure.

Non-land based strategies may include placing greater emphasis on the customary rights and cultural practices of indigenous people and ethnic minorities; provision of improved access to micro-finance and affordable micro-credit facilities; providing appropriate training in new jobs; and improving access to markets and employment opportunities. Interventions should be designed with greater participation by, and consultation with, the poor to ensure that their needs, priorities and preferences are fully addressed, and in a transparent manner with full involvement of civil society and stakeholders. Selection of a final strategy should be based on informed choices of affected people.

6.5 PROPOSED ENTITLEMENT MATRIX OF THE MEKONG SANAKHAM HPP

The compensation mode, assistance, restoration measures, and allowances that will apply to the Mekong Sanakham HPP are also included in the Entitlement Matrix (Table 3-2).
### Table 34. Mekong Sanakham HPP Entitlement Matrix

<table>
<thead>
<tr>
<th>Impacts / Issues</th>
<th>Entitlements for Compensation and Assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent loss of agricultural land</td>
<td>• Replacement land of at least the same size and equal productive value at a location acceptable to the APs.</td>
</tr>
<tr>
<td></td>
<td>• Replacement land will be cleared, fenced and prepared by the resettles (food for work program) or mechanically cleared if the APs cannot provide sufficient labour.</td>
</tr>
<tr>
<td></td>
<td>• In cases where replacement land is not available in sufficient area, the APs may accept cash payment for difference between land registered and land provided in the resettlement site.</td>
</tr>
<tr>
<td>Permanent loss of irrigated land</td>
<td>• Replacement irrigation system in resettlement site or</td>
</tr>
<tr>
<td></td>
<td>• Compensation by cash to the labour fee of current irrigation system development</td>
</tr>
<tr>
<td>Permanent loss of residential land</td>
<td>• Replacement land for housing 600 m² per family</td>
</tr>
<tr>
<td>Permanent loss of commercial land</td>
<td>• Replacement land of at least equal value, location will be potable to the APs in order to continue viable commercial activities, or</td>
</tr>
<tr>
<td></td>
<td>• Cash payment for the value of land if commercial activities cannot be continued or APs do not wish to do so.</td>
</tr>
<tr>
<td>Loss of houses</td>
<td>• Provision for new material and construction of new house with better standard.</td>
</tr>
<tr>
<td></td>
<td>• Basic housing area of 10 m² per person.</td>
</tr>
<tr>
<td></td>
<td>• Basic housing area of 50 m² for 5 members or less.</td>
</tr>
<tr>
<td></td>
<td>• Barn, livestock pens and other outbuildings will be replaced.</td>
</tr>
<tr>
<td></td>
<td>• Private fences will be replaced by shared fences.</td>
</tr>
<tr>
<td></td>
<td>• Flushing latrines will be installed on new house plots.</td>
</tr>
<tr>
<td></td>
<td>• Household electrical wiring and basic fixtures for three lamps and one plug will be provided.</td>
</tr>
<tr>
<td>Loss of commercial structures</td>
<td>• Replacement structure in a location acceptable to the APs.</td>
</tr>
<tr>
<td></td>
<td>• Cash option if commercial activities cannot be continued or APs do not want to continue.</td>
</tr>
<tr>
<td>Loss of physical cultural resources</td>
<td>• Provision of rituals and acceptable arrangements for transporting moveable items and re-establishment at new site.</td>
</tr>
<tr>
<td></td>
<td>• Replacement of holy house and structures of at least the same value and acceptable to the APs</td>
</tr>
<tr>
<td></td>
<td>• Provision for appropriate rituals for cemeteries, holy sites and other immovable cultural landmarks prior to moving.</td>
</tr>
<tr>
<td>Loss of agricultural production system</td>
<td>• Allocation and development of 02 ha of land in an off-village location on a community basis (with host village if any).</td>
</tr>
<tr>
<td></td>
<td>• Irrigation system for 01 ha of agriculture land.</td>
</tr>
<tr>
<td></td>
<td>• A range of feasible production and income generating options in order to get better of.</td>
</tr>
<tr>
<td></td>
<td>• Supply of basic tools and equipment for agriculture work.</td>
</tr>
<tr>
<td></td>
<td>• Planting materials for three years, including saplings.</td>
</tr>
<tr>
<td></td>
<td>• Fertiliser and agro-chemicals, as required.</td>
</tr>
<tr>
<td>Loss of fruit trees</td>
<td>• Cash compensation based on 5 years of production or</td>
</tr>
<tr>
<td>Loss of common property resources</td>
<td>Replacement seedling at new village location as part of the livelihood restoration package.</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Loss community infrastructure</td>
<td>Access to forests, grazing land, fisheries in the new area, livelihood restoration packages, replacement natural common property with more productive private assets</td>
</tr>
<tr>
<td></td>
<td>Enhancement and development of common property resources of new villages.</td>
</tr>
<tr>
<td>Loss of educational facilities</td>
<td>All-weather road to each resettlement site.</td>
</tr>
<tr>
<td></td>
<td>Replacement of all community infrastructure of at least the same value and function or improvement of host village situation.</td>
</tr>
<tr>
<td></td>
<td>Village Office and meeting/community hall at each resettlement village location,</td>
</tr>
<tr>
<td></td>
<td>New water supply system or improvement of host village year-round water supply.</td>
</tr>
<tr>
<td></td>
<td>Market place and bus station</td>
</tr>
<tr>
<td></td>
<td>Electricity connections to community facilities.</td>
</tr>
<tr>
<td>Loss of health facilities</td>
<td>Replacement school or upgrading of existing host village facilities, including library.</td>
</tr>
<tr>
<td></td>
<td>Provision of equipment, materials and furniture as required.</td>
</tr>
<tr>
<td></td>
<td>Training of existing and new teaching staff.</td>
</tr>
<tr>
<td>Loss of cemetery</td>
<td>New cemetery at the resettlement site as requested.</td>
</tr>
<tr>
<td></td>
<td>Assistance for performing required ceremony in an amount of 250 USD per cemetery.</td>
</tr>
<tr>
<td>Moving Assistance</td>
<td>One time disturbance allowance for moving 150 USD per household (This covers the cost of labour to dismantle and transport moveable assets to the new site and assistance to perform spiritual ceremonies in departing villages).</td>
</tr>
<tr>
<td>Training and Support</td>
<td>Training and support for livelihood restoration for 5 years after moving and establishment of household plots or until getting better off in a sustainable manner.</td>
</tr>
<tr>
<td></td>
<td>Skill training for all households based on consultations and agreed to by the community and individual households.</td>
</tr>
<tr>
<td></td>
<td>Social development training for all households, e.g.</td>
</tr>
</tbody>
</table>
### Resettlement Action Plan

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| Household budget training, saving and credit groups etc. | - Support and advice from Project Resettlement Unit, RMU and District line agencies.  
- Priority for labour opportunities on project sites. |
| Food support             | - Assistance for 20 kg of milled rice per person per month in the period of 3 years of resettlement or until the new resettled families can afford to get rice sufficiency.  
- Additional support of supplementary protein to meet basic nutritional shortfalls during first year of resettlement. |
| Venerable Households     | - Households with insufficient labour force will receive special assistance for their individual needs during the movement to new place.  
- Vulnerable households will receive assistance in an amount of 100 USD for the establishment of suitable production systems in relation to their needs and capacity. |
| Self-relocation          | - Those who do not wish to partake in the Project resettlement program will receive a one-time payment for the loss of structures, land, trees and produce with the agreement of the SRMU. |
| Grievance                | - All households to have access to Grievance Committee for complaints. |
7. RELOCATION SCHEME

7.1 RELOCATION DEVELOPMENT FRAMEWORK

*Relocation Scheme* means a proposed plan for shifting affected families to upper terraces located near and within the original village. In the project context, the affected families are those whose houses are at risk of flooding (from operating water levels between 219 masl in the dry season and 220 masl in the wet season) and those whose houses are located too close to the river bank. These houses are anticipated to be at risk from the bank erosion in the future.

The Mekong Sanakham HPP relocation policy is based on the policies formulated for the development projects in Lao PDR which have been accepted by both the GOL and international lending agencies. Consistent with Decree 192, the objectives of the Mekong Sanakham HPP’s relocation policy are to minimize relocation by choosing alternative viable project options and to ensure that those relocated receive compensation and assistance under the project, so that they will be able to continue their normal livelihood activities as they were before the project.

- The relocation principles are based on the following principles:
- The APs and village administrations participate in the consultation, planning and design of their new relocation areas.
- Special measures will be identified and included in the relocation program to assist vulnerable APs take care of their needs with a view to self-reliance.
- The construction of new houses and provision of services and utilities at the new relocation site will be in accordance with designs approved by the Relocation Committee in the best interests of the APs and host community population in and around the relocation site.
- The compensation for dismantling old houses and construction cost of new replacement houses, in cooperation with the owners, will be determined by the project. Each house may be designed by the APs according to their preference. Allowances for transportation (of families, household goods, livestock etc) will be provided by the project to each relocating household or family.
- Households, or families as the case may be, relocating outside the Relocation Area (to other localities) will receive full compensation from the project in one single payment for all land and assets/property affected by the project, and will be provided a transportation allowance to their destination. Any self-relocation proposals must be reviewed for feasibility and approved by the Relocation Committee before agreement to cash payment.
- Households, or families, as the case may be, who are affected by the construction site and are required to relocate, will be entitled to relocation assistance as well as compensation. The relocation transition period (from
relocation to self-sufficiency) will be minimized and adequate social, economic and environmental support will be provided during this period.

- Those to be relocated will, as a matter of their preference, be relocated on the sites situated within their district, as close to their existing villages as possible. Those few households or families as the case may be, wishing to relocate elsewhere will have that option and will be paid adequate compensation.

- New relocation sites will be provided with appropriate community infrastructure, services and utilities as specified in the RAP.

- In so far as changes in household economic activities are proposed, the replacement opportunities will recognize the ability and interest of the APs as derived through consultations with them; new activities will be introduced on a sound economic basis, with risks identified and understood.

- The allocation of plots of land for homesteads, houses and farm plots will not be done on a per household basis but rather on household composition (i.e. the number of families and people)

- Farm plots will be provided to affected families who will lose both houses and farm land at replacement value.

- The socio-cultural composition of the affected villages will be recognized in the relocation plans and their implementation. Special measures will be planned for vulnerable groups.

- Any host community materially affected by the relocation program will be compensated according to the degree of the impact.

### 7.2 ALTERNATIVE RELOCATION SITES

The following general principles regarding the identification of a suitable relocation site have been applied:

- That partially affected families from the flooded areas and/or at risk of bank erosion express preferences for sites within their current village location

- While a relocation site will be developed, this will not preclude or foreclose options of self-relocation for those AHs that would prefer to make their own arrangements.

- The new site must have a year-round access road, connection with the current village infrastructure and services (APs expressed strong preference of being near a main road during consultations).

- Consultations with the relocating villages and families need to be undertaken over a period of time to find out if there are strong preferences or whether opinions or ideas change.

- Before any option can be considered viable, adjacent villages, as well as host communities, should be fully consulted, and agree to welcome relocating people.

At Kenthao District, the field examination was carried out on the 10th to the 12th of January 2011 to study the feasibility of proposed sites for relocation of partially affected villages.
Ban Houay Lah was the first upstream village surveyed, which is located around 2 km far from the dam site. There are 3 relocation sites that have been proposed for further feasibility investigation:

- **Relocation Site No. KD 1 – Donmen Area**, located upslope of current village location for the relocation of 120 of 217 households from the village about 500m west from the current residential area.

- **Relocation Site No. KD 2 – Nakham Area**, located upslope of current village location for relocation of 19 of 72 households and a school from the village west of the current residential area.

- **Relocation Site No. KD 3 – Donsang Area**, located upslope of current village for the relocation of approximately 17 of 82 households from the village west of current residential area.

At Paklay District, there are no potentially inundated villages from the reservoir at FSL 220 masl. Some households, however, in 3 villages expressed their concerns from the risk of bank erosion because their houses are located just close to the Mekong river bank. They requested to be relocated to higher ground. The relocation is needed to be planned for 42 households of 3 villages:

- **Relocation Site No. PD 1 – Ban Bouncma Upslope Area** for 10 families living just close to the Mekong River Bank (Bank Erosion).

- **Relocation Site No. PD 2 – Ban Kengsao Upslope Area** for 29 families living just close to the Mekong River Bank (Bank Erosion).

- **Relocation Site No. PD 3 – Ban Nasack Upslope Area** for 3 families living just close to the Mekong River Bank (Bank Erosion).

At Sanakham District, the consultation was started by the meeting with the Sanakham District Governor on 8 January 2011 led by the Deputy Head of Sanakham District Cabinet to discuss and consult on relocation issues in the district area. There are 4 relocation sites for potentially AHs from river bank erosion:

- **Relocation Site No. SD 1 – Ban Donphoung Upper Terrace** for the relocation of 40 families from Donphoung Village.

- **Relocation Site No. SD 2 – Ban Maipakthoun** Upslope Area for relocation of 54 families from Maipakthoun Village.
**Relocation Site No. SD 3** – Ban Houaytao Upper Terrace for the relocation of 56 families along Houaytao River on the hill opposite to the bridge on the eastern part of the current village location.

**Relocation Site No. SD 4** – Ban Khokkhaodor Upper Terrace for the relocation of 6 families to a spare site in the village.

It should be noted that land availability for the relocation of AHs in the 3 districts is very limited. Most of the affected villages in the project area have no reserved community land or land area large enough to satisfy the need of relocation of the anticipated affected families from flood or bank erosion. Most of the lands have been used for agriculture and the export of produce such as maize and Jobs’ tears. For this reason, most of the land area investigated is privately owned. The village heads had to ask the land occupants if they were interested in providing parts of their land for the development of house plots for the APs. Most of them agreed to provide part of their land. Some requested compensation in cash to get money for running home businesses. Some requested that the project developer help develop their remaining land and to be entitled to participate in any livelihood development program the project will provide to the new community.

Depending on the actual land location, the relocation site for different APs houses may not be in one entire land. The house plot with 20 x 25 = 500 square meters costs between 5,400,000 and 10,800,000 Kip or between US$ 650 and US$ 1350. The final compensation rate is subject to negotiation between the Relocation Committee, the land owners and the developer before the implementation of the RAP.

Each relocation site will compose of residential, community and agricultural areas. The residential area will compose of the house plots for all resettled families which includes 0.02 ha of home yard garden. The house plot for each family will be 0.06 ha (20 m x 30 m). The community area will compose of land areas for community facilities and infrastructure.

The actual land area as well as the suitability of all the proposed relocation sites at each District needs to be investigated in detail at the next stage. The estimation of relocation area must aim to provide enough land for paddy rice if available and for crop cultivation for export such as maize, Job’s tears, cassava and others.

### 7.2.1 **RELLOCATION SITES IN KENTHAO DISTRICT**

The feasibility study on relocation sites for affected APs within the Kenthao District was launched on the 10 January 2011.

The Public Consultation Meeting on the feasibility of relocation sites for Ban Donmen APs was launched on the 11th of January 2011 at night time. 130 people attended the meeting of which 29 were female. The meeting lasted 3 hours. The key subjects of the discussion were about the impact and loss of agricultural land, about the compensation mode for all the lost assets especially for rice field loss. People insisted to get new rice fields for replacement. The decree no. 192/PM (July 2005) was explained to the APs and the best practices of the
implementation of the RAP of Nam Theun II and other development projects in Lao PDR. The APs requests and suggestions were reported.

The participants who represented the APs agreed to be relocated in the western part of the current village since there was no other land area suitable for this and in order to continue to keep Ban Donmen from breaking down. For the APs who will lose agricultural land, they will get a replacement from the Khoun Houa Namkay Area. The APs complained that the commute to the agricultural land there will make life harder but still agreed to have land at Dong Houay Ang Area but not unanimously. The site investigation team was composed of 10 participants: 4 representatives of Ban Donmen; a representative of Kenthao District Authority; a representative of the developer; and 2 specialists from the NCG Company.

A. Analysis of Relocation Site No. KD 1 – Donmen Area

- **Name:** Relocation Site No. KD 1 – Donmen Area
- **Location:** West of current Ban Donmen between the road from Ban Houay Lah and the road from Ban Donmen.
  - On the North: It borders with Houay Na Noi and the road to Ban Houay Lod and Kenthao District.
  - On the East: - current Ban Donmen and Mekong River.
  - On the West: - Phou Houay Fene and Houay Fene
  - On the South – Village sacred forest and the earth road to Ban Houay Lah

- **GPS Locations:**
  1. N- 17.56.43.4; E- 101.24.06.4; EL = 230 m asl.
  2. N- 17.56.34.8; E- 101.24.08.9; EL = 228 m asl.
  3. N- 17.56.38.4; E- 101.24.18.7; EL = 231 m asl.
  4. N- 17.56.47.5; E- 101.24.20.4; EL = 230 m asl.
  5. N- 17.56.50.1; E- 101.24.14.2; EL = 229 m asl.
  6. N- 17.56.33.5; E- 101.24.05.1; EL = 228 m asl.
  7. N- 17.56.41.6; E- 101.24.01.5; EL = 234 m asl.

- **Purpose of Usage:** For the relocation of 120 households with 120 families comprising 600 people. Because of living just close to the Mekong River Bank, the APs are concerned about the risk of bank erosion in the future so they have requested to be relocated to a safer place.

- **Available Land:** From the site survey, there are 3 land plots that can be used for relocation. The total size of available land is
approximately 19 ha. The 1-rst plot is located between the elementary and the junior secondary schools which has around 6 ha of area. This place is proposed for community facilities such as: Village Office, Village meeting hall. The 2-nd plot is located on the north up the hill at the village entrance point which has around 3 ha. This place is proposed for a future temple location. The 3-rd plot is the area which extends from the northwest to the south west direction around the current village location.

- **Topography of the area:** Flat or almost flat at the elevation around 228 - 231 m asl.

- **Availability of water source:** Water source for household are available from the bore holes only. The Houay Na Noi and Houay Fene will water only the agricultural land.

- **Soil fertility:** Moderately fertile - some proper improvement may be required.

- **Land use and land cover:** Mostly perennial crop cultivation and a plot of teak plantation

- **Current land occupation:** The investigated land belongs to Ban Donmen villagers. The land owners agreed to allocate land for developing residential area to co-villagers but asked for compensation in cash to start running family business. Most of them requested the developer to develop their remaining land and receive benefits in all the livelihood development programs.

- **Practicality of land:** Perennial crops, such as: maize and Job’s tears and vegetables.

- **Opinions of the APs about the site:** The APs agreed to be relocated in the proposed area to keep Ban Donmen as one. They requested the developer to take responsibility to improve their living conditions to be better off and to develop village infrastructure such as roads, electricity, tap water supply, schools, health center, and other.

Minimum Land Area Required For Resettlement Site No. KD 1 Development

- Relocation Site No. KD 1: Accommodation Requirement
Donmen Area
- No. of affected families of Ban Donmen: 120
- Population: 600

Residential and Community Area: ha
- Residential Area (20 x 30 = 600 m² = 0.06 ha/family): 7.2
  - Village office/Hall/Meeting room: 1.00
  - Village Development Cluster Housing: 0.50
  - Temple or Recreation Place: 1.00
  - Secondary School: 0.00
  - Primary School (6 rooms): 0.00
  - Market: 0.50
  - Bus Station: 0.50
  - Clinic/Healthcare Centre: 0.00
- Main In-village road (6 m width): 0.42
  - Small In-village road (4 m width): 0.40
- Reserved Land: 1.00
- Total land required (ha): 12.52

Figure 31: Relocation Site Selection for Ban Donmen (Investigated by village and district representatives)
Figure 32: Proposed Relocation Site KD 1

Figure 33: Condition of Western Area of KD1
B) Analysis of Relocation Site No. KD 2 – Ban Donsang Upper Terace Area

This proposed site is for the relocation of 17 affected families living just close to the Mekong River Bank (which is potentially at risk from bank erosion).
**Name:** Relocation Site No. KD2 – Ban Donsang Upslope Area  
**Location:** Within the existing Ban Donsang Area.  
**GPS Locations:** To be officially rechecked by village/district authorities.  
**Purpose of Usage:** For the relocation of 17 families comprising about 85 people whose houses are anticipated to be affected by bank erosion in the future.  
**Land area required:** The minimum land area required for the relocation of 17 families is approximately 1.02 ha.  
**Land Availability:** According to the village authority report, there is no community reserved land for this purpose. The required land for the relocation of 17 families needs to be purchased from the villagers.  
**Land use and cover:** General upland rain-fed plantations.  
**Opinions and requests by land owners:** Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.  
**Opinions and suggestions by the APs** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

Minimum Land Area Required For Relocation Site No. KD 2 Development

- Relocation Site No. KD2: Accommodation Requirement

- Ban Donsang Upslope Area
  - No. of Affected Families From Ban Donsang: 17  
  - Population: 85

- Village Area:
  - Residential Area (20 x 30 = 600 m² = 0.06 ha/family): 1.02  
  - Minimum land required in ha: 1.50
A) Analysis of Relocation Site No. KD3- Ban Nakham Upper Terrace Area

This proposed site is for the relocation of 19 families of APs living too close to the Mekong River Bank (that may be at risk of bank erosion) and also for the relocation of a Village school.

- **Name:** Relocation Site No. KD3 – Ban Nakham Upslope Area
- **Location:** Within the current Ban Nakham Area
- **GPS:** To be officially rechecked by village/district authorities
**locations:**

- **Purpose of usage:** For the relocation of 19 families whose houses are anticipated to be affected by bank erosion in the future. A village school also is anticipated to be at risk from bank erosion in the future.

- **Land area required:** The minimum land area required for developing 19 house plots and for a school area is approximately 2.14 ha.

- **Land availability:** According to the village authority report, there is no community reserved land for this purpose. The required land for the relocation of 19 families needs to be purchased from the villagers. For a new school area, the village authority will be requested to find out a community land. The developer will be responsible for the relocation and building a new school.

- **Land use and cover:** General upland plantation.

- **Opinions and requests by land owners:** Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.

- **Opinions and suggestions by the APs:** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

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**Minimum Land Area Required For Relocation Site No. KD 3 Development**

- **Relocation Site No. KD3: Accommodation Requirement**

- **Ban Nakham Upslope Area**
  - No. of affected families of Ban Nakham 19
  - Population 95

- **Village Area:**
  - Residential Area (20 x 30 = 600 m² = 0.06 ha/family) 1.02
  - Minimum land required in ha 1.50
7.2.2 RELOCATION SITES IN PAKLAY DISTRICT

a) Analysis of Relocation Site No. PD1 – Ban Bounga Upper Terrace Area

The proposed site is for 10 families of APs living too close to the Mekong River Bank (which is potentially affected due to bank erosion).

- **Name:** Relocation Site No. PD 1 – Ban Bounga Upslope Area
- **Location:** Within the current Ban Bounga Area
- **GPS locations:** To be officially rechecked by village/district authorities.
- **Purpose of usage:** For the relocation of 10 families whose houses are anticipated to be affected by bank erosion in the future.
- **Land area required:** The minimum land area required for developing 10 house plots is approximately 0.6 ha.
- **Land availability:** According to the village authority report, there is no community reserved land for this purpose. The required land
for the relocation of 10 families needs to be purchased from the villagers.

- **Land use and cover:** Mostly upland cultivation.
- **Opinions/requests by land owners:** Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.
- **Opinions and Suggestions by the APs:** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

**Minimum Land Area Required For Relocation Site No. PD1 Development**

- **Relocation Site No. PD 1:** Accommodation Requirement
  - No. of affected families of Ban Bongma: 10

- **Village Area:**
  - Residential Area (20 x 30 = 600 m² = 0.06 ha/family): 0.6
  - Minimum Land Required in ha: 0.6

![Figure 38: Existing Ban Bongma and Proposed Relocation Site](image)
b) Analysis of Relocation Site No. PD2- Ban Kengsao Upper Terrace Area

A site is proposed for the relocation of 29 families of APs living too close to the Mekong River bank which is potentially at risk from bank erosion.

- **Name:** Relocation Site No. PD2 – Ban Kengsao Upslope Area.
- **Location:** Within the current Ban Kengsao Area.
- **GPS locations:** To be officially rechecked by village/district authorities.
- **Purpose of usage:** For the relocation of 29 families whose houses are anticipated to be affected by bank erosion in the future.
- **Land area required:** The minimum land area required for developing 29 house plots is approximately 1.74 ha.
- **Land availability:** According to the village authority report, there is no community reserved land for this purpose. The required land for the relocation of 29 families needs to be purchased from the villagers.

- **Land use and land cover:** General upland plantation.
- **Opinions and requests by land owners:** Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.

- **Opinions and suggestions by the APs:** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

**Minimum Land Area Required For Relocation Site No. PD2 Development**

- **Relocation Site No. PD 2: Accommodation Requirement**
  - No. of affected families of Ban Kengsao: 29
  - Village Area:
    - Residential Area \(20 \times 30 = 600 \text{ m}^2 = 0.06 \text{ ha/family}\) 1.74
    - Minimum Land Required in ha: 1.74
C) Relocation Site No. PD3 – Ban Nasack Area

The proposed site is selected for the relocation of 3 families of APs living too close to the Mekong River Bank which is potentially at risk of bank erosion.

The relocation of only 3 families will not have any problems relating to the location. There will be some villagers that want to sell their land to get cash for running home business or for any other purposes. The cost of the land can be higher than in the remote areas since Ban Nasack is located along the main road No. 4 (Kenthao-Paklay).

Here is the analysis of the site.

- **Name:** Relocation Site No. PD3 – Ban Nasack Area.
- **Location:** Within the current Ban Nasack Area.
- **GPS locations:** To be officially rechecked by village/district authorities.
- **Purpose of usage:** For the relocation of 3 families whose houses are anticipated to be affected by the bank erosion in the future.
Resettlement Action Plan

- **Land area required:** The minimum land area required for developing 3 house plots is approximately 0.2 ha.

- **Land availability:** According to the village authority report, there is no community reserved land for this purpose. The required land for relocation of 3 families needs to be purchased from the villagers.

- **Land use and land cover** Mostly upland cultivation (i.e., maize, Job’s tears, and other).

- **Opinions and requests by land owners** Current owners who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.

- **Opinions and Suggestions by the APs** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

Minimum Land Area Required For Relocation Site No. PD 3 Development

- **Relocation Site No. PD3:** Accommodation Requirement
  
  - No. of affected families of Ban Nasack: 3
  - Village Area:
    - Residential Area (20 x 30 = 600 m² = 0.06 ha/family): 0.18
    - Minimum land required in ha: 0.18

7.2.3 **RELOCATION SITES IN SANAKHAM DISTRICT**

The consultation commenced with a meeting with Sanakh District Governor on the 8th of January 2011 led by the Deputy Head of Sanakh District Cabinet to discuss and consult on relocation issues in the district area. During the period of 8th and 9th of January 2011, the field examination has been carried out to study the feasibility of proposed sites: as compensation for affected agricultural land; and for the relocation of potentially inundated villages of Sanakh District. The Donkouad Site investigation team was composed of 13 participants: 7
officials from Sanakham District and Phalad Village administration, 3 specialists from China Datang Overseas Investment Co. Ltd and 3 specialists from NCG Company.

(b) Analysis Relocation Site No. SD 1 – Ban Donphoung Upper Teraces

The site is to accommodate the relocation of 40 families within the Donphoung Village Area.

- **Name:** Relocation Site No. SD 1 – Donphoung Upper Terrace
- **Location:** On the northeastern part of current Ban Donphoung area
- **GPS locations:** To be officially rechecked by village/district authorities.
- **Purpose of usage:** For the relocation of 40 families whose houses are located just close to the Mekong River bank.
- **Minimum land area required:** The land area required for the relocation of 40 families, a Village Office and a Village meeting Hall is approximately 4 ha.
- **Land availability:** According to the village authority report, there is no community reserved land for this purpose. The required land for relocation of 40 families needs to be purchased from the villagers.
- **Land use and cover:** Mostly perennial crop cultivation (maize, Job’s tears, and other).
- **Opinions and requests by land owners:** Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.
- **Opinions and suggestions by the APs:** The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

Minimum Land Area Required For Relocation Site No. SD 1 Development

- Relocation Site No. SD1: Accommodation Requirement
- Ban Donphoung Upslope Area
o No. of affected families of Ban Donphoung 40
o Population 200

- Village Area:
  o Residential Area (20 x 30 = 600 m² =0.06 ha/family) 2.40
  o Village Office Area 0.50
  o Minimum land required in ha: 2.90

Figure 40: Existing Ban Donphoung and Proposed Relocation Site

(a) Analysis of Relocation Site No. SD 2 – Ban Maipakhoun Upper Terrace Area

This site is for the relocation of 54 families within the existing Maipakhoun Village.

- Name: Relocation Site No. SD 2 – Ban Maipakhoun Upper Terrace
- Location: On the east direction of Ban Houaytao on the road to Ban Maipakhoun
- GPS locations: To be officially rechecked by village/district authorities.
Resettlement Action Plan

- **Purpose of usage**: For the relocation of 54 families whose houses are located just close to the Mekong River bank.

- **Land area required**: The minimum land area required for the relocation of 54 families, a Village Office and Village meeting Hall is approximately 4.5 ha.

- **Land availability**: According to the village authority report, there is no community reserved land for this purpose. The required land for the relocation of 54 families needs to be purchased from the villagers.

- **Land use and land cover**: Mostly upland general plantation.

- **Opinions and requests by Land owners**: Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family business.

- **Opinions and Suggestions by the APs**: The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

Minimum Land Area Required For Relocation Site No. SD 2 Development

- **Relocation Site No. SD2: Accommodation Requirement**
- **Ban Maipakthoun Upslope Area**:
  - No. of affected families of Ban Maipakthoun: 54
  - Population: 447
  - Village Area:
    - Residential area (20 x 30 = 600 m² =0.06 ha/family): 3.24
    - Village road (1000 x 4 = 4000 m²): 0.40
    - Village office Area: 0.50
    - Minimum land required in ha: 4.50
a) Analysis of Relocation Site No. SD 3 – Ban Houaytao Upper Terrace

The site is for the relocation of 56 families along Houaytao River on the hill opposite to the bridge on the eastern part of the current village location.

- **Name**: Relocation Site No. SD 3 – Ban Houaytao Upper Terrace
- **Location**: On the east direction of Current Ban Houaytao on the road to Ban Maipakthoun
- **GPS locations**: To be officially rechecked by village/district authorities.
- **Purpose of usage**: For the relocation of 56 families from 4 village units: Unit No. 1, 2, 3 and 4. These families live on the southern part of the village along Houaytao.
- **Land area required**: The minimum land area required for the relocation of 56 families, a Village Office and Village meeting Hall is approximately 4.5 ha.
- **Land availability**: According to the village authority report, there is no community reserved land for this purpose. The required land for the relocation of 56 families needs to be purchased from the villagers.
- **Land use and land cover**: Generaleland cultivation.
Current occupants who are interested in selling part of their land have been asked by the Village Authority. They asked for compensation in cash to get money for running family businesses.

The possibility of relocation and the feasibility of the site have been discussed between the Village Development Cluster, the Village Authority and the Consultant team. The Public Consultation meeting has to be carried out to get the APs opinions and suggestions relating to the compensation, relocation process and the developer responsibility.

Minimum Land Area Required For Relocation Site No. SD 3 Development

- Relocation Site No. SD3: Accommodation Requirement

- Ban Houaytao Upslope Area
  - No. of Affected Families From Ban Houaytao: 56
  - Population: 224

- Village Area:
  - Residential area (20 x 30 = 600 m² =0.06 ha/family): 3.36
  - Village Office: 0.5
  - Village Road (1000 x 4 = 4000 m²): 0.4
  - Minimum Land Required in ha: 4.5

**Figure 42: Existing Ban Houaytao and Proposed Relocation Site**

b. Relocation Site No. SD4 – Ban Khokkhaodor Upper Terrace
Minimum Land Area Required For Relocation Site No. SD 4 Development

- Relocation Site No. SD4 – Accommodation Requirement
- Ban Khokkhaodor Upslope Area
  - No. of Affected Families From Ban Nakham: 6
  - Population: 36
- Village Area:
  - Residential area (20 x 30 = 600 m² = 0.06 ha/family): 0.36
  - Minimum Land Required in ha: 0.5

![Existing Ban Khokkhaodor and Potential Site SD-4](image)

**Figure 43: Existing Ban Khokkhaodor and Potential Site SD-4**

### 7.3 RELOCATION SITE SELECTION CRITERIA

The criteria used for selecting the proposed relocation areas are as follows:

- The land be suitable for residential area development, suitable biophysical attributes, such as soil, topography, slope and drainage.
- The area be easily accessible and be connected with their existing village area, if possible, due to villagers’ preferences.
- Availability of year-round water supply for household consumption and usage;
- Access to forest and other legally exploitable natural resources should be as convenient as possible.
- A location relatively close to village infrastructure and facilities.
- The location should provide opportunities for relocating families to maintain their former livelihood activities such as small shops, services, or as the case may be.
• The sites fall in the planned development areas of the Socio-Economic Development Plan of the Village Administration.

The finalization of relocation sites will be the responsibility of the resettlement committees to be set up after project approval.

7.4 GUIDELINES FOR RELOCATION SITE DEVELOPMENT

Since most of the relocation sites are within the current village location and a relatively small number of houses need to be relocated there is no need to carry out a full site investigation and design. In the case of relocating around 50 houses or more, as per the cases of Ban Donphoung, Ban Maipakthoun, Ban Houaytao and Ban Donmen, there is a need of site investigation and planning only for building a new residential area.

The topography of the relocation site must include adequate areas of flat or gently sloping land for house construction. The water supply systems for domestic use at each relocation site will be provided.

The water sources, types and designs of individual systems will vary according to local topography, distance from the nearby mountains, groundwater quality, water table types and depths, along with the preference of the relocating village population. A detailed topographic survey should be carried out at selected relocation sites. Systems will comprise intakes, pump-stations, supply lines, header-tanks and distribution systems. Domestic supply will need to be of adequate quality and quantity to serve the needs of all households. Domestic water supply systems to be considered include rainwater storage, bore holes, lined dug wells, impoundment of small streams with or without treatment depending on water quality. Based on initial field inspection, water sources and supply systems for domestic purposes appear to be sufficient at the proposed relocation site, but will be further assessed. Where required, groundwater surveys will be conducted. The domestic water supplies will be provided so as to cover both the relocated population as well as host population.

The house plot size of 20m x 30m will be allotted to each family at the new site. This size of land can be fitted with house area and livestock pen for cattle, pigs, goats and chickens. The yard area of around 0.02 ha or 10 m x 20 m can be used every day for multiple purposes such as vegetable plantations. The partially affected villages as well as the host people will make use of their current agricultural lands that are not expected to be inundated with the assistance of the project. Those who will lose their lands will get compensation at replacement value or get new lands as replacement within the village area.

The house design is subject to agreement between the APs and the developer under the supervision of the Resettlement Committee. The elevated wooden house with cement column and metal sheet roof will be constructed for each household with size depending on the number of people in each family to replace the non permanent old ones or Housing Type 4. A standard area of 10 m² will be assured for a family member. For better sanitation as
before, a pour-flush latrine of appropriate size will be constructed to each household located behind the house. Within the house plot, the rice ban will be built to store the rice and other produce. The new houses at relocation sites will replace the old ones at replacement cost and in accord to preferences of the APs. There are 4 Housing Types or categories that have to be compensated (see section 4.4).

Basic infrastructure and supporting facilities will be constructed and arranged at each relocation site depending on the inventory of loss of community infrastructures and facilities. The replaced ones will be of high quality and standards. In other cases, the existing schools and infrastructures can be restored and upgraded to meet the national standards. These include appropriate size of school, health center, village office/community Hall and domestic water/electricity supply.

The temples that will be at risk also will be replaced at new site. Some structures made of wood can be dismantled especially the wooden pieces of temples should be moved and reconstructed at new site. Attention should be made to the moving of Buddha images of the temple if existing. The religious and traditional ceremony or compensation should be organized based on the consultation and participation of affected people.

Concerning the village lay-out of Ban Donmen of Kenthao District and 3 villages of Sanakham District, namely, Ban Donphoung, Ban Maipakhoun and Houaytao, a consultative and participatory approach will be taken to plan a village layout, ensuring that local preferences are incorporated. The process will consist of two main steps:

- Development of village layout options through participatory planning for each relocation area
- Preparation of technical plans for preferred layout options.

The first step is entirely participatory and will be based largely on villager ideas and preferences (DWG and Village Facilitators).

Existing topographic maps and data have been used for preliminary relocation site selection, and for assessing and comparing the potential of each site. A detailed topographic survey covering residential and cultivated land will need to be undertaken at the proposed relocation site.

Since most of the lands required for developing the relocation sites are private properties, the resettlement committees (see section 11.3) will play a key role in the land acquisition process with the owners and finalize the size and boundary of the relocation site together with the current host population to avoid land use conflict. The village representatives will join the delineation of the land marking. After finalization of site boundaries of the new land, the development process will be as follows:

- Land use and capability assessment of each site
• Land occupancy census and survey with map of 1:2,000 - This will be done together with the host population, and will document formal as well as informal land use. Future planning will be based on agreements between the host population and the relocated population.

• Land certificate issuance – The land titles in the name of the male and female heads of households should be officially performed in accordance with GOL procedures. A temporary land title is issued for 3 years to be followed by a permanent land title.

• Detailed design and development of village layout with participation of relocated people and local authorities.

• Construction of new houses, schools, health centers and other supporting facilities such as domestic water and electricity supply.

• Moving households to new land.

7.5 **UXO CLEARANCE AND SITE PREPARATION**

The proposed relocation sites have a low risk of encountering Unexploded Ordnances (UXO) because most of the site has been used for cultivation before. Nevertheless, UXOs will be surveyed in all relocation areas to confirm safety.
8. RESETTLEMENT SCHEME

8.1 RESETTLEMENT DEVELOPMENT FRAMEWORK

The Mekong Sanakham HPP resettlement policy is based on the policies formulated for the development projects (hydropower, mining and others) in Lao PDR which have been accepted by both the Government and international donors. Consistent with Decree 192, the objectives of the Mekong Sanakham HPP’s resettlement policy are:

I. to avoid involuntary resettlement wherever feasible
II. to minimize resettlement where population displacement is unavoidable by choosing alternative viable project options
III. where involuntary resettlement is unavoidable, to ensure that those affected receive assistance under the project, so that they will be at least as well off as they would have been in the absence of the project.

The Central Political Bureau of Lao People’s Revolutionary Party Order No. 09/ CPB, dated on 08/06/2004, and the Prime Minister Decree no. 09/PM, dated on 07/05/ 2007, on the “Establishment of Villages and Village Development Clusters (VDC) or K um Ban Phathana”. These Order and Decree provided National Policy in consolidating small sparcely located villages in far remote areas without any opportunity to have access to infrastructure into bigger villages relocated near the main road.

The relocation principles are based on:

- The APs and village administrations participate in the consultation, planning and design of their new settlement and production areas.
- Special measures will be identified and included in the resettlement program for those vulnerable APs to assist them to take care of their needs and foster self-reliance.
- The construction of infrastructure and provision of services and utilities in the new resettlements site will be in accordance with designs approved by the resettlement committee (see section 11.3) in the best interests of the APs and host community population in and around the resettlement site.
- The compensation for dismantling of old houses and construction cost of new replacement houses, in cooperation with the owners, will be determined by the developer. Each house may be designed by the APs according to their preference. Allowances for transportation (of families, household goods, ...
livestock etc) will be provided by the developer to each relocating household or family as the case may be.

- Households, or families as the case may be, resettling outside the Resettlement Areas (to other localities) will receive full compensation from the developer in one single payment for all land and assets/property affected by the developer and will be provided a transportation allowance to their destination. Any self-resettlement proposals must be reviewed for feasibility and approved by the resettlement committee (see section 11.3) before agreement to cash payment.

- Households, or families as the case may be, in the Mekong Sanakham HPP area and affected by the construction site and who are to be relocated, will be entitled to resettlement assistance as well as compensation. The resettlement transition period (from relocation to self-sufficiency) will be minimized and adequate social, economic and environmental support will be provided during this period.

- Food security will be provided to relocating households or families as the case may be.

- Those to be relocated will, as a matter of their preference, be relocated on the sites situated within their District, as close to their existing villages as possible. Those few households or families as the case may be, wishing to relocate elsewhere will have that option and will be paid adequate compensation.

- The Villages will be resettled as villages according to their traditional groupings (where two or more villages are to be combined in a new location, agreement of all concerned villages will be obtained).

- New villages will be provided with appropriate community infrastructure, services and utilities as specified in the RAP.

- In so far as changes in household economic activities are proposed, the replacement opportunities will recognize the ability and interest of the APs.

- New activities will be introduced on a sound economic basis, as derived through consultation with them, with risks identified and understood.

- The allocation of plots of land for homesteads, houses and farms will recognize the family-based composition of households; households will be allocated homestead and farm plots based on the number of families and people rather than on a per household basis.
• The socio-cultural composition of the affected villages will be recognized in the resettlement plans and their implementation. Special measures will be planned for vulnerable groups.

• Any host community materially affected by the resettlement program will be compensated according to the degree of the impact.

8.2 ALTERNATIVE RESETTLEMENT SITES

The general principles regarding the identification of a suitable resettlement site have been applied:

• The severely affected villages from flooded areas within the district have a preference for sites within the vicinity.

• While a resettlement site will be developed, this will not preclude or foreclose options of self-relocation for those AHs that would prefer to make their own arrangements.

• The new village must have a year-round access road to the district town and other population centers, so as to provide access to markets and district support services. Consultations have shown a strong preference of being near a main road or the district center.

• Consultations with the relocating villages need to be undertaken over a period of time to find out if there are strong preferences or whether opinions or ideas change.

• Adjacent villages, as well as host communities, should be fully consulted, and agree to receiving resettled people before such option can be considered viable.

During the period of 10th and 12th of Januar 2011, in Kenthao District, the field examination was carried out to study the feasibility of proposed sites for compensating the affected agricultural land and for the resettlement of potential inundated villages at Kenthao District. The study started from Ban Houay Lah which is the first upstream village located around 2 km far from the dam site. There are 3 resettlement sites that have been proposed for further feasibility investigation:

• Resettlement Site No. KD 1 – Houay Mouang Area, located around 1 km from current Ban Houay Lah for the resettlement of 77 households with 81 families.
- **Resettlement Site No. KD 2 – Dong Houay Ang Area**, located between Ban Houay Lod and Ban Dongsangouan along the road No. 4 that connects Kenthao and Paklay Districts for the development of a residential area for 140 households with some of the 150 families from Ban Khae.

- **Resettlement Site No. KD 3 – Khoun Houa Namkay Area**, located between Ban Houay Lod and Ban Dongsangouan around 5 km on the east from the main road No. 4 connecting Kenthao and Paklay Districts for the development of agricultural land for 150 families some of the 150 families from Ban Khae and 100 families from Ban Donmen that are expected to lose their rice field to the flood.

In Sanakham District, the consultation commenced with a meeting with the Sanakham District Governor on the 8th of January 2011 led by the Deputy Head of Sanakham District Cabinet to discuss and consult on resettlement issues in the district area. There is a proposed resettlement site that has been investigated for the feasibility for the resettlement of Ban Donsok APs.

- **Resettlement Site No. SD 1 – Done Kouad Area**, 6 km from Ban Phalad on the way to the new ferryboat station to Ban Veunkham for 28 AHs with 36 families from Ban Donsok.

Based on the general observation, the land availability for the resettlement and the relocation of the AHs in the 3 districts is very limited. Most of the severely affected villages in the project area have no reserved community land or land area large enough to satisfy the land area required for the resettlement or relocation of potential APs either from flood or bank erosion. Most of the lands have been used for agricultural purposes such as exports (e.g. maize, Jobs’ tears). For this reason, most of the land area investigated is privately owned. The village Heads had to ask the land occupants if there was interest in providing parts of their land for development of house plots for the APs. Most of them agreed to provide part of their land. Some requested compensation in cash to get money for running home business. Some requested the project developer help develop their remaining land area and be entitled to participate in livelihood development programmes that the project will provide to the resettled community.

Depending on the actual land location, the relocation site for different APs houses may not be on one entire land. The house plot with 20 x 25 = 500 square meters costs between 5,400,000 and 10,800,000 Kip or between US$ 650 and US$ 1350. The final compensation rate will be the subject to negotiation between the Resettlement Committee, the Land owners and the developer before the implementation of the RAP.

Each resettlement site will comprise residential, community and agricultural areas. The
Residential area will comprise house plots for all resettled families inclusive of a 0.02 ha home yard garden. The house plot for each family will be 0.06 ha (20 m x 30 m). The community area will comprise land areas for community facilities and infrastructures.

The actual land area as well as the suitability of all the proposed resettlement sites in each district needs to be investigated in detail at the next project stage. The estimation of resettlement area for the APs is aimed to provide enough land for paddy rice field if available and for crop cultivation for export: maize, Job’s tears, cassava and others.

8.2.1 RESETTLEMENT SITES IN KENTHAO DISTRICT

**Analysis of Resettlement Site No. KD 1 – Houay Mouang Area**

The Public Consultation meeting on the feasible resettlement site for Ban Houay Lah APs was launched on the 10th of January 2011. There were 66 people who attended the meeting of which 20 were female. There were 3 proposed sites: 1. Upper part of current location of the village – 6 ha; 2. Houay Lah originating area – 10 ha; and 3. Houay Mouang Area – 6 ha. The Site investigation team was composed of 9 participants: 6 representatives of Ban Houay Lah, a representative of Kenthao District Authority and 2 specialists from NCG Company.

- **Name**: Resettlement Site No. KD 1 – Houay Mouang Area
- **Location**: Located around 1 km far from current Ban Houaylah along the earth road that brings to Ban Donmen around 23 km on the north
- **GPS locations**
  1. N- 17.49.25.6; E- 101.30.56.8; EL = 230 m asl.
  2. N- 17.49.31.3; E- 101.30.38.4; EL = 228 m asl.
  3. N- 17.49.31.7; E- 101.30.43.8; EL = 229 m asl.
  4. N- 17.49.37.1; E- 101.31.02.4; EL = 231 m asl.
- **Purpose of Usage**: For the resettlement of 77 households with 81 families comprising 323 people of which 150 are female from the current residential area. The site development will comprise residential plots, required infrastructure and community facilities.
- **Land area required**: The minimum land area required for the resettlement of 81 families is approximately 11.5 ha.
- **Size of Available land**: The size of available land at Houay Mouang Area is approximately 6 ha. The area can be expanded with the help of machinery up to 12 ha.
**Resettlement Action Plan**

**Alternative possibility**  
Option No. 1 - Upper part of current location of the village – 6 ha can be used for building community facilities: Village Office and Meeting Hall, Village Development Cluster Housing, Health Center, School and Temple; and Resettlement Site No. KD1 can only be used for residential area for the APs

**Topography of the area**  
Undulating and hill slope at an elevation higher than 228 - 231 masl.

**Availability of water source**  
Water source for housing and agriculture can be use from Houay Lah (stream) which flows into Mekong River around 2 km upstream of the Dam. The weir can be built to use water for irrigation. The shallow bore holes with hand pump can be made for household use.

**Land use and land cover**  
Mostly perennial crop cultivation

**Current land occupation**  
Current occupants from 3 host households participated in the site investigation. They agreed to allocate land for the new resettlers. They asked for compensation in cash to start running family business and requested the developer develop their remaining land and receive benefits from the livelihood development program.

**Practicality of land**  
Suitable for residential area

**Strength of the site**  
The Xayabouri Provincial Administration has approved the plan to build strategic standard road to connect Kenthao Township – Nam Heuang Area – Ban Houay Lah and Ban Donmen, with 74 km in length.

**Minimum Land Area Required For Resettlement Site No. KD 1 Development**

- **Houay Mouang Area**
  - No. of Affected Families From Ban Houay: 81
  - Lah Population: 323
  - Residential and Community Area:
    - Residential Area (20 x 30 = 600 m² =0.06 ha/family): 4.86
    - Village office/Hall/Meeting room: 1.00
    - Village Development Cluster Housing: 0.50
    - Temple or Recreation Place: 1.00
    - Secondary School: 0.00
    - Primary School (6 rooms): 1.00
    - Market: 0.50
- Bus Station: 0.5
- Clinic/Healthcare Centre: 1.00
- Main In-village road (6 m width): 0.00
- Small In-village road (4 m width): 0.00
- Reserved Land: 1.00

Minimum Land Required in ha: **11.36**
- Agricultural Land (2 ha/family): **162.00**
- Total Land Required (ha): **173.36**

**Figure 44: Existing Ban Houay Lah and Proposed Resettlement Site**
Figure 45: Surrounding Houaylah Alternative Resettlement Site
Figure 46: Houay Lah Official Site Survey with District/Village Representatives
Analysis of Resettlement Site No. KD 2 – Dong Houay Ang Area

The consultation commenced with a short meeting with the Kenthao District Deputy Governor and Kenthao Head of the District Agriculture and Forestry Office (DAFO) on the 11th of January 2011 led by the Deputy Head of WREA to discuss and consult on resettlement issues within the district area because they are related to the Provincial Conservation Forest Dong Houay Ang.

The Public Consultation Meeting on a feasible resettlement site for Ban Khae APs was launched on the 12th of January 2011. 87 people attended the meeting and of whom 32 were female. The meeting took around 3 hours to find out the solution because most of the APs did not want to move away. The compensation mode for all the lost assets was also an important topic at the meeting. There were 3 proposed sites: 1. Houay Gnoddkhonkhen Area; 2. Pak Houay Hia Area on the border with Ban Nakham; and 3. Dong Hoauy Ang Area. Since there is no place suitable for resettlement, the APs agreed to be resettled at Dong Houay Ang Area but not unanimously. The site investigation team was composed of 10 participants: 4 representatives of Ban Khae, a representative of Kenthao District Authority, 3 representatives of the developer and 2 specialists from the NCG Company. The Ban Houay Lod Village Authority was interviewed for the actual condition of the area. Ban Houay Lod of Kenthao District located to the south of the site and Ban Dongsangouan of Paklay District located to the north of the site will be the host communities. Their opinions and their willingness to share the natural resources are of great importance to the harmony of the new community.

- **Name:** Resettlement Site No. KD 2 – Dong Houay Ang Area
- **Location:** Located between Ban Houay Lod and Ban Dongsangouan along the road No. 4 that connects Kenthao and Paklay Districts. The location is 23 km from Kenthao Township and 33 km from Paklay Township.
- **GPS locations:** N- 17.56.36.8; E- 101.21.14.5; EL = 277 masl.
- **Purpose of usage:** For development of a residential area for 140 households and 150 families of Ban Khae. The site development will compose of residential plots and required infrastructure and community facilities.
- **Land area required:** The minimum land area required for resettlement of 150 families is approximately 17 ha.
- **Size of available land:** The size of available land at Dongsangouan Area is enough for the resettlement of more than 150 families.
The area can be expanded with the help of machinery to more than 17 ha.

- **Topography of the area:** Flat and slightly undulating at the elevation around 277 - 330 masl.

- **Availability of water source:** Water source for housing can be use from Houay Tod (stream) which is runs along Ban Dongsangouan border. Water for drinking can be sourced from bore holes within the area.

- **Land use and land cover:** The area is still covered by natural forest

- **Current land occupation:** There are no land occupants in the area

- **Practicality of land:** Suitable for Residential Area and for backyard gardening

- **Opinions of the APs** That this is the most suitable site and they wish to be resettled in this area because there is not enough land to be located in the upper terrace of the current Ban Khae. They expressed their concerns about the compensation, the resettlement process and the responsibility of the developer to improve their livelihoods to get better-off. They requested that the developer compensate for the Water Pump Irrigation Project into the rice field land funded by the villagers that cost 575,000,000 kip or US$ 71,875.

- **Opinions of Kenthao Administration** The preferences of APs for a resettlement area either for the Dongsangouan Area and Khoun Houa Nam Kay Area were registered at the Provincial Conservation Forest of Xayabury. The total area is approximately 7,500 ha. This is a matter o be taken into consideration by the Provincial Authority.

- **Strength of the site** Locating along the main road No. 4 that connects Kenthao and Paklay Districts will give opportunity for non-land based jobs.
Resettlement Action Plan

- Dong Houay Ang Area
  - No. of Affected Families From Ban Khae: 150
  - Population: 649

- Residential and Community Area:
  - Residential Area (20 x 30 = 600 m² = 0.06 ha/family): 9.0
  - Village office/Hall/Meeting room: 1.0
  - Village Development Cluster Housing: 0.5
  - Temple or Recreation Place: 1.0
  - Secondary School: 0.0
  - Primary School (6 rooms): 1.0
  - Market: 0.5
  - Bus Station: 0.5
  - Clinic/Healthcare Centre: 1.0
  - Main In-village road (6 m width): 0.0
  - Small In-village road (4 m width): 0.4
  - Reserved Land: 1.0

Land Required at Dong Houay Ang (ha):

Agricultural Land at Khoun Houa Nam Kay:

1) For Ban Khae Affected Persons (2 ha/family): 300
2) For Ban Donmen Land Lost People (1 ha/family): 100

Land Required at Khoun Houa Nam Kay (ha):

Total Land to be developed (ha): 415.9
Figure 47: Houay Lah Official Survey Preparation with District/Village Representatives

Figure 48: Proposed Resettlement Site KD3 (Dong Houay Ang)
Analysis of Resettlement Site No. KD3 – Khoun Houa Namkay Area

This site is proposed for developing the agricultural land for the directly affected households of Ban Donmen and Ban Khae who will lose their agricultural land especially the rice fields to the reservoir and houses in Ban Khae. The area is located inside the Xayaboury Reservation Forest which has a total area of 7,500 ha. The Xayaboury Provincial Administration is directly responsible for the APs and the 2 affected village administrations. According to local villagers, a part of the Conservation Forest has been disturbed and most of the valuable industrial wood trees have already been cut out. The villagers from adjacent villages have used the area as a source of NTFPs and livestock husbandry but not cultivation. They had submitted an official letter to the Provincial Authority to get official permission to use part of the land for cultivation extension since the arable land in the villages was becoming limited day by day.

- **Name:** Resettlement Site No. KD 3 – Khoun Houa Namkay Area.

- **Location:** Located between Ban Houay Lod and Ban Dongsangouan around 5 km on the east from the main road No. 4 connecting Kenthao and Paklay Districts.
  - To the North: Houay Tad, Ban Dongsangouan.
  - To the South: Chain of Phou Phanga.
  - To the East: Road No. 4.
  - To the west: Poungdeng and Koumsio Areas.
  It is around 28 km from Kenthao District Township and around 38 km from Paklay Civic Center.

- **GPS locations:**
  1. N- 17°55’54.52”; E- 101°21’01.40”; EL = 301 m asl.
  2. Starting point of Access Road at Road No. 4 to Khoun Houa Nam Kay Area: N- 17°55’54.52”; E- 101°21’01.40”; EL = 301 m asl.

- **Purpose of usage:** For the development of agricultural land for 150 families from Ban Khae and 100 families from Ban Donmen that will lose their rice field.

- **Land area required:** The minimum land area required for 150 families from Ban Khae is 150 ha while 100 ha of land are needed to compensate lost rice fields of the Ban Donmen APs. In total, the land area required is 250 ha.

- **Size of available land:** According to Ban Houay Lod Authority and the visits from APs, the size of the available land is approximately 6 x 8 = 48 square km equivalent to 4,800 ha.
Topography of the area: Moderate flat, undulating and hilly slope at an elevation around 600 m asl.

Availability of water source: There are Houay Makkeng, Houay Namkay and Houay Tom have water whole year-round and are suitable for irrigation systems.

Land use and land cover: The area is still covered by natural forest. Part of the Conservation Forest has already been disturbed. At Khoun Houa Namkay Area, there is no valuable hardwood trees such as May Dou, May Taekha, May Khen, May Champi and other. Mostly are May Peuay Forest and wood for house building materials.

Current land occupation: There is no land occupants in the area

Land fertility: Good quality soil.

Practicality of land: Suitable for rice cultivation, fruit tree plantation and livestock rearing

Opinions of the APs: The APs asked that the Xayaboury Provincial Authority and Kenthao District Administration take their requests into consideration because there is not enough suitable land in the area to replace their rice fields and other arable land anticipated to be lost to the reservoir. They expressed their concerns about compensation, the resettlement process and the responsibility of the developer to improve their livelihoods to get better-off.

They requested that the developer compensate for all losses. For the lost rice field land, they requested the developer to provide only new rice field for replacement but not in cash.

Opinions of Kenthao Administration: The Dongsangouan Area and Khoun Houa Nam Kay Area that the APs of Ban Khae want to be resettled in were registered as Provincial Conservation Forest of Xayabouri. The total area is approximately 7,500 ha. This is the subject to be taken into consideration by the Provincial Authority.
o **Strength of the site** Locating close to the main road No. 4 that connecting Kenthao and Paklay Districts will give opportunity for non-land based jobs and for selling agricultural produces

Minimum Land Area Required For Resettlement Site No. KD 3 (Khoun Houa Namkay Area )

o Resettlement Site No. KD 3 – Accommodation Requirement

  o No. of Affected Families From Ban Khae (x 2 ha) 150
  o No. of Affected Families From Ban Donmen (x 1 ha) 100
  o Small in-agricultural land road (3 m width) To be estimated
  o Agricultural land to each FM:
    o Ban Khae (x 2 ha/family): 300
    o Ban Donmen (x 1 ha/family): 100

  o Minimum Land Required in ha: 400

**8.2.2 RESETTLEMENT SITE AT SANAKHAM DISTRICT**

**Analysis Resettlement Site No. SD 1 – Done Khouad Area / Houav Kalieng Area**

The consultation commenced with a meeting with the Sanakham District Governor on the 8th of January 2011 led by the Deputy Head of Sanakham District Cabinet to discuss and consult on resettlement issues in the district area.

During the 8th and 9th of January 2011, the field examination was carried out about the feasibility of the proposed sites for compensating the loss of agricultural land and for the resettlement of potentially inundated villages in Sanakham District. The Donkouad Site investigation team was composed of 13 participants: 7 officials from Sanakham District and Phalad Village administration, 3 specialists from China Datang Overseas Investment Co. Ltd and 3 specialists from NCG Company.

  o **Name:** Resettlement Site No. SD 1 – Done Kouad Area
  
  o **Location:** 6 km to the southwest direction of Current Ban Phalad on the road to the ferryboat station that connects Sanakham and Kenthao Districts via Ban Veunkham, a village of Kenthao District in Xayaboury Province.

  o **GPS locations:**

    1. N- 17.49.43.4; E- 101.33.09.6; EL = 225 m ASL.
    2. N- 17.49.06.5; E- 101.32.32.5; EL = 225 m ASL.
    3. N- 17.50.11.2; E- 101.32.51.6; EL = 230 m ASL.
    4. N- 17.49.44.9; E- 101.33.46.8; EL = 228 m ASL.
- **Purpose of usage:** For the resettlement of 28 households with 36 families comprising 155 people of which 73 are female from Ban Donsok, a Sub-village of Ban Phalad since 2008

- **Minimum Land area required:** The minimum land area for the resettlement of 36 families, the development of basic facilities and infrastructure and for cultivation is approximately 45 ha.

- **Size of available land:** According to the village authority report, the size of available land is 24 ha. The area can be expanded with the help of machinery up to 50 ha.

- **Topography of the area:** Flat or almost flat, undulating and hill slope at an elevation higher than 225 - 230 masl.

- **Availability of water source:** Water sources for housing and agriculture are from Houay Kaleuang (stream) which flows into the Mekong River about 2 km downstream of the main dam.

- **Soil fertility:** Moderately fertile. Some improvement may be required.

- **Land use and land cover:** Mostly perennial crop cultivation

- **Practicality of land:** Perennial crops, such as: maize and Job’s tears and vegetables.

- **Current land occupation:** The land has been allocated to government officials of district administration who have no land for agricultural practice and as an alternative income source. The current rate is 1,030,000 kip per hectare. The land ownership certificates have just been distributed. The land occupancy rate varies from 2 to 20 ha and totally accounts for 31.8 ha.

- **Opinions and requests of land occupants:** Current occupants accounted for 8 households have been interviewed and they agreed to allocate land for resettlement. Some asked for compensation in cash to start running family business. Most of them requested that the developer develop their remaining land and to receive benefits from the livelihood development
The Public Consultation meeting was carried out at Khoum or Ban Donsok on the 9th of January 2011. 27 household representatives participated in the discussion.

There are 3 optional sites proposed by the district and the APs: Boungkouang Area, Pongchok Area and Done Kouad Area. The first mentioned area has already been distributed to Sanakham District officials. The second area is appropriate for cultivation but not suitable for village establishment because it is situated in a remote location, around 60 km far from the district township. This area is located inside the District Protection Forest. Finally, the APs agreed to be resettled in the Done Kouad Area close to Houay Kalieng Area.

Their requests for compensation are:
- That lost rice fields be replaced plus land for perennial crops.
- To get agreement from the current land occupants to avoid conflict in land use.

Located along the main road connecting Sanakham and Kenthao Districts. The GOL has planned to upgrade the road as well as the ferryboat station and the parking area.
- Located along the main road to the dam site construction which the Sanakham HPP developer has planned to subgrade.
- Opportunity for a variety of new non land-based jobs for local people.
- Sanakham District Authority has planned to develop the Don Kouad Area to be a focal development zone and a new development township because it is located along the road that connects Kenthao-Sanakham-Vientiane Municipality

Minimum Land Area Required For Resettlement Site No. SD 1 Development
- Resettlement Site No. SD 1 Development: Houay Kalieng Area

- No. of Affected Families From Ban Donsok 36
- Population 155
Residential and Community Area:  
- Res Area (20 x 30 = 600 m² = 0.06 ha/FM) 2.16 ha
- Village office/Hall/Meeting room 1
  - Village Development Cluster Housing 0.5
- Temple or Recreation Place 1
- Secondary School 0
- Primary School (6 rooms) 1
- Market 0.5
- Bus Station 0.5
- Clinic/Healthcare Centre 1
- Main In-village road (6 m width) 0
- Small In-village road (4 m width) 1
- Reserved Land 1

Minimum Land Required in ha: 9.66
Agricultural Land (2 ha/family) 72
Total Land Required: 81.66

Figure 49: Proposed Site No. SD 1 – Done Kouad Area
8.3 SITE SELECTION CRITERIA

The criteria used for selecting the proposed relocation areas are as follows:

- The land be suitable for residential area development, suitable biophysical attributes, such as soil, topography, slope and drainage.
- The area be easily accessible and be connected with their existing village area, if possible, due to villagers’ preferences.
- Availability of year-round water supply for household consumption and usage;
- Access to forest and other legally exploitable natural resources should be as convenient as possible.
- A location relatively close to village infrastructure and facilities.
- the location should provide opportunities for relocating families to maintain their former livelihood activities such as small shops, services, or as the case may be.
- The sites fall in the planned development areas of the Socio-Economic Development Plan of the Village Administration.
8.4 RESettleMent SITE DEVELOPMENT

8.4.1 TOPOGRAPHY

The resettlement site must include adequate areas of flat or gently sloping land for house construction and, especially, for agricultural land development. The resettlement area must, as much as possible, be contiguous, to enable development of irrigation systems and associated structures. Slopes must be less than 25% to enable effective development of terraced farm land. Steeper slopes would require the movement of excessive amounts of top soil (to create terraces), uncovering infertile sub-soil horizons or even underlying parent material. In addition, the risk of soil erosion, particularly in the early years of terrace development before contour hedge rows are fully established, increases with steeper slopes.

8.4.2 LAND USE CLASSES

Agro-forestry practices to be applied will primarily depend on the slope of the terrain. Agriculture or forestry on overly steep slopes will lead to soil erosion and degradation of carrying capacity. The recommended practices for each slope class are therefore:

- 0–5%: Intensive agriculture, paddy, irrigation if possible;
- 5–12%: Annual cultivation, contour bunds and terraces established;
- 12–25%: Pasture and orchards;
- 25–35%: Tree crops, perennial plantation;
- 35–45%: Community Forest; and
- >45%: Protection forest.

Within all slope classes there should be minimum 10% of the area reserved for wildlife conservation and habitat protection (where possible).

8.4.3 WATER SUPPLY AND IRRIGATION POTENTIAL

The resettlement site will be provided with water supply systems for domestic use and agricultural irrigation. The water sources, types and designs of individual systems will vary according to local topography, distance from the nearby mountains, groundwater quality, water table types and depths, along with the preference of the resettled village population. A detailed topographic survey should be carried out at selected resettlement site. Systems will comprise of intakes, pump-stations, supply lines, header-tanks, distribution systems and on-farm irrigation structures.

Domestic supply will need to be of adequate quality and quantity to serve the needs of all households. Domestic water supply systems to be considered include rainwater storage, bore holes, lined dug wells, impoundment of small streams with or without treatment depending on water quality. Based on initial field inspection, water sources and supply
systems for domestic purposes appear to be sufficient at the proposed relocation site, but will be further assessed. Where required, groundwater surveys will be conducted. The domestic water supplies will be provided so as to cover both the relocated population as well as host population.

8.4.4 HOUSE PLOT AND AGRICULTURAL AREA

The house plot size of 20m x 30m will be allotted to each family at the new site. This size of land can be fitted with house area and livestock pen for cattle, pigs, goats and chickens. The yard area of around 0.02 ha or 10 m x 20 m can be used every day for multiple purposes such as vegetable plantations. The partially affected villages as well as the host population will make use of their current agricultural lands that are not expected to be inundated with the assistance of the project. Those who will lose their lands will get compensation at replacement value or get new lands as replacement within the village area.

8.4.5 HOUSING AND STRUCTURES

The house design is subject to agreement between the APs and the developer under the supervision of the Resettlement Committee. The elevated wooden house with cement column and metal sheet roof will be constructed for each household with size depending on the number of people in each family to replace the non permanent old ones or Housing Type 4. A standard area of 10 m2 will be assured for a family member. For better sanitation as before, a pour-flush latrine of appropriate size will be constructed to each household located behind the house. Within the house plot, the rice ban will be built to store the rice and other produces. The new houses at relocation sites will replace the old ones at replacement cost and with the preferences of the APs. There are 4 Housing Types or categories that have to be compensated.

8.4.6 COMMUNITY INFRASTRUCTURES

Basic infrastructure and supporting facilities will be constructed and arranged at each relocation site depending on the inventory of loss of community infrastructures and facilities. The replaced ones will be of high quality and standards. In other cases, the existing schools and infrastructures can be restored and upgraded to meet the national standards. These include appropriate size of school, health center, village office/community Hall and domestic water/electricity supply.

8.4.7 REPLACEMENT OF TEMPLES

The temples at risk will be replaced at the new site. Some structures made of wood can be dismantled especially the wooden pieces of temples which can be moved and reconstructed at the new site. Attention should be made to the moving Buddha images of the temple if existing. If the host community already has a temple, the allocated budget for construction a new one may go to restore or upgrade the existing temple. The religious and traditional
ceremony or compensation should be organized based on the consultation and participation of affected people.

8.4.8 VILLAGE LAYOUT

A consultative and participatory approach will be taken to plan a village layout, ensuring that local preferences are incorporated. The process will consist of two main steps:

- Development of village layout options through participatory planning for each relocation area
- Preparation of technical plans for preferred layout options.

The first step is entirely participatory and will be based largely on villager ideas and preferences (DWG and Village Facilitators).

Existing topographic maps and data have been used for preliminary relocation site selection, and for assessing and comparing the potential of each site. A detailed topographic survey covering residential and cultivated land will need to be undertaken at the proposed relocation site. Detailed maps (1:2,000 with 0.5 m contour intervals) will need to be produced to identify housing sites, and will also be the basis for layout and later titling of the individual farm plots. The completed maps will also be used for village layout and infrastructure planning, including the location of roads, houses, community structures and areas for future growth and for the detailed design of the both agricultural and domestic water supply systems.

The Scale 3-D models may also be used to experiment with the placement of specific features, such as houses, schools, farm plots and forest areas to enable villagers to explore different options and combinations in a visual, easily understood and realistic format.
There are only two types of village layouts to be developed at the resettlement cites, the “cluster type” and the “line type”. One of these types can be selected according to the shape and size of the site. For most areas, the most suitable type is the cluster.

Figure 51 shows the largest resettlement village that can accommodate a maximum of approximately 160-170 families. All community basic facilities, namely, school, health center, recreation and play ground, village administration office, residence, market and bus terminal will be located in the heart of the village surrounded by house plots. The farm areas are located around the main community.
8.5 DEVELOPMENT PROCESS IN NEW LAND

The committees (see section 11.3 organization set up) will finalize the size and boundary of the resettlement site together with current host village to avoid land use conflict. The village representatives from each side of the village boundary will join the delineation of the land marking. After finalization of the sites boundary of the new land, the development process will be as follows:

- Land use and capability assessment for each zone – These defined by slope gradient, soil type and native vegetation cover including the land use types such as rain fed farming, grazing, plantation and forest. The assessment indicator should be categorized into: suitable, moderately suitable, or unsuitable with suggested cost of development. The forest area within the radius of 5 km should be identified as potential sources of wood/NTFPs for the resettles.

- UXO Clearance - the proposed resettlement site have a low risk of encountering Unexploded Ordnances (Please refer to SIA report). During the field survey, there was no report about the UXO finding. Most of the site has been used for cultivation before. Nevertheless, Unexploded Ordnances (UXO) will be surveyed in all area for safety reason.

- Land occupancy census and survey with map of 1:2.000 - This will be done together with the host communities, and will document formal as well as informal land use. Future planning will be based on agreements between host communities and the resettled communities.

- Land certificate issuance – The land titles in the name of male or female heads of households should be officially performed in accordance with GOL procedures. A temporary land title is issued for 3 years to be followed by a permanent land title.

- Design and develop fishponds, gully stops and irrigation systems (if any) in some sites.

- Contour bund, deep rip and plant tree legumes on all cleared lands.

- Design and develop livestock shelters and planting of livestock forage.

- Detailed design and development of village layout with participation of the resettled and local authorities.

- Construction of new houses, school, health center and other supporting facilities such as domestic water and electricity supply.

- Moving households to new land.

- Installation of communal and agricultural fencing.
- Establishment of fast-growing tree plantations on land <35% slope, not required for arable agriculture or grazing.
- Re-establishment of social and economic system in the resettlement site.
- Implementation of livelihood restoration plan and SMMP.

### 8.6 HOST COMMUNITY ISSUE

#### 8.6.1 IDENTIFICATION OF HOST VILLAGE

In the resettlement site No. KD 3, the survey revealed 2 host villages, namely, Houay Lod (Kenthao District) and Dongsangouan (Pak Lay District), which are located adjacent to Dong Houay Ang Area along the Road No. 4 that connects Kenthao and Paklay District of Xayaboury Province. The same road also connects the North western part of Lao PDR with Thailand via Nam Heuang International Check Point. Living along the road with an opportunity to cultivate fertile soil in the Khoun Houa Nam Kay Area will bring advantages to the resettlers. However, potential conflict from sharing NTFPs in the area could disturb the harmony of the old and new communities. A profound study and understanding of the socio-economic conditions of the host communities are of great importance. The Public Consultation Meeting with the 2 host communities needs to be carried out to disseminate the project benefits especially to clarify what benefits the host communities will gain from the Mekong Sanakham HPP.

#### 8.6.2 SOCIO-ECONOMIC CONDITION OF HOST COMMUNITIES

**a) Demography**

As mentioned above, two villages, Houay Lod (Kenthao District) and Dongsangouan (Pak Lay District), are identified as host communities for resettlement site No. KD 3. The establishment of the resettlement site KD 3 site will affect these two villages both positively and negatively. The positive will be the better basic facilities such as paved roads, standard electricity and water supply systems, standard school and health center. But the negative impacts will relate to the sharing of existing resources by the project resettlers.
Houay Lod Village was established approximately 40 years ago. Official village registration was in 1958.

It has the population of 237 households comprising 1055 people, of whom 540 are female.

The village can be accessed via road no. 4 that links between Kenthao and Pak Lay districts centers.

Location of Houay Lod Village is 23 km from Kenthao District Town.

Donsangouan Village is located 23 km from Pak Lay to the north of Houay Lod Village. It was also established in the same period but in the Pak Lay District.

Donsangouan Village has the population of 201 households (comprising 458 people, of whom 209 are female).

For land transportation, the village is accessed by road no. 4, the same road that accesses Houay Lod Village.

![Image](image_url)

**Figure 52: Resettlement Site Houay Lod Village**

![Image](image_url)

**Figure 53: Resettlement Site Donsangouane Village**

### Table 35: Host Population at Resettlement Site KD 3

<table>
<thead>
<tr>
<th>No.</th>
<th>Village Name</th>
<th>HHs</th>
<th>Pop.</th>
<th>Female</th>
<th>Ethnicity</th>
<th>Distance from district town (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Houay Lod</td>
<td>237</td>
<td>1,055</td>
<td>540</td>
<td>Lao</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>Dongsangouan</td>
<td>201</td>
<td>458</td>
<td>209</td>
<td>Lao</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>438</strong></td>
<td><strong>1,512</strong></td>
<td><strong>749</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b) Ethnicity and Culture

The villagers at Houay Lod and Dongsangoun Villages are Lao in which the monastery and Buddhist temples are centres of cultural life. The most active festivals are Boun Phimai Lao or Lao New Year and Boun Bangfai or the Rocket Festival. Lao New Year is celebrated nationwide in mid April every year.

c) Infrastructure

These two villages are residing on both sides of road No. 4. This local unpaved road is difficult to travel during the rainy season. The two villages have year round water supply both from nearby natural streams and ground water. Electricity service in these two villages is available.

d) Education and Health

Each village has a primary school but with limited teaching personal and related facilities such as library, computers, and other supporting learning materials. No health center is found in these two villages. When people are severely ill they go to hospitals in Kenthao and in Pak Lay.

e) Land Resources Livelihood

Similar to the Sanakham upstream affected villages, the way of life of people at Houaylod and Dongsangoun is dominantly based on rice and maize farming. Livestock rearing (such as cattle, goats and poultry) is also an important livelihood in these two villages. Animal husbandry is a source of family cash income. When people need cash they will sell one or two of their cattle and goats.

Available NTFPs resources are observed at Khoun Houa Nam Kay forest reserve located to the north-west and south-west of Houaylod and Dongsangoun villages, respectively.

The local workforce is mostly employed in the farm. Some families have a trading business at markets in Kenthao.
9. LIVELIHOOD DEVELOPMENT MEASURES

9.1 INCOME RESTORATION AND SOCIAL IMPROVEMENT

Livelihood development programs are planned to correspond with other mitigating measures to help APs improve their life. All APs are entitled to get compensation for potentially lost assets, and are also entitled to receive assistance to maintain their life at the level equal to or better off than before the project development.

Each impact zone will have access to a typical livelihood restoration programme. The budget for that purpose has been detailed in a sequence of support activities in the extensive RAP implementation plan. The livelihood restoration and social development programmes are explained here as a global view of the packages.

Following the pre-construction period, the livelihood restoration plan covers a span of 5 years; 1 year construction period after moving into new resettlement area and 4 years after the project starts.

9.2 CRITERIA FOR INCOME RESTORATION

All families in a new community (those resettled or relocated and host families) are included in the livelihood restoration and development programmes. The project aims to shift people from a subsistence economy towards a market oriented economy. The following are potential and existing economic activities toward this aim.

a) Rain fed lowland/upland rice growing to secure family food.

b) Irrigated dry season rice growing in paddy fields.

c) Maize and other crops production for consumption and for cash.

d) Vegetable gardening either around the house or as planting on in fixed beds on river banks with residual humidity and highly soil fertility or in paddy fields during the dry season with water and organic matter supply to the parcels.

e) Fruit trees, either around the house or orchards.

f) Forest-related resources:

- Possibly timber for housing.
- Firewood collection for family consumption and for cash.
- Charcoal mainly for cash.
- NTFPs collection: bamboo, rattan, and other resins, edible tree leaves, i.e., vegetables, fruits, mushrooms, medicinal plants.
g) Aquatic resource use and sale:

- Seasonal fishing for consumption making fermented sauce and sale.
- Opportunistic fishing and trapping when releasing water from paddy fields at the of end of rainy season.
- Regular fishing, especially by women for small fish and shrimp as supplementary family food.
- Collection of seasonal bigger shrimps, frogs, shellfish.
- Collection of aquatic plants, especially, spirogyra (algae) to make dry sheets, and other water-green plants like cruciferous specie consuming as salad.

h) Livestock Raising:

- Large animals including buffalo, cattle, pigs, and goats
- Poultry such as chickens, ducks, and turkeys

i) Money earning activities:

- Providing paid labour for rice planting, rice harvesting contraction work, transportation.
- Small shops, and agro forestry products.
- Handicraft production such as weaving, tailoring, basketry, roofing materials, jewel ring, art and sculpture works
- Paid employment (government offices, hotels and guesthouses)

### 9.3 INCOME RESTORATION PROGRAMS

Mekong Sanakham HPP adopts the strategy of ensuring that the resettled families and host village families are enabled to improve their living conditions and their standard of living by the development of a range of livelihood opportunities. A number of enterprises have been identified, based upon: (a) an evaluation of the natural resources; (b) recognition of the socio-economic and cultural background of the people and the economic environment in which they will be operating; and (c) on-going consultations with the villagers.

As per the above, resettlers can choose from a range of livelihoods that can be summarized into 5 livelihood option as follows:

1) Agriculture: wet and dry season cropping with some portion of the land irrigated from nearby rivers.

2) Livestock: Livestock raising on a mixture of feed-crops or forages possibly grown on the irrigated areas, and free range grazing.

3) Community or private plantations, including management and harvest of NTFPs in community forest, plantation land with a mixture of fast growing
industrial species and slower growing but valuable native species plus NTFPs.

4) Aquaculture: community fisheries at the reservoir and individual household fish ponds. For farmers who have paddy fields the rice-fish system (simple enhancements to increase the natural productivity of fish in paddy fields) will be introduced and promoted.

5) Non-farm employment and cottage industry: waged or self-employment in a range of activities such as small shops, repair and fabrication shops, handicrafts, primary produce trading and construction labour.

The resettlers will be assisted and supported in their efforts to adopt several or all of the above livelihoods, the actual adoption being dependent on (a) the wishes and inclination of any particular family, and (b) the labour and other resources (over and above those resources provided by the project) available to any particular family.

Having a variety of potential components for the livelihood model is important, as it allows for adaptation to local conditions, enables families to make choices, provides diversity of cropping regimes and offers variety to the market. From the point of view of a resettling family, the key considerations in choice and adoption of livelihood activities will depend on factors such as:

- Family size and composition dictates the amounts of labour available as well as basic food and income requirements.
- Experience to date in any of the livelihood activities.
- Employment skills.

**Methods to Improve Livestock Rearing**

Livestock ownership is the key savings for family. Livestock is the most important asset for rural families, providing a critical reserve against emergent needs from ill health and crop failures. Some families plan to use savings for rebuilding or repairing houses and for ceremonies such as wedding. The savings help families for purchasing clothes, learning materials and bicycles for children cycling to school. Some families with large number of animals can afford motorcycle and hand tractor of multiple utilization: transportation of agricultural products from the fields to the house and from the house to the district markets. This helps improve their livelihood. The animal yields direct benefits in the form of food and can raise farm productivity by providing fertilizer and drought power.

The benefits from livestock can even extend to those who do not own livestock often the poorest members of the community. Non-owners are sometimes able to obtain manure for fertilizer, free of charge or at discounted rates, or borrow the beasts to develop new paddy fields. The role of livestock in rural Lao communities extends significantly beyond their economic value; it plays an important role in social and cultural relationships - loans and
gifts of livestock contribute to family and community ties and often play a central role in cultural traditions such as weeding, funerals, rituals, and receptions.

**Methods to Improve the Contribution of Livestock**

The resettled communities will be able to take their livestock with them. They will lose access to their previous grazing land and water supplies, unless the new village site is close to the old village. Any structures related to livestock rearing will be constructed. In addition, the project will provide basic training in animal vaccination and disease diagnosis, prevention and control. Improved genetics materials of grasses and legumes should also be promoted.

There will be a need to improve the feed supplies since the stocking rate will increase pressure on available grazing land. Introduction of new forage species is important for intensifying livestock production. Each family will be provided with 0.3 hectare of forage plot. In addition to this plot, interested farmers could use paddy land or terrace land for forage production, possibly with supplemental irrigation. The following types are examples of suitable forage varieties:

- **Marandu**: A tall grass that is suitable for cutting and grows well on moderately fertile, acid soils. It stays green into the dry season.
- **Mulato**: Lush grass producing very high year round production with high palatability in large range of soil pH. It requires fertility for high yields.
- **Simuang**: A tall grass suitable for cutting that produces high quality feed. It is generally suited to more fertile soils and must be fertilized regularly to maintain high productivity.
- **Stylo**: Perennial legume that grows on low fertility and acid soils and produces high protein food for cutting.
- **Cassava**: grows in many soil types and produces high yields of leaf and tuber.

The table below shows projected annual yield of forage for different products. The forage production is assumed to be used for cattle feeding only so the price of produced forage is not calculated. Households that do not have large livestock may produce forage for selling.

**Table 36: Indicative Annual Yield for Forage Production**

<table>
<thead>
<tr>
<th>Product</th>
<th>Estimated Dry Matter Yield per (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forage Grass irrigated land</td>
<td>30,000</td>
</tr>
<tr>
<td>Forage Grass rain fed land</td>
<td>10,000</td>
</tr>
<tr>
<td>Forage Legumes rain fed land</td>
<td>3,000</td>
</tr>
</tbody>
</table>

Forage production from 0.5 hectare in combination with controlled grazing in nearby fenced areas is projected to be sufficient for a household to raise two cattle equivalents. Forage conservation through drying and ensiling will need to be practiced to provide sufficient livestock feed for year round weight gains to be achieved. Livestock raising options
other than ruminants such as pigs and poultry are also feasible with feeding of produce from the forage plots, agricultural fields and household scraps. In addition to improved feeding, all livestock systems will benefit from introduction of improved breeding stock and veterinary care.

**Methods to Improve the Contribution of Staple Food Crop**

In regard to moving a village, the best time is after the harvest period, especially in the dry season, lest villagers lose a harvest. All sites selected as potential locations for resettlement should have land suitable for irrigated paddy, and in some cases for rice terraces and other staple food crops. The project will ensure that rice terraces and growing areas are cleared, prepared and provided with irrigation before people move.

Potential paddy field crops include:

- **Cereal Crops**: Irrigated Paddy (restricted to where it can be proven to be economic), Upland Rice and Maize.
- **Legumes**: Black Beans, Mung Beans, Peanuts and Soybeans.
- **Vegetables**: Cabbage, Broccoli, Chilli, Eggplant, Tomatoes, Cucumber, Onion and Garlic.
- **Fruits**: Water Melon, Pumpkin, Cantaloupe.

Training on how to manage irrigation water system maintenance and repairs will be provided to ensure efficiency and sustainability.

It should be noted that use of the hybrid high yielding flint corn varieties already adopted in some northern Lao provinces as cash crops requires training of farmers.

**Methods to Improve the Contribution of Gardens and Fruit Trees**

With secured water supplies, resettlement sites would have land suitable for gardens and orchards. The project proponent will provide funds to recreate orchards and compensate for the number of years of lost tree production. The project will support the introduction and expansion of integrated cropping. For example, long term producing fruit trees can be under planted with short term producing vegetables. Cash cropping will be supported where land is available. The whole agricultural process from land preparation, seeds and planting through to harvest, storage, processing and marketing will be financially and technically supported.

**Methods to Improve Community Forest activities and Plantations**

All selected resettlement sites have forests nearby. Newly resettled people will be guaranteed access to these, after negotiation with the host populations over sharing of the
resources. Compensation will also be in the form of enhanced community forest production through plantations and NTFP gardens.

The project will allocate a budget to support the DAFO in developing the production forest which will be managed by the community. In this production forest, NTFP-gardens will be established to be used for intensified production of some selected forest products. The establishment of plantations and gardens is essential to decrease the pressure on the community forest area. NTFP gardens will involve setting up nurseries for propagation and enhanced production systems for key species of economic importance.

In order to reduce the use of firewood, simple low smoke stoves to families will be introduced; these contain the fire, use less wood and provide greater and more directed heat and reduce threats to family health and house fire hazards.

**Non-farm Activities Related to Employment with the Sanakham HPP Project**

The project will construction and associated work could provide some employment to the APs during the period up to the project operation. There are potential employment options in transportation, services, trading and other entrepreneurial activities which will require a variety of skilled, semi-skilled and unskilled labour. However, not all of these opportunities will be fully available to the resettled population since many may not have the necessary skills or time to exploit these opportunities.

The project will work together with the resettled population and will strive to identify types of work that are suitable for the villages based on their current capability and experience. In some cases, skills training will be provided.

**9.4 INCOME TARGETS FOR RESETTLED**

The Income target should apply to all the APs that are entitled to livelihood restoration assistance. The intention of setting income targets is to establish monitoring benchmarks, which are minimum levels of income that shall be used to monitor the progress of livelihood improvement activities. The income target shall also function as a criterion or measure of the restoration of livelihoods to better than pre-project conditions. This means that a resettled family reaches a sufficient income to provide food, clothing, medication, education, recreation, taxes and savings in an adequate and secure manner.

The Lao Poverty Line is US$ 0.75 per person per day or LAK 6000 per person per day. The UN Poverty Line is US$ 1.25 per person per day or LAK 12,000 per person per day. This means that to surpass the Lao Poverty Line, people should have income more than LAK 6,000 per person per day. The Millennium Development Goal of the Lao PDR on poverty reduction has set the income target of US$ 900.0 per person per year with the aim of getting the Lao PDR off the list of Least Developed Countries by the year 2020. This means that around US$ 2.5 per day has been targeted for each person by the end of the year 2020. It is to be noted that the income of US$ 2.5 per day per person is
equivalent to LAK 20,000 which is the current minimum labour rate per day of an unskilled worker of Lao PDR that the GoL has been endorsed.

To the end of the transition period of 5 years, Mekong Sanakham HPP sets up the income target for the resettled families at US 450 $/person/year which means around US$ 1.25 per person per day which will help the affected by the project people to have sustainable livelihoods and income earning means.

9.5 SUGGESTED STEPS IN INCOME RESTORATION PROGRAM

In planning the income restoration during the 5 years of transition period after resettlement, the target at the minimum of US $1.25 person/day is recommended. To achieve this, it may employ the following process:

In planning income restoration, the following processes may be considered:

- Analyze economic activities of all APs by gender, age group, education, skills, income, family size, preference options to assess their needs.
- Identity multiple income restoration programs (both individual and group specific) through beneficiary consultation and through market and financial feasibility and analysis.
- Test training and income generating programs with selected resettled families on a trial basis.
- Develop a framework for institutional supervision and budgets.
- Allow for product marketing within and outside the relocation/resettlement sites.
- Evaluate programs and provide additional technical assistance.
- Income restoration programs may require support and services for 5 to 8 years before they become viable. The project management may need to implement both short and long term strategies for restoring their income. Short term income restoration strategies are for immediate assistance during relocation and may include:
  - Compensation for land, structure, and all other lost assets paid in full before relocation.
  - House construction grants and relocation subsistence allowances are paid to cover the full duration of the period of disruption and reestablishment.
  - Free transport or costs of removal and reestablishment for relocation.
  - Subsidize inputs for agriculture, livestock rearing, fisheries and forestry/NTFPs production for the first two or three years or until income levels are restored.
  - Temporary or short term employment in civil construction activities at the resettlement or project construction sites.
  - Special assistance, as appropriate, to vulnerable groups such as women, indigenous people, the aged and the disabled.
Long term income restoration strategies involve land and non-land based economic activities that will provide a sustained source of income over a longer period of time, which will enable restoration, or better - improvement in standard of living of resettlers/relocatees. These strategies may consist of both project sponsored programs (for example, purchase of replacement land, employment, treeing and various inputs for income generation) and establishing linkages to local or national economic development and employment programs in the project area.

9.6 GENDER AND VULNERABLE GROUP ISSUES

As there are a number of gender and vulnerable people in the villages to be moved to the resettlement sites, and within the territory of original villages, the following recommendations will be taken into the formulation of livelihood restoration plan.

Establish effective communications with affected individuals, households and stakeholder groups throughout the resettlement process, in particular, those who are identified as gender and vulnerable groups.

- Develop special measures for resettlers/relocatees who are disadvantaged in terms of income generation and employment.
- Consult women and women’s groups and establish women-centered income generation activities.
- Involve gender and vulnerable groups and other organization in income restoration planning and mutation.
- Poor and vulnerable households will be given extra training and assistance to ensure that they can access the less labour intensive activities and that they are carried out in an efficient and sustainable manner.
10.  PUBLIC PARTICIPATION AND GRIEVANCE PROCEDURES

10.1 IMPORTANCE OF PARTICIPATION AND GRIEVANCE REDRESS

There are many stakeholders and social groups involved in planning and implementing the RAP. These have been listed in Section 10.2.3. Effective resettlement planning needs regular consultation with a wide range of project stakeholders. Stakeholders include any individual or group affected by, or that believes it is affected by the project positively or negatively, including the host community. A top priority is that APs who need to move participate in the process of their resettlement or relocation.

In Lao PDR, as required by the 2010 ESIA Decree, public participation needs to be conducted over the course of the SIA. The public participation aims to introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns. The purpose is to incorporate stakeholder concerns and local knowledge in the design and execution of the project, and avoid/reduce potential conflicts to the possible extent. This approach fosters stakeholders’ engagement and contribution to the project, enhances its acceptability and encourages realistic expectations as to what the project will deliver to them.

Resettlement inevitably gives rise to grievances among the affected population over issues ranging from rates of compensation and eligibility criteria to the location of resettlement sites and the quality of services at those sites. Some complaints and dissatisfaction may arise. The grievance channels are therefore necessary.

10.2 PUBLIC PARTICIPATION PROCESS

10.2.1 GENERAL

Public involvement for hydroelectric power projects in Lao PDR is usually initiated at the village level, and then proceeds with consultation meetings at the district, provincial and national levels. The project consultants in cooperation with the project developers are responsible for all consultation meetings, including all expenditure such as transportation of participants, accommodation, and payment for those attending the meeting. The Mekong Sanakham study team has conducted consultation meetings in each village during the ESIA process.

10.2.2 OBJECTIVE & SCOPE OF PUBLIC PARTICIPATION

The main purposes of consultation are to introduce the proposed project to stakeholders, inform them as it develops, and identify their views and concerns. This approach fosters stakeholders’ engagement and contribution to the project, enhances its acceptability and encourages realistic expectations as to what the project will deliver to them.
The consultation program aims to:

- Identify problems, concerns and needs.
- Inform stakeholders about the project.
- Obtain feedback.
- Learn from local knowledge and understanding.
- Evaluate alternatives.
- Promote ownership and enhance social acceptability.
- Avoid or resolve conflicts.
- Demonstrate commitment of the project proponent in addressing issues raised during consultations.

Scope of consultation will focus on four main components:

- Information Collection - involving collecting information on the environmental and social baseline conditions of the study area to determine key sensitive receptors.
- Information Dissemination - involving disclosure of information about the intended activity, project objectives and their outcomes in order to enable meaningful consultation.
- Consultation - involving an interactive, two-way flow of information, views and ideas between stakeholders and the project proponent, China Datang Overseas Investment Company.
- Participation-defined as a voluntary process in which stakeholders as project proponents come together to share, negotiate and control the decision-making process in project design and management. It builds on the consultation component.

The consultation process will involve, but will not be limited to:

1) Formal meetings with government authorities, institutions, individuals, specialists and any NGOs identified.

2) Meetings with local leaders, community representatives (village committees or councils).

3) Household survey questionnaires, aimed at the local population within the project area. The survey questionnaires are a fundamental component of both the RAP and the SIA as they provide the basis for identifying impacts and developing management and mitigation measures that are specific to the local conditions.
10.2.3 IDENTIFICATION OF KEY STAKEHOLDERS

a) Central GOL Bodies

The central government concerning hydroelectric power development can be listed as follows:

- Lao’s National Mekong River Commission
- Water Resources and Environment Administration
- Ministry of Energy and Mines
- Ministry of Agriculture and Forestry
- Ministry of Planning and Investment
- Ministry of Finances
- Ministry of Health
- Ministry of Labour and Social Welfare
- Ministry of Information and Culture
- National Land Management Administration
- Any other relevant departments identified in consultation with Datang/NCG

b) Provincial/District GOL

Similar to those at the national level, the provincial and district administration and related key authorities include:

- Provincial/District Cabinet Offices
- Provincial/District Energy and Mines Offices
- Provincial Water Resources and Environment Office
- District Environment and Land Offices
- Provincial/District Agriculture and Forestry Offices
- Provincial/District Planning and Investment Offices
- Provincial/District Health Offices
- Provincial/District Labour and Social Welfare Offices
• Provincial/District Information and Culture Offices.

c) Village Leaders and Affected Persons

• Key village informants, including village teachers, village elders, spiritual leaders and health-care workers.

• Directly and indirectly affected families in project area.

• Gender and vulnerable groups (including ethnic minority group).

• Key village interest groups including landowners, land users, identified vulnerable groups, guardians of cultural and spiritual sites etc

d) Non Government Organisations

• Lao Women’s Union

• Lao National Front

• Lao Front for National Construction

• Lao Youth Association

• Other NGOs as listed in Appendix 2 depending on final selection of Datang/ NCG and Provincial/District Government.

10.2.4 CONSULTATION WITH GOL PROVINCIAL & DISTRICT AUTHORITIES

Consultation with GOL stakeholders will involve a series of formal meetings and discussions. The purpose of the interviews at national, provincial and district levels will be to inform the stakeholders of the proposed project, to discuss the associated environmental, social and resettlement issues as well as to gather any relevant secondary data. The consultations with district and provincial stakeholders will also freely discuss the most practical and feasible mitigation measures of negative impacts. It is expected the majority of these interviews will be undertaken by NCG and the local consultant team. Consultation at these levels is an important step in the protocol of working in the local area. It is a courtesy to inform the relevant government bodies and leaders of the intention to conduct surveys and interviews in the Sanakham, Kenthao, and Pak Lay districts.

The consultations/meetings will take the form of semi-structured interviews in which a short presentation about Datang and the purpose of the EIA, SIA and RAP tasks. This will be followed by discussion about the role and responsibilities of government offices in general; their specific role in relation to the Sanakham HPP; any requirements in relation to construction and operation of the project; opinions about the positive and negative impacts of project and suggestions for Datang and NCG. A series of such meetings are envisaged with the central and provincial line departments, agencies, MONRE etc. During these
meetings, the key issues and concerns raised by the stakeholders will be recorded for inclusion in the RAP, SIA and SMMP.

10.2.5 CONSULTATION WITH VILLAGES & LOCAL COMMUNITIES

a) Objectives

Consultation with members of the communities in the vicinity of the project area are undertaken through village meetings, interviews with representatives of the local villages and as part of the household surveys. The survey is used to develop a baseline socio-economic profile of the local communities and assess the level of awareness of the project, concerns and expectations of the project. Individual household interviewees, social dialogues were used to document the profile of communities, the range and extent of impacts both at the household and community level. Specifically the village level consultations will be held for the following purposes:

- Gather information on the profile of the community and the possible social impacts of the project on community structure, local resources and livelihood patterns. A specific “focus group” was also conducted on cultural and archaeological sites in Houay Lah Village

- Assess the scale of resettlement, loss of assets and livelihood (individual and community) and explore options for the most suitable livelihood restoration and asset replacement measures, including resettlement site options.

- Identify key environmental concerns of the communities, especially related to diversion of water, impacts on land use, and construction activities.

Figure 54: Consultation on Relocation Issues at Ban Donsok
b) **Work Accomplished**

To date, information disclosure and consultation meetings were accomplished in 43-villages (Table below). All village leaders, villager’s representative (including women and vulnerable groups) were informed about the project and were consulted on resettlement sites with their comments and suggestions on the resettlement and livelihood development programs for the village.

<table>
<thead>
<tr>
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<th>d/s</th>
<th>c/q</th>
<th>LB</th>
<th>RB</th>
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### Xayaboury Province

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c) Results of Consultations

Feedback was obtained from the consultation of three severely affected villages i.e B. Donsok, Houay Lah and Khae and one partially affected village i.e. B. Donmen. For Ban Donmen, since the number of families to be relocated is up to 120 and the land to be compensated for agricultural purpose is limited, the special consultation has been carried out to get opinions and suggestions from all the affected families. The list below is a summary of comments from villagers that require resettlement due to the project development.

Donmen Village:

- Villagers of Donmen and their leaders agreed that if they have to relocate/resettle, they wish to be put in the place called Dong Houay Ang and Koum HouaNam Kay, which is a well-known place and suitable for settling down. The place is on the west side of Khae village about 15 km away from Donmen. The place is connected to Houaylod Dongsangouan villages which are located close to the border of Pak Lay District along the road number 04.

- For the resettlement, they shall follow with the plan but request that compensation should take place in accordance to the loss of property. Being resettled may be acceptable as long as they have agricultural land and other facilities which will support their lives. The ability to produce rice and keep livestock are keys for them, otherwise, why relocate? At least they have to produce, at the minimum, to the current level or if they can produce more it it will even be better (similar comments and requests from Khae village).

Traditional ceremonies have to be arranged before moving which may at least include 2 buffaloes and other necessary items.

Khae Village

- Villagers of Khae Village and their leaders agreed that if they had to resettled, they wish to select Donghouay Ang and Koum Houanamkay, which is a well-known place and suitable to live. The place is on the west side of Khae village about 18-20
kilometers away. The place is connected to Houaylod and Dongsangouan villages which are close to the border of Pak Lay District, along the road number 04.

- For the resettlement, they will follow the plan but request that compensation should take place in accordance to the loss of property. Agricultural land and other facilities which will support lives are required. The ability to produce rice and keep livestock are keys for them, otherwise, why move? At least they wish to produce no less than the current level or more would be better.

Ban Khae does not need to hold any traditional resettlement ceremonies. The most important thing is to improve their livelihoods.

**Donsok Village**

- If the project is approved, Donsok villagers and their leaders will have to rely on the government or the project developer to find a suitable place for resettlement because they cannot think of a best place to move to.
- They would like to make a request though, stating that compensation should go to all villagers who have property including outsiders (people who do not live in Ban Donsok) whose properties are affected.
- When moving to a new place, they would like to request that the project has to build houses for them and at least including 1 hectares of farming land for each family. They would also need a new school, market, road, healthcare center, clean water and a temple.
- After being resettled, they would like to be looked after for at least 3-5 years.

Some additional recommendations/suggestions for resettlement ceremonies:

- Relocation of a temple requires nothing since there are no monk in our current temple
- Ceremony required to be arranged for moving village’s cemetery.
- Ceremony is required due to moving the respected village spiritual forest that may include a buffalo, 28 bottles of traditional Lao-Lao whiskey, etc.

**Houay Lah Village**

The Public Consultation meeting on the feasible resettlement site for Ban Houay Lah APs was launched on the 10th of January 2011. There were 66 people who attended the meeting of which 20 were female. There were 3 proposed sites: 1. Upper part of current location of the village – 6 ha; 2. Houay Lah originating area – 10 ha; and 3. Houay Mouang Area – 6 ha. The Site investigation team was composed of 9 participants: 6 representatives of Ban Houay Lah, a representative of Kenthao District Authority and 2 specialists from NCG Company.
They accepted Houay Mouang Area for the feasible site for resettlement due to its proximity to current village location and they can continue to make use of land that will not be inundated.

They requested the project developer to provide fair compensation to land and assets lost based on Decree No. 192 of the PM dated in July 2005 and to assist in expanding land for agriculture for those who will lose agriculture land.

The project should provide all the necessary infrastructure to new village, especially to built the road to connect Ban Veunkham of Kenethao District.

The project should assist in making them better-of by providing all the necessary livelihood development programmes.

Current occupants from 3 host households participated in the site investigation. They agreed to allocate land for the new resettlers. They asked for compensation in cash to start running family business and requested the developer develop their remaining land and receive benefits from the livelihood development program.

10.3 GRIEVANCE PROCEDURE

The grievance redress mechanism and process proposed for the Mekong Sanakham HPP includes three steps as discussed below:

- **Step 1** – At the village level, a householder or group of householders can approach the Village Resettlement and Development Committees (VRDC) through the village chief and present the grievance. The grievance is initially considered at the lowest level of the resettlement hierarchy. The issues can be resolved through discussions and mediation. If at the village level the grievance cannot be resolved or if the claimants are not satisfied with the decision, the next step can be used – either by the claimants or the village committee on behalf of the claimants.

- **Step 2** – At the district level – the official Grievance Redress Committee (GRC) must ensure that the claims are reviewed within the context of the existing policy, regulations procedures and entitlement limits. The committee has 15 days to resolve and respond to the claimant’s grievance in terms of the activities to be undertaken. But if the grievance is still not satisfactorily resolved, the developer company must urgently attend to the matter before it reaches the Provincial Court.

- **Step 3** – At the Provincial Court, the justice authority at the district is consulted to clarify and resolve the problem.
Figure 55: Proposed Grievance Redress Procedure for Mekong Sanakham HPP
11. ORGANIZATION SET-UP

11.1 KEY PURPOSE

Similar to environmental management and monitoring tasks, the social and resettlement units/offices are required to be set up aiming to mitigate negative impacts and enhance positive impacts. These include the GOL’s Social/Resettlement Management Unit (SMU), and the company’s Social/Resettlement Management Office (SMO). The SMO will have the main sections on relocation and resettlement coordination.

11.2 IDENTIFICATION OF CONCERNED AGENCIES

Concerned agencies/parties in the implementation of RAP consist of GOL bodies, the project developer, and consultants. The government body will need to set up Committees for concerned provinces, districts and villages. While the project developer and related parties will involve the establishment of the social and resettlement management office. It also needs to recruit social and resettlement consultants to assist in resettlement implementation, monitoring and evaluation.

Based on the SIA study and discussions with local administrators, there are many agencies concerned with relocation and resettlement implementation. These include:

- Vientiane Provincial Authorities
- Xayabouy Provincial Authorities
- Sanakham District Authorities
- Kenthao District Authorities
- Paklay District Authorities
- 13 Affected Villages Authorities
- National Land Management Authority
- Ministry of Agriculture and Forestry
- Ministry of Health
- Ministry of Information and Culture
- Ministry of Public Works and Transport
- Lao Women’s Union
- Lao Front for National Construction
- Representative of project developer
- Project consultants
- Representative of NGOs (if any)
11.3 PROPOSED ORGANIZATION STRUCTURE FOR RAP IMPLEMENTATION

For the development of the project required population resettlement, the social organizations for central, provincial, district and village levels need to be established. The diagram below presents the proposed social organizations for implementation of the RAP.

Figure 56: Proposed Organization Set-up for Mekong Sanakham HPP

11.3.1 GOL ORGANISATION

The management outcome of the social issues, namely, resettling/relocating affected people, compensation of loss assets and other public administration aspects will be within the provincial government directives.

For this project, six organizational levels should include:

- (8) Provincial Resettlement Committee (PRC)
- (9) Resettlement Coordination Unit (RCU)
- (10) District Resettlement Committee (DRC)
- (11) Village Resettlement and Development Committees (VRDCs)
- (12) Grievance Redress Committee (GRC)
- (13) Environment and Social Monitoring Unit (ESMU) under GOL/MONRE.

The proposed organizations of GOL bodies above are preliminary. The structure is subject to further adjustment as may be indicated due to government reorganization.
11.3.1.1 PROVINCIA RESETTLEMENT COMMITTEE (PRC)

The PRC will be appointed by the Provincial Governor to oversee all GOL activities and commitments, and liaise with all relevant ministries and organizations, including the highest levels of government.

The PRC will have the following members:

- Vice Governor of Province, Chairperson.
- District Governors, members.
  - Chief of Provincial Administration Office, member
- Heads of relevant provincial or district line departments, members
  - Head of Provincial Water Resources and Environment Office, member
- Government Liaison Officer responsible for Project Coordination
  - Representative of Company, member.

The PRC will be responsible for:

a) Implementation of GOL social obligations

b) Review and comment on the detailed plan for the implementation of the Social Development Plan for the project

c) Witnessing handover of housing, land, community facilities and infrastructure

d) Reviewing and commenting on livelihood restoration programs

e) Liaising with GOL organizations at national, provincial and district levels, including the allocation of roles and responsibilities of the different GOL agencies at the provincial level

f) Liaising with the Company regarding GOL concerns and priorities

g) Prepare work plan and budget for their functioning

h) Guide provincial and district line agencies in terms of policy and technical aspects and set up regular meetings to monitor the progress of work or according to the actual work

i) Formulate policies guideline or a framework to prevent any problems that may occur in the implementation stage
j) Investigate, consult, consider and resolve the potential problems on compensation and resettlement related to various local government agencies

k) Approval of Financial Management Regulations for the management of compensation payments and livelihood programs

l) To assign staff from the Relevant District Land and Taxation Office to be a member of ad hoc Task Teams set up by the company in order to:

   o Conduct asset surveys for the loss of land and production in relation to Project Construction Lands as a joint member of ad hoc Task Teams;
   o Conduct asset surveys for the loss of immovable assets for resettlers as joint member of ad hoc task teams
   o Calculate production losses in project-impacted areas;
   o Determine payments of interim and full compensation to AHs.

11.3.1.2 RESettlement CoORDINATiON UNIT (RCU)

The RCU will have the following members:

   o RCU Manager appointed by the PRC
   o Representative from provincial government to oversee coordination of GOL agencies
   o Support staff to be located at the District Project Offices where project reports and documents are kept for public viewing.

The role of the RCU will be to provide coordination for GOL organizations involved in the various implementation activities of the project. The responsibilities of the RCU are as follows:

a) Act as secretariat of PRC
b) Develop Financial Management Regulations for the management of compensation payments and livelihood programs
c) Coordination of all GOL organizations and ensuring the priorities of the PRC are addressed
d) Coordination with DRCs, VRDCs, ESMU and the Company in relation to the implementation of RAP and livelihood programs
e) Ensuring that GOL policies, procedures and regulations are being followed in the day-to-day management of GOL involvement in implementation
f) Organizing GOL involvement in carrying out resettlement activities, such as consultations and livelihood restoration programs and participation in ad hoc Task Teams established by the Company
g) Assist with organization of Provincial and District level meetings and consultations
h) Coordinate the resolution of issues which arise among the various Government Authorities and the Company relating to social measures

i) Following the provision of any required input from the RO responding to any public comments, complaints and inquiries in relation to social measures

j) Participation in grievance procedure.

**11.3.1.3 DISTRICT RESettlement COMMITTEE (DRC)**

There will be three DRCs (Sanakham, Paklay and Kenthao) to be set up and appointed by the PRC. Each DRC will comprise the following members:

a) District Governor, Chairperson

b) Heads of relevant district line units, members.

The DRC will be responsible for:

a) Implementation of GOL social obligations in the concerned districts (Sanakham, Paklay, and Kenthao)

b) Review and comment on the detailed plan for the implementation of the RAP within the concerned districts

c) Reviewing and commenting on livelihood restoration programs of the concerned districts

d) Establishing VRDC

e) Liaising with GOL organizations at district levels in terms of implementation and monitoring of the social mitigation and development measures

f) Prepare a work plan and budget for their functioning

g) Guide the VRDC in terms of policy and technical aspects and set up regular meeting to monitor the progress of work or according to the actual work

h) Upon request from the PRC investigate, consult, consider and resolve the potential problems on compensation and resettlement related to various local government agencies

i) In collaboration with the Company, deliver compensation payments to APs in accordance with the agreed entitlements

j) Accounting for funds provided by Company in accordance with Financial Management Regulations approved by PRC

k) Ensuring that the concerns of each relevant sector and affected villages are taken into account and addressed in the detailed plan for the implementation of the RAP

l) Participate in grievance procedures, including reassessments of claims and ongoing dialogue with AHs as required.
11.3.1.4 VILLAGE RESETTLEMENT AND DEVELOPMENT COMMITTEES (VRDCS)

The DRC will appoint a VRDC in each impacted village. The VRDCs will represent the range of interests and opinions in the village and will facilitate consensus decision-making at the village level.

The VRDCs will consist of:

- Village authorities
- Village Elder representative
- Lao Women’s Union member
- Other skilled or influential members of the community
  Representatives of all ethnic groups, either in the above positions or in separate positions
- At least two women must be members of each VDC.

The VRDCs will be responsible for:

a) Representing the interests and voicing the concerns of villagers in project affected areas
b) In collaboration with the RO and RCU, conduct public consultations at the village level
c) Coordination of mass organizations in the village
d) Participate in the preparation of Village Development Plans to be developed by the RO
e) Monitoring and evaluating of the compensation process at the village level
f) Organizing villagers for implementation of activities relating to relocation and livelihood restoration
g) Facilitate participation in the grievance procedures.

11.3.1.5 GRIEVANCE REDRESS COMMITTEE (GRC)

The PRC in consultation with appropriate authorities will establish the Grievance Redress Committee (GRC) to address any complaints and grievances pertaining to land acquisition, compensation and resettlement that are brought forward by APs. The GRC will comprise the following members:

- representative of the district authority
- Village headman
- Representative of APs
- Representative from mass organization e.g. LWU, elder council
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11.3.1.6 THE ENVIRONMENTAL SOCIAL MONITORING AND INSPECTION UNIT (ESMI)

Since the GOL monitoring task is considered very important, the MONRE will establish an Environmental/Social Monitoring and Inspection Unit (ESMI) within its routine organization. The ESMI shall be under the direction of MONRE to monitor and inspect the compliance of the environmental and social measures of the GOL and the company. The ESMI’s responsibilities in terms of monitoring and inspection of environmental and social measures shall be addressed in the Concession Agreement (CA). The ESMI will have the following responsibilities:

1) Assisting GOL with reviewing the EMMP and SMMP and any revisions or detailed plans thereof.
2) Conduct and monitor field inspections of the social measures of the Company and the GOL with respect to their compliance with the environmental and social obligations of the Company and the GOL.
3) Assisting GOL with
   a) Issuing instructions to the company regarding compliance with social obligations according to the law of the Lao PDR
   b) Issuing non-compliance notifications/enforcement notices to the company
   c) Solving problems for the company in cases of non-compliance.
4) Advising relevant government authorities on the adequacy of proposed social measures and recommending amendments according to findings from project monitoring.
5) Periodic reporting on the performance of the environmental and social measures, including the performance of the financial aspects of the environmental and social measures.
6) Developing and updating work schedules for the monitoring and inspections of the ESMU.
7) Managing its financial and manpower resources.
8) Procuring technical assistance or other services or goods, including
   a) Assist GOL with reviewing all documents related to the social measures.
   b) Monitoring and auditing funds for social obligations that are earmarked by the company for GOL activities.
   c) Report to GOL about monitoring findings.
11.4 PROJECT COMPANY ORGANIZATION

The company shall establish a SMO to accomplish social development and resettlement tasks including the social and resettlement monitoring that were mentioned in the SMMP/RAP.

The SMO shall be maintained to cover both relocation/resettlement mitigation and monitoring operations and shall be in operation from the signing of the CA and throughout the concession period. The SMO will also be responsible for all social obligations and activities of the company and will work in close cooperation with GOL organizations and agencies.

The SMO shall be maintained with such numbers of management and professional staff that are suitably qualified and skilled as will enable the company to meet the objectives set.

The responsibilities of the SMO shall be as follows:

a) Reviewing and proposing revisions to the social and relocation/resettlement measures.
b) Conducting detailed confirmation surveys of APs and entitlements.
c) Preparing and submitting the reports to concerned parties.
d) Establishing and managing ad hoc task teams.
e) Provide sufficient funding for implementation of compensation and social development activities.
f) Provide prompt and fair compensation to all APs in accordance with policy and entitlements, including sustainable livelihood systems.
g) Provide for any other unforeseen costs and mitigation measures that may impact APs as a result of project construction and operation.
h) Carry out meaningful consultations with APs that allows for participation of all groups and incorporation of local knowledge, including the participation of women, vulnerable groups and ethnic minorities.
i) Assist GOL organizations in acquiring knowledge and skills during the implementation through on-the-job training and other programs.
j) Cooperation with the government appointed liaison officer.
k) Prepare and disseminate information to the APs and GOL.
l) Organize and facilitate public consultations.

The company through the SMO will have the overall responsibility for the day to day management and implementation of social, compensation, resettlement and development processes in cooperation with relevant GOL organizations and agencies.
Concerning monitoring matters, the company shall engage in continuous, pro-active and comprehensive self-monitoring of the RAP, and shall inform MONRE of progress in writing as soon as reasonably possible. Self-monitoring and the reporting by company is intended to be the chief means of ensuring compliance by company to its obligations in the CA.
12. MONITORING AND SUPERVISION

12.1 MONITORING AND SUPERVISION PROCESS

The SMU/SMO are required to monitor to ensure all activities are in place and scheduled.

a) Progress of Works

The Mekong Sarakham HPP will require performance monitoring and measured progress against milestones set by considering a schedule of required actions. So the variables need to be supervised such as:

- No. of public meetings held
- Final census, assets inventories, assessments, and socio-economic studies completed
- Grievance redress procedures in place and functioning
- Disbursement of compensation payments
- Allocation of house plots
- Completion of village infrastructure
- Relocation of people completed
- Livelihood development activities initiated
- Monitoring and evaluation reports submitted

b) Preparation of Monitoring Report

Verification of internal RAP implementation reports by a field check of the following:

- Payment of compensation including its levels and timing
- Settlement of land/resource access claims
- Preparation and adequacy of relocation/resettlement sites
- Housing construction
- Provision of employment, its adequacy and income levels
- Adequacy of training and other developmental inputs
- Rehabilitation of vulnerable groups
- Infrastructure repair, relocation or replacement
- Enterprise relocation, compensation and its adequacy
- Transition allowances

c) Field Observation/ Surveys
• Interview a random sample of affected people in open-ended discussion to assess their knowledge and concerns regarding the relocation/resettlement process, their entitlements and rehabilitation measures.

• Observe public consultations with affected people at the village level.

• Observe the function of the resettlement operation at all levels to assess its effectiveness and compliance with the RAP.

• Check the type of grievance issues and the functioning of grievance redress mechanisms by reviewing the processing of appeals at all levels and interviewing aggrieved affected people.

• Survey the standards of living of the affected people (and of an unaffected control group where feasible) before and after implementation of resettlement to assess whether the standard of living of the affected people has improved or been maintained.

• Advise project management regarding necessary improvements in the implementation of the RAP.

d) Third Party Monitoring and Evaluation

In addition to continuous monitoring of social indicators (see next Section), the third-party monitoring and evaluation (M&E) is recommended to be undertaken by an independent monitoring agency. The agency is to report on resettlement performance and the outcomes of project relocation and resettlement schemes. The M&E will be conducted every 3 years after starting resettlement implementation.

12.2 Monitoring Indicator

The Table below shows key social, economics, and health indicators required to be addressed by M&E.
Table 38: Proposed Monitoring Indicators

<table>
<thead>
<tr>
<th>No.</th>
<th>Indicators</th>
<th>Baseline (cut-off date)</th>
<th>Actual Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>1.</td>
<td>SOCIAL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>No. of families</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1.2</td>
<td>No. of female headed family</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>1.3</td>
<td>No. of village organization</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.</td>
<td>ECONOMIC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Average size of land holding (ha)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.2</td>
<td>% of family owning land (residential)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.3</td>
<td>% of family owning land (farming)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.4</td>
<td>Agricultural production</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Rice</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Maize</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Job’ tears</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Fish catch</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.5</td>
<td>No. of male in off-farm employment</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.6</td>
<td>No. of male in off-farm employment</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.7</td>
<td>Average family income/year (kip)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>2.8</td>
<td>Average family expenditure/year (kip)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.</td>
<td>HEALTH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Birth rate</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.2</td>
<td>Death rate</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.3</td>
<td>Infant mortality rate</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.4</td>
<td>Average weight of children 5-12 y (kg)</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.5</td>
<td>Incidence of diseases (per 1,000 )</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Malaria</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Dengue</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Diarrhea</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>o Flue</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.6</td>
<td>No. of physician at health clinic</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>3.7</td>
<td>No. of nurse at health clinic</td>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>

Note: A = Final census on affected people/assets, B = To be periodically assessed and evaluated

12.3 INSTITUTIONAL RESPONSIBILITY

The SMO, with the participation of district authorities/committees/working groups, are key agencies to handle the monitoring works while the SMU will focus on the supervision of progress and performance monitoring. Both bodies are to:

- Review and propose revisions to social and relocation/resettlement measures
• Conduct detail social/economic/health surveys (at least cover the proposed key monitoring indicators addressed in Table above)
• Prepare and submit the reports to concerned parties.

12.4 MONITORING REPORTS

Periodical reports and documentations on monitoring results are required for the project which includes:

- Day-to-day Report – typical format of documentation to be filled out by the Manager and Section Manager about key notes of daily events and decisions taken. These reports will be in a registration system within the SMO for further use for consultation as necessary.

- Weekly Report – typical format of weekly report of progress and work accomplished will be prepared by the SMO Manager and submitted to the project manager and will be in a registered system for further uses.

- Monthly Report – also a typical format of report addressing problems encountered and decisions taken; debatable issues and proposed solutions; proposed activities for the coming months; budget situation including expenses, invoices, fund allocations; and a list of major meetings held during the month. This monthly report will be prepared by the SMO Manager and submitted to the project manager.

- Official Minutes of Meetings held during the month as a record and registered for further uses and official references.

- Annual Review Report - by a review team and/or consultant that will be prepared every year during the construction and operation phases.

- Specific Technical Report that needs to be conducted during the construction and operation phases.

- Performance Evaluation Report - prepared by independent consultant on RAP and SMMP that will be conducted twice during the first five years and from the sixth to tenth year.
13. IMPLEMENTING SCHEDULE AND BUDGET

13.1 IMPLEMENTING SCHEDULE

A timeframe of 12 years is required for relocation and resettlement schemes. The first two years will be dealing with administration and preparation works. Compensation payments can be done in the second year followed by infrastructure development at each site. The movement of affected people can be started in the fourth year. Livelihood development will be performed from years 5-9 for relocatees and years 5-12 for resettlers. The two last items are M&E of which internal M&E is continuous while third-party external M&E is to be performed every three years after the start of implementation.

![Figure 57: Relocation and Resettlement Implementation Schedule]

13.2 RESettlement COST ESTIMATES

13.2.1 ASSUMPTIONS

As the official compensation rate will be finalized by the GOL committees that are to be set up in each district after project approval (see section 11.3). Following is a proposed budget for the implementation of RAP in each impacted district. Listed below are the assumptions employed in the estimation.

a) Compensation

The compensation estimates are based on the recent official compensation rates for private properties (land and trees) in Xayaboury Province (No. 163/XG dated 3 February 2010).
b) **Relocation and Resettlement**

Unit cost is based on 2010 price of resettlement housing and infrastructure of recent projects in Vientiane and Xayaboury. The budget will be escalated to 2011 Price [see price escalation in (d)].

- **Family Housing:**
  
  - **Housing**
    - House (70m²)  
    - House electrification  
    - Latrine (2m x 2 m)  
    - Rain-water storage  
    - Rice storage (2m x 3m)  
    - Livestock pen (15m x 15m)

  - **Village Infrastructure**
    - Access/linkage roads  
    - Village roads  
    - Primary school (6 class rooms)  
    - Teacher dormitory  
    - Student dormitory  
    - Clinic  
    - Village hall  
    - Temple  
    - Gravity-fed water supply  
    - Market/Pier/Bus station  
    - 22 kV Power line

- **Family**
  - **US $**
  - **15,000**

- **US $**
  - **13,300**
  - **250**
  - **300**
  - **250**
  - **650**
  - **250**
  - **40,000**
  - **20,000**
  - **65,000**
  - **15,000**
  - **20,000**
  - **30,000**
  - **20,000**
  - **60,000**
  - **50,000**
  - **10,000**
  - **15,000**

**c) Exchange Rate**

The official exchange rate of July 2011 set by the Central Bank of Lao PDR of which US$ 1.00 was valued at 8,000 Lao Kip.

**d) Price Escalation**

Between February 2010 to August 2011, based on preliminary estimates by the Lao Consumer Price Index, the inflation rate was estimated at approximately 10%.

**Population Growth**

Estimated population growth in the project area is about 3% per annum.

**e) Livelihood Development Timeframe**

Livelihood development will be performed over 8 years in resettlement schemes and 5 years in relocation schemes.
13.2.2 SUMMARY OF RESETTLEMENT COST

The budget for RAP includes compensation for loss and damage of private and village assets; development of relocation/resettlement sites; livelihood restoration; and development programs in the affected district/village. In total the budget required to accomplish the foregoing is estimated at US$ 23.3 million, which will increase depending on time and population growth.

The Figure below shows the number of APs and the resettlement cost the longer the cut-off date to register for resettlement is delayed. The estimate relocation and resettlement cost will be increase 10% every year US$25.63 million, US$ 28.2 million, US$ 31.01 million, in the years 2012, 2013 and 2014, respectively.

![Graph showing number of evacuees and resettlement cost 2011-2014](image.png)

Table 39: Summary of Estimated Budget for RAP Implementation (in US $)

<table>
<thead>
<tr>
<th>No</th>
<th>ITEMS</th>
<th>Grand Total Budget For Mekong Sanakham HPP RAP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Kenthao District</td>
</tr>
<tr>
<td>I</td>
<td>Compensation Of All Losses:</td>
<td>1,383,055</td>
</tr>
<tr>
<td>II</td>
<td>Resettlement/Relocation Site Development:</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1. RS No. KD 1 - Houay Mouang Area</td>
<td>3,112,300</td>
</tr>
<tr>
<td></td>
<td>2. RS No. KD 2 - Dong Houay Ang Area</td>
<td>5,690,650</td>
</tr>
<tr>
<td></td>
<td>3. RL No. KD 1 - Donmen Area</td>
<td>-</td>
</tr>
</tbody>
</table>
Grand Total Budget For Mekong Sanakham HPP RAP

<table>
<thead>
<tr>
<th>No</th>
<th>ITEMS</th>
<th>Kenthao District</th>
<th>Paklay District</th>
<th>Sanakham District</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>RL No. KD 2 - Donsang Area</td>
<td>241,800</td>
<td>-</td>
<td>-</td>
<td>241,800</td>
</tr>
<tr>
<td>5</td>
<td>RL No. KD 3 - Nakham Area</td>
<td>369,200</td>
<td>-</td>
<td>-</td>
<td>369,200</td>
</tr>
<tr>
<td>6</td>
<td>RL No. PD 3 - Boungma Area</td>
<td>-</td>
<td>157,400</td>
<td>-</td>
<td>157,400</td>
</tr>
<tr>
<td>7</td>
<td>RL No. KD 4 - Kengsao Area</td>
<td>-</td>
<td>452,350</td>
<td>-</td>
<td>452,350</td>
</tr>
<tr>
<td>8</td>
<td>RL No. KD 3 - Nasack Area</td>
<td>-</td>
<td>67,600</td>
<td>-</td>
<td>67,600</td>
</tr>
<tr>
<td>9</td>
<td>RS No. SD 1 - Donkouad Area</td>
<td>-</td>
<td>-</td>
<td>1,158,300</td>
<td>1,158,300</td>
</tr>
<tr>
<td>10</td>
<td>RL No. KD 1 - Donphoung Area</td>
<td>-</td>
<td>-</td>
<td>603,750</td>
<td>603,750</td>
</tr>
<tr>
<td>11</td>
<td>RL No. KD 2 - Maipakthoun Area</td>
<td>-</td>
<td>-</td>
<td>729,800</td>
<td>729,800</td>
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<tr>
<td>12</td>
<td>RL No. KD 3 - Houaytao Area</td>
<td>-</td>
<td>-</td>
<td>736,300</td>
<td>736,300</td>
</tr>
<tr>
<td>13</td>
<td>RL No. KD 4 - Khokkhaodor Area</td>
<td>-</td>
<td>-</td>
<td>115,600</td>
<td>115,600</td>
</tr>
</tbody>
</table>

Livelihood Restoration Programmes: 5,101,448

<table>
<thead>
<tr>
<th>No</th>
<th>ITEMS</th>
<th>Kenthao District</th>
<th>Paklay District</th>
<th>Sanakham District</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RS No. KD 1 - Houay Mouang Area</td>
<td>585,938</td>
<td>-</td>
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<td>585,938</td>
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<tr>
<td>2</td>
<td>RS No. KD 2 - Dong Houay Ang Area</td>
<td>945,644</td>
<td>-</td>
<td>-</td>
<td>945,644</td>
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<tr>
<td>3</td>
<td>RL No. KD 1 - Donmen Area</td>
<td>828,600</td>
<td>-</td>
<td>-</td>
<td>828,600</td>
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<tr>
<td>4</td>
<td>RL No. KD 2 - Donsang Area</td>
<td>156,010</td>
<td>-</td>
<td>-</td>
<td>156,010</td>
</tr>
<tr>
<td>5</td>
<td>RL No. KD 3 - Nakham Area</td>
<td>369,200</td>
<td>-</td>
<td>-</td>
<td>369,200</td>
</tr>
<tr>
<td>6</td>
<td>RL No. PD 3 - Boungma Area</td>
<td>-</td>
<td>185,300</td>
<td>-</td>
<td>185,300</td>
</tr>
<tr>
<td>7</td>
<td>RL No. KD 4 - Kengsao Area</td>
<td>-</td>
<td>283,294</td>
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<td>283,294</td>
</tr>
<tr>
<td>8</td>
<td>RL No. KD 3 - Nasack Area</td>
<td>-</td>
<td>91,590</td>
<td>-</td>
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</tr>
</tbody>
</table>
## Grand Total Budget For Mekong Sanakham HPP RAP

<table>
<thead>
<tr>
<th>ITEMS No</th>
<th>ITEMS Description</th>
<th>Kenthao District</th>
<th>Paklay District</th>
<th>Sanakham District</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.</td>
<td>RS No. SD 1 - Donkouad Area</td>
<td>-</td>
<td>-</td>
<td>334,180</td>
<td>334,180</td>
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<tr>
<td>10.</td>
<td>RL No. KD 1 - Donphoung Area</td>
<td>-</td>
<td>-</td>
<td>306,200</td>
<td>306,200</td>
</tr>
<tr>
<td>11.</td>
<td>RL No. KD 2 - Maipakthoun Area</td>
<td>-</td>
<td>-</td>
<td>531,432</td>
<td>531,432</td>
</tr>
<tr>
<td>12.</td>
<td>RL No. KD 3 - Houaytao Area</td>
<td>-</td>
<td>-</td>
<td>368,344</td>
<td>368,344</td>
</tr>
<tr>
<td>13.</td>
<td>RL No. KD 4 - Khokkhaodor Area</td>
<td>-</td>
<td>-</td>
<td>115,716</td>
<td>115,716</td>
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</table>

Subtotal at Each District:

<table>
<thead>
<tr>
<th></th>
<th>Kenthao District</th>
<th>Paklay District</th>
<th>Sanakham District</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16,353,297</td>
<td>1,645,923</td>
<td>5,348,179</td>
<td>23,347,398</td>
</tr>
</tbody>
</table>

Grand Total Estimated Budget For RAP:

|               |               |               |               | 23,347,398 |

**Note:**  
KD = Kenthao District,  
SD = Sanakham District,  
RL = Relocation, RS = Resettlement
14. CONCLUSION AND RECOMMENDATION

14.1 CONCLUSION

Like with other large-scale hydroelectric power development projects in other parts of the world, resettlement is a key social issue. However, the run-of-river dam type will displace less persons compared to a conventional storage dam. The creation of Mekong Sanakham HPP would lead to acquisition of land and the relocation/resettlement of those who are residing on both river banks of the Mekong in the upstream tail water below 220 + 1 masl. The census indicated that

- Three (3) villages (267 families, 1127 people) are required to move entirely to a new selected land settlement areas
- From ten (10) villages (354 families, 1808 people) are required to relocate by shifting some houses to upper terrace area within their home village to avoid risk of flooding and bank erosions.

Table 41 below shows the number of population displaced by the creation of the project.

<table>
<thead>
<tr>
<th>No.</th>
<th>Village Name/ (River Bank)</th>
<th>Location: District, Province</th>
<th>Displaced Families</th>
<th>Displaced Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. RESETTLEMENT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Ban Donsok (LB)</td>
<td>Sanakham, VTE</td>
<td>36</td>
<td>155</td>
</tr>
<tr>
<td>02</td>
<td>Ban Houay Lah</td>
<td>Kenthao, XBR</td>
<td>81</td>
<td>323</td>
</tr>
<tr>
<td>03</td>
<td>Ban Khae (LB)</td>
<td>Kenthao, XBR</td>
<td>150</td>
<td>649</td>
</tr>
<tr>
<td></td>
<td>Sub-total</td>
<td></td>
<td>267</td>
<td>1,127</td>
</tr>
<tr>
<td>B. RELOCATION</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01</td>
<td>Donphoung (RB)</td>
<td>Sanakham, VTE</td>
<td>40</td>
<td>171</td>
</tr>
<tr>
<td>02</td>
<td>Maipakthoun (RB)</td>
<td>Sanakham, VTE</td>
<td>54</td>
<td>446</td>
</tr>
<tr>
<td>03</td>
<td>Houaytao (RB)</td>
<td>Sanakham, VTE</td>
<td>56</td>
<td>208</td>
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<tr>
<td>04</td>
<td>Khokkhaodor (RB)</td>
<td>Sanakham, VTE</td>
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<tr>
<td>05</td>
<td>Donmen (RB)</td>
<td>Kenthao, XBR</td>
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<tr>
<td>06</td>
<td>Nakham (RB)</td>
<td>Kenthao, XBR</td>
<td>19</td>
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<tr>
<td>07</td>
<td>Donsang (RB)</td>
<td>Kenthao, XBR</td>
<td>17</td>
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<td>08</td>
<td>Boungma (RB)</td>
<td>Paklay, XBR</td>
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<td>09</td>
<td>Kengsao (RB)</td>
<td>Paklay, XBR</td>
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<td>Paklay, XBR</td>
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<td>Sub-total</td>
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<td>354</td>
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<td></td>
<td>TOTAL</td>
<td></td>
<td>621</td>
<td>2,935</td>
</tr>
</tbody>
</table>

Note: LB = Left Bank, RB = Right Bank, VTE = Vientiane Province, XBR = Xayaboury Province

The main severe impacts are loss of assets especially productive land for rice plantations and the consequent the impact on livelihoods.
The loss of land and trees are required to be compensated based on the official rate set by the committees to be appointed by the GOL. In regard to compensation cost, the estimates will be based on a recent official compensation rate paid in the project area (Document No. 163/Governor XBR date 3 February 2010). The compensation cost for Mekong Sanakham HPP is estimated at $US 23,347,398.

Since most affected people are considered poor in the United Nations’ Poverty Index, the objective of poverty reduction should be incorporated in the company’s social policy for the project.

There no major problem foreseen in developing better infrastructure and housing for directly affected people in the proposed relocation/resettlement sites. The main challenge will be the livelihood development on how to make people better off.

Two (2) schemes, “Relocation” and “Resettlement” have been planned to help the displaced people for long-term livelihood development.

The planned net income after relocation/resettlement is estimated at US$ 700 of which the production cost is about double while the family expenses are 62.5% higher than before the project.

14.2 RECOMMENDATION

a) Employment

In order to benefit the local population and meet the objective of poverty reduction in the project areas, local people (especially APs) should be given first priority of employment by the project. If possible, a labour-aged representative of each affected family should have a job working in project construction/operation activities. This would enable a permanent family income during the seven years construction period.

b) Implementation Schedule and Milestone

The timetable for relocation and resettlement should be compatible with project construction (see Figure below). The best time for moving people will be in the dry season in years 4, 5.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description of Activities</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tr>
<td>01</td>
<td>Preparation</td>
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<td>Construction</td>
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<td>03</td>
<td>Commissioning</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**RELOCATION & RESETTLEMENT WORKS**

01 Set-up Committees, RMU/RMO
02 Updated census of affected people/assets
03 Confirm relocation/resettlement sites
04 Village consultation program
05 Capacity building for all parties
06 Finalization of compensation rate
07 Compensation payment
08 Relocation/resettlement site plan
09 Infrastructural development in all sites
10 Movement of affected people
11 Re-establishment of community system
12 Livelihood development (Relocatees)
13 Livelihood development (Resettlers)
14 Resettlement monitoring

= RAP Milestone

- **Figure 59: Timetable for Relocation and Resettlement**

**c) Compensation Resettlement Budget Funding**

An adequate budget with guaranteed sources of funding is required from the project developer for managing compensation disbursement and the establishment of relocation and resettlement schemes. Also required is an adequate budget from GOL at both Central and Provincial/District levels.

**d) Quality of Production Land**

The farm plot in the new land settlement should be improved in line with peasant economic modes of farm production so as to facilitate the establishment of the resettlers, who are mainly subsistent oriented, to adapt themselves to their new environment within the shortest time possible. Further, land improvement should ensure that per-land unit production is higher or equivalent to than before resettlement. This will ensure that the resettlers’ production and standard of living is higher or equivalent to that of the original pre-resettlement level within the shortest time possible.

**e) Capacity Building and Scholarship**

**I) Capacity Building**

*Capacity Building for Livelihood and Social Development*

The capacity of the DAFO to give technical advice is presently severely limited in depth and scope. For this reason, it will be unwise for the project to depend on DAFO provided agricultural technical services. Importantly, the lack of well qualified district staff and information limits the awareness of DAFO of the most appropriate and up to date integrated
farming approaches. Ideally, the province would allocate more staff to the district, especially those with livestock, fisheries and veterinary expertise. However, this is not foreseeable in the near future.

It is not currently known what level of support can be expected from the Province's Agriculture and Forestry Office (PAFO) and its dedicated service, the Provincial Agricultural and Forestry Extension Centre (PAFEC). To an extent, the same capacity limitations outlined above for DAFO may well apply to PAFO; To overcome some of these limitations, the project will support in-service training for local DAFO staff, so as to develop their abilities to contribute to livelihood development for the affected people.

**District and Provincial Government Service Providers**

Demonstration farms could be established to be run by the PAFO and/or DAFO. These demonstration farms would be provided with training facilities on potential livelihood options relevant to an agricultural community delivered by trained DAFO staff. Training on site would be supplemented by regular field trips to Lao PDR, Vietnam and Thailand to view and develop an understanding of other livelihood systems so as to broaden their understanding of potential livelihood systems and the nature of competition in the market place. The capacity of GOL staff to deliver credible advice depends on the development of their skills, knowledge and understanding in advance.

A training program will be developed after a Training Needs Assessment (TNA) has been conducted. A TNA could include:

- Integrated agriculture and whole farm management
  - Similar in technical content as described above, but with emphasis on government roles and responsibilities, problem solving and how to effectively interact with communities

- Community based fishery and forestry management
  - Similar in technical content as described above, but with emphasis on government roles and responsibilities, problem solving and how to work effectively with communities;

- Specific technical training
  - This will very much depend on the results of the TNA and on exactly what agricultural and forestry practices are adopted by the target village population.
**Post secondary School Leavers (part time)**

The population most receptive to learning how to change from a slash and burn foraging and hunting livelihood based system to a sedentary agricultural livelihood system are the sons and daughters of the generation being located. The developer will support a TNA which could eventually lead to the introduction of an optional curriculum (perhaps one class a week) in secondary school that raises their awareness of different livelihood systems and basic principles of agriculture.

**Secondary School Students (optional)**

Recognizing that post secondary education may not be an option for many children and that children have to contribute to the household income as early as possible, the developer will support part-time post secondary education in domestic science, farm and business management, agricultural production and marketing.

(2) **Scholarship**

In addition to regular scholarship by GOL and NGOs, each relocation/resettlement site should be provided with at least one scholarship for its students to further study after finishing secondary school. The National University of Lao and the Government Vocational Colleges are the targeted education institutes for the young resettlers. After they graduate, as a quid pro quo they return home to assist in the long-term socio-economic and livelihood development of their villages.

On this basis, there would be approximately 13 scholarships for 13 resettled students for bachelor degrees or high vocational college certificates. The time frame of the scholarship is 4 years.

**f) Benefit Sharing and Equity Issues**

At least the affected people should regain benefits from the project such as electricity and employment.

As per the above, it is recommended that the project developer provide as far as possible a member of each affected family an appropriate job with the project during the construction period.

Since many affected people are belong to vulnerable groups such as single women’s headed households, handicapped and landless specific treatment should be provided to them including:
- Vulnerable Groups including the poor, sick, orphaned and vulnerable children need to be given priority in employment opportunities arising from the project. Further, during construction, there is need to identify appropriate micro-programs that could be provided under the project such as a revolving fund, micro-financing incentives and assistance for housing construction among others.

- Special assistance to vulnerable groups may consist of the following:
  - Provision for separate and confidential consultation
  - Priority in site selection in the host area
  - Relocation near to kin and former neighbors
  - Provision of a contractor, if necessary, to construct their new house
  - Assistance with dismantling salvageable materials from their original home
  - Priority access to all other mitigation and development assistance
  - Monitoring of nutritional and health status to ensure successful integration into the resettled community

**g) Micro Financing**

Since most relocatees and resettlers are relatively poor provision of “micro-credit” or a micro-finance in the form of small loans and savings facilities to families who are relocated and resettled by the Mekong Sanakham HPP is recommended.

The micro financing concept can help provide the project relocatees and resettlers with opportunities to take an active role in their economy given entrepreneurship. As a result, relocatees and resettlers may obtain a means of income, which should lead to greater social empowerment of poor women and other vulnerable groups affected by the project. The micro-financing of approximately US $400 per family is suggested.
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World Commission on Dams report:

APPENDICES
APPENDIX 1: VILLAGES TO BE RESETTLED

LEFT BANK
Vientiane Province
Sanakham District
1) Ban Donsok

RIGHT BANK
Xayaboury Province
Kenthao District
2) Ban Houay Lah
3) Ban Khae
1) Ban Donsok

- Location on the Mekong: Left Bank –
- KM 1,765.
- GPS Location: X - 17.54.11.1, Y - 101.25.56.3
- Distance from main dam: 28.0 km
- No. of households: 28
- No. of families: 36
- No. of population: 155
- No. of female: 73

Ban Donsok
(оде изток)

Vientiane Province
Sanakham District

A) Existing Condition of Ban Donsok (Dec 2010)
B) Houses at Ban Donsok
C) Donsok School and Temples

![Donsok Primary School]

![Donsok Temple]

D) Donsok Village Forest

![Donsok Village Forest]
E) Donsok Spirit Sites

F) Village Consultation Meeting at Ban Donsok
2) **Ban Houay Lah**

- Location on the Mekong: Right Bank - KM 1,739.5
- GPS Location: X - 17.49.41.8, Y - 101.32.33.6
- Distance from main dam: 2.5 km
- No. of households: 77
- No. of families: 81
- No. of population: 323
- No. of female: 150

A) Existing Condition of Ban Houay Lah (Dec 2010)
B) Houses at Ban Huay Lah
• **Medium and Poor Quality Houses**
C)  School and Temple at Ban Houay Lah

D) Houay Lah Village Forest

E) Houay Lah Funeral/Burial Area
F) Village Consultation Ban Houay Lah

3) Ban Khae

- Location on the Mekong: Right Bank - KM 1,777.0
- GPS Location: X - 18.01.04.6, Y - 101.25.08.4
- Distance from main dam: 40.0 km
- No. of households: 140
- No. of families: 150
- No. of population: 649
- No. of female: 308
A) Existing Condition of Ban Khae (Dec 2010)
B) Houses at Ban Khae

- Good Quality Houses at Ban Khae
• Medium and Poor Quality Houses at Ban Khae
B) School and Temple at Ban Khae

C) Ban Khae Village Forest
D) Funeral/Burial Area at Ban Khae

E) Village Consultation at Ban Khae
APPENDIX 2: VILLAGES TO BE RELOCATED

<table>
<thead>
<tr>
<th>RIGHT BANK</th>
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</thead>
<tbody>
<tr>
<td><em>Xayaboury Province</em></td>
<td><em>Vientiane Province</em></td>
</tr>
<tr>
<td><em>Kuangsi District</em></td>
<td><em>Sanakham District</em></td>
</tr>
<tr>
<td>1. Donmen</td>
<td>7. Donphoung</td>
</tr>
<tr>
<td>2. Nakham</td>
<td>8. Maipakthoun</td>
</tr>
<tr>
<td>3. Donsang</td>
<td>9. Houaytso</td>
</tr>
<tr>
<td><em>Paklay District</em></td>
<td>10. Khokkhaodor</td>
</tr>
<tr>
<td>4. Boungma</td>
<td></td>
</tr>
<tr>
<td>5. Kengsao</td>
<td></td>
</tr>
<tr>
<td>6. Nasak</td>
<td></td>
</tr>
</tbody>
</table>
1) **Ban Donmen**

- Location on the Mekong: Right Bank - KM 1769.0
- GPS Location: X - 17.56.46.3, Y - 101.24.23.0
- Distance from main dam: 32.0 km
- No. of households: 217
- No. of families: 217
- No. of population: 1,023
- No. of female: 511

A) **Existing Condition of Ban Donmen (Dec 2010)**

**Donmen Temple**
Donmen Police Compound

Donmen Health Clinic
General View of Ban Donmen
Donmen Village Forest

Donmen Funeral/Burial Area

Public Consultation at Ban Donmen
2) Ban Nakham

- Location on the Mekong: Right Bank - KM 1781.0
- GPS Location: X - 18.03.15.2, Y - 101.24.47.7
- Distance from main dam: 34.0 km
- No. of households: 72
- No. of families: 72
- No. of population: 339
- No. of female: 172

A) Existing Condition of Ban Nakham (Dec 2010)

Nakham School

Nakham Temple
General Village Condition at Ban Nakham

Public Consultation of Ban Nakham
3) **Ban Donsang**

- Location on the Mekong: Right Bank - KM 1784.0
- GPS Location: X - 18.01.33.4, Y - 101.25.04.
- Distance from main dam: 37.0 km
- No. of households: 82
- No. of families: 75
- No. of population: 365
- No. of female: 169

A) **Existing Condition of Ban Donsang (Dec 2010)**

**Donsang School**
Donsang Temple

Donsang Dispensary

General View of Ban Donsang
Public Consultation at Ban Donsang

4) Ban Boungma

- Location on the Mekong: Right Bank - KM 1787.6
- GPS Location: X - 18.01.04.6, Y - 101.25.08.4
- Distance from main dam: 50.6 km
- No. of households: 258
- No. of families: 268
- No. of population: 1,235
- No. of female: 616
Boungma School

Boungma Temple

General Village View at Ban Boungma
5) Ban Kengsao

General Information

- Location on the Mekong: Right Bank - KM 1791.2
- GPS Location: X - 18.08.14.6, Y - 101.25.57.8
- Distance from main dam: 54.2 km
- No. of households: 161
- No. of families: 151
- No. of population: 814
- No. of female: 357
A) Existing Condition of Ban Kengsao (Dec 2010)

Kengsao School

Kengsao Temple
General Village View at Ban Kengsao

Some Relocation Focus Group at Ban Kengsao

6) Ban Nasack

General Information

- Location on the Mekong: Right Bank - KM
- GPS Location: X - 18.01.04.6, Y - 101.25.08.4
- Distance from main dam: 40.0 km
- No. of households: 140
- No. of families: 150
- No. of population: 649
- No. of female: 308
A) Existing Condition of Ban Kengsao (Dec 2010)

Nasack Temple

General Village Condition at Ban Nasack
Public Consultation at Ban Nasack

7) Ban Donphoung

General Information

- Location on the Mekong: Right Bank - KM 1794.9
- GPS Location: X - 18.09.52.4, Y - 101.23.20.4
- Distance from main dam: 57.9 km
- No. of households: 170
- No. of families: 168
- No. of population: 845
- No. of female: 404
A) Existing Condition of Ban Donphoung (Dec 2010)

8) Ban Maipakthoun

General Information
- Location on the Mekong: Right Bank - KM 1787.5
- GPS Location: X - 18.06.27.7, Y - 101.24.16.8
- Distance from main dam: 50.5 km
- No. of households: 238
- No. of families: 240
- No. of population: 1,984
- No. of female: 593

A) Existing Condition of Ban Maipakthoun (Dec 2010)

Maipakthoun Temple
9) Ban Houay tao

General Information

- Location on the Mekong: Right Bank - KM 1791.2
- GPS Location: X - 18.08.39.8, Y - 101.23.47.1
- Distance from main dam: 54.2 km
- No. of households: 216
- No. of families: 217
- No. of population: 805
- No. of female: 405
A) Existing Condition of Ban Houaytao (Dec)

Houaytao Temple

General Village View of Ban Houaytao
10) Ban Khokkhaodor

**General Information**
- Location on the Mekong: Right Bank - KM 1794.9
- GPS Location: X - 18.01.04.6, Y - 101.25.08.4
- Distance from main dam: 57.9 km
- No. of households: 247
- No. of families: 274
- No. of population: 1,611
- No. of female: 492
A) Existing Condition of Ban Khokkaodor (Dec 2010)

General Village View of Ban Khokkaodor

Public Consultation at Ban Khokkaodor
APPENDIX 3: GENDER AND VULNERABLE GROUP STUDY

1. INTRODUCTION & PURPOSES

Gender and vulnerable group is become an international interest aspect. Concerns are related to human rights of a woman or a man, a girl or a boy, all of which that may be affected by social change processes involving with the power development. Focus has been made to low-opportunity people in particular, women’s headed household, handicapped and landless people, and young people as well.

The objectives of the vulnerable and gender assessment for Mekong Sanakham HPP are to:

- Collect primary data on vulnerable and gender aspect of the people, particularly women in the project area;
- Identify and assess the potential positive and negative impacts of the project on the vulnerable and gender issues;
- Develop measures to prevent and/or maximize any negative potential impacts on the people, particularly women in the project area.

2. DATA COLLECTION AND METHODOLOGY

In order to gain information and data for this part, various kind of data collection methods were applied as the followings:

- Secondary data:
  - Interim, yearly and 5 years reports of Lao’s Women Union at district and provincial level.
  - Statistic of Village Women’s Union
- Primary data:
  - Questionnaires for representative of Village Women’s Union and individual household.
  - Focus Group Discussion (FGD) among women group only.
  - Participant observation
  - Interview
  - Field Notes
  - Photographs
3. **PROFILE OF GENDER & VULNERABLE GROUPS**

As another team, the VP and gender study teams also collected information and consult with community leaders and villagers particularly VP and women in the community potentially affected by the project activities but carefully focus on four villages namely B. Donxok (Sanakham District, Vientiane Province), B. Houay Lah, B. Donmen and B. Khae (Kenthao District, Xayabury Province) because they might be affected by the project and will require resettlement. The general result showed as the following:

Most of people are Lao (low land ethnic) and only few of them are upland ethnic. There are approximately 4-5 people per household. However, B. Donxok trends to have more extended families which consist of 7-8 people in one household. People marry very young (around 18 years old for female and 20 for male). They normally have around 2-3 children (more than 5 children for older generation).

![Figure 60 (Young) mothers and children in B. Donmen](image)

Most of the villages use ground water (protected wells) and surface water (Mekong and its tributaries and streams) for family’s consumption. They apply their tractors to be the water pump machine rather than manually climb up and down the Makong river bank to collect water. For those who have no machine, 10,000-20,000 kips per tank (100 Thai Baht in B. Houay) is paid in order to hire their neighbor to pump the water Lah.)
household consumption which is kept in the big tanks (normally sufficient for one month). Rain water is also used during the wet season.

![Figure 61 Water containers in the affected area](image)

Villagers improve the quality of drinking water by boiling. However, they trend to drink rainwater without boiling.

![Figure 62 water container producing and rain collected for drinking in B. Houay Lah](image)

In general, household gardens are often grown along the Mekong riverside. Rice is normally sufficient for all villagers throughout the year. However, due to the drought last year, some families in B. Houay Lah and b. Khae had rice shortages.

Firewood is the main source of energy for cooking while diesel lamp is a source of lighting. However, some households create their own electricity by using diesel machine. So they can enjoy the songs, movies and soap opera by playing their home studio and DVD players.
In terms of hygiene and sanitary, people destroy their daily rubbish by burning or burying around their home plot or in the village spaces. None of them reports that they throw it into the Mekong River. In addition, most of the people have toilet which include the pit latrines and water closet. However, the condition of toilet facilities depends on economic status of the household. Some of them have a permanent house with include inner toilet while many of them have adjacent and outdoor latrine.
Disable, mental illness and landless are normally identify as VP. In the affected area, there are 11 disable people (5 of them are female), 5 mental illness people (all of them are female) and 3 landless families (11 people) in the 4 villages (Table below).

<table>
<thead>
<tr>
<th>Province District</th>
<th>Village</th>
<th>Disability Total</th>
<th>Disability Female</th>
<th>Mental illness Total</th>
<th>Mental illness Female</th>
<th>Landless Household</th>
<th>Landless People</th>
</tr>
</thead>
<tbody>
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<td>Vientiane Sanakham</td>
<td>Donsok</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td></td>
<td>Houay Lah</td>
<td>1</td>
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<td>1</td>
<td>1</td>
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<td>0</td>
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<td></td>
<td>Khae</td>
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<td>3</td>
<td>2</td>
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<td>3</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Gender is another subordinate group among VP. According to the IEE, number of women is close to parity for each gender. Data collected by the teams shown that there are 891 female in those 4 villages, in which 7 divorces, 59 widows and 6 female headed families. B. Donmen has the highest number of women and widows (Table below).

<table>
<thead>
<tr>
<th>Province District</th>
<th>Village</th>
<th>Women</th>
<th>Divorce</th>
<th>Widow</th>
<th>Head of family</th>
</tr>
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<tbody>
<tr>
<td>Vientiane Sanakham</td>
<td>Donsok</td>
<td>73</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Houay Lah</td>
<td>66</td>
<td>3</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>Xayabury Kenthao</td>
<td>Donmen</td>
<td>444</td>
<td>2</td>
<td>33</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Khae</td>
<td>308</td>
<td>2</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>891</td>
<td>7</td>
<td>59</td>
<td>6</td>
<td>259</td>
</tr>
</tbody>
</table>

In order to make sure that those VP’s voice are heard and included in the project. The study teams raise some of their (particularly women) circumstances as the following:

In the affected area, there are fewer girls than boys in every school level. Majority of women have only primary education. There is no schooling for older generation and only few of younger generation have secondary level. The main occupation is farming and gardening, only few of them are traders (19 female are running small shops in the village) and government sector employees (mainly teachers).

There is Village Women’s Union (VWU) in each villages. 1-3 female are selected to be the president committee of VWU in each village. They also take part in the Village Mediation Unit VWU Committees play important role in leading village women to participate in healthcare and income generating
activities which aim to improve better healthcare, handicraft and trading opportunities for village women.

*Gender-based Division of Labour*

In the affected area, men are primarily responsible for large-scale work such as chop down trees, agricultural land preparation, hunting, construction works, producing wood products.

![Image](https://via.placeholder.com/150)

*Figure 65: Men's key role and men at work in the affected area.*

Women trend to deal with routine works, take care of family, and do small-scale work which include nurturing and caring for children, preparing daily meals for family members, gathering fire wood, collecting drinking water, destroying rubbish, raising poultry, raising pigs, gathering forest products for food, weaving, producing handicraft and bamboo product, trading, storing food, and buying family utensils.
It is generally observed that nurturing and caring are main task of women. Young children are always with women even when they are participating in the meeting.

However, the result from women’s only focus group discussion revealed that there are some jobs that are shared by both men and women, for instance, rearing cows and buffaloes,
gathering forest products for medicine, gathering forest products for selling, clearing rice paddy, breeding and sowing, harvesting, application of pesticides and fertilizers and selling agriculture products, supporting children in school,

**Health Care**

Data gathered from women only focus group discussions shown that most prevalent diseases among them is Uterus disease (women diseases, they called) and stomachache. In order to solve this problem, they go to health center and district hospital. In some complicated cases, they go to the hospital in Loei Province, Thailand.

Most of women go to health center and hospital during their pregnancy (except Ban Donsok because the village is situated far from the health facilities) and deliver their babies in their own house with the assistance of village midwife. Only complicated cases, they go to give birth in the district hospital. In last year period, the mortality rate of under 5 years old was four (children).

When asked about the usage of contraceptive products, they said that they normally apply tablets and injection. Some of them said that they become healthier while some of them need to inject more multivitamins because they feel dizzy.

**Economy**

Most of the villagers rely on agriculture activities. Maize, sesame, beans and Job’s tears farming are common, known as cash crops. There are some cash crops grower groups in some village, particularly Ban Houay Lah. The head of the groups accesses seeds and money from the investors which mainly in Thailand.
They then collect agriculture products from their group’s members and store in their house or the storage attached to the main house. The investors come to pick the products up.

Other main activity is livestock such as poultry, pigs, buffalos and cows. Moreover, forestry and fishing are other sources of income. Fishing is considered way of life of people in the riparian villages. Fish caught are both for household consumption and for selling if surplus.
Small business (shop) is one of main source of income for 19 female and their family in the 4 affected villages. It’s also source of food processing and energy for lighting and driving in those villages.

**Women’s Participation**

Most of women revealed that they first known the project from Chinese data collectors and then village authorities and this study teams respectively.
Beside official dialogue with provincial, administrators and key local authorities, the project participatory method has been employed in gathering information and communication with the potential affected villages and women. Women only focus group discussion are organized soon after the village meeting regarding the project. The mix of different status, ages and occupation of women and VP were conducted in every village in order to make sure that all comments and concerns are included in the project design.

![Image of women in a meeting]

Figure 72: Women only focus group discussion

Majority of women said that they normally have a few chance to attend the village meeting due to only head of family is invited. So only women headed family and women who husband or the head of family are not available participate in the meeting. They said that when they take part in the meeting, only men talk. Women don’t talk much due to lack of chance, lack of knowledge and information and sometime they don’t know what they suppose to say. Most of women agree that when they attend the women only meeting they can talk, discuss and share whatever they think, particularly what will happen to their community. So they keen to express their ideas and concern clearly.

**Women’s point of view towards the project**

Towards impacts of the project, the women’s views concern to loss of housing, land, and plantation areas. They think that these impacts will be significant because it links to the
loss of agricultural production. Due to they have their fertilized land along the Mekong river which bring them a significant products and income.

Another concern is the loss of community properties, particularly schools, temples and health center. Some women concern about their children education as well as change in ethnic cultural, custom and villagers’ belief.

Figure 73: B.Houay Lah, B. Donmen and B. Donxok primary school

Figure 74: B.Houay Lah and B. Donxok temple
Views in Supporting the Project

Majority of people in the affected area consider that Sanakham HPP will make their life better off. It will bring good roads, electricity, clean water, permanent housing, schools, markets and health centre. B. Houay Lah said that it will create job opportunities and there will be many tourists come to their village so they can earn some benefits. Village women will work less because of better infrastructure. Therefore, they quite support the project as shown in the pictures below:
Compensation Issues

The information obtained from the field shown that most of people expect full appropriate compensation from the project. They stated that the compensation should be the same as market price. For loss of housing, compensate to be materials which to be equal to price required.

Impact on Gender & Vulnerable Group (GVG)

Based on the survey, the environmental and resource changes caused by the project will potentially create impacts on GVG. The identification of potential negative/positive effects, their magnitude and proposed mitigation measures are presented as the following:

Dam and related components

Construction

a) Concern

In general, construction of any kind of hydropower dams may bring a range of benefits to local communities. The increasing employment opportunity is the most advantage during the construction period. However, they may also create a range of disadvantages on human and aquatic life. Loss of agriculture and housing land and livelihoods, relocation and resettlement of local people from inundation are the most common. Location of camps with the regard to social conflicts in the construction area is another issue. A great labour force may create a big chance of introducing or increasing of Sexual Transmitted Diseases (STDs) and HIV/AIDS. Infectious diseases spreading and outbreaks of hepatitis and cholera are other possible health concerns due to unsanitary work conditions and contaminated water supplies in the project construction areas.

Women and vulnerable groups trend to gain less benefit but more effects than the others. By the way, construction period will not last too long and it normally easily controlled by providing adequate EMP.

b) Project aspects

From the IEE and later field visits, it would be expected that 4 villages above the dam site need to be resettlement. All villagers are directly affected. The worst are 11 disable people (five of them are female), 5 mentally illness people (all of them are female), 3 landless families (11 people), 7 divorces women, 59 widows
and 6 female headed families. The problems facing these vulnerable people, particularly female-headed households are vary according to their degree of access to resources and the absence of male labour and often less nutrition. In order to mitigate those effects, compensation and assistant should be paid and continue until the livelihoods are fully restored.

c) E&S aspects

In apparel with a range of benefits for local community and country as a whole, some actual agriculture, housing land and forest will be lost. The most directly affected people are those who will have to be resettled and relocated during the construction period. There will be only some employment opportunity for some local people (mainly men) while the rest which mostly women, children, disable and old people are remained in the community. These may lead to tensions and conflicts within family and community.

d) Magnitude & Importance (M&I) of changes

The magnitude of the change on the loss of privately and publicly owned assets, land and livelihoods caused by construction as well as possible social disagreement between workers and local communities will be negative. Its magnitude of the change on affected people’s employment and income from commercial opportunities are positive. The employment opportunity and compensation will allow them to improve their living condition and livelihood during the construction period.

e) Significance

Due to there are only four affected villages and the availability of RAP and LRP, the total significance of construction on the loss of privately and publicly owned assets, land and livelihoods as well as possible conflicts within local society and workers should be moderate negative. While its magnitude of the change on affected people’s employment should be highly positive. Its significance of changes in trade incomes should be moderate positive.

f) Recommendations

Resettlement Action Plan (RAP), Social Action Plan (SAP) and Livelihood Restoration Plan (LRP) should be developed based on consultation with the affected people in order to ensure that the project replaces loss of private and public assets and land via RAP and LRP. The entire plans and implementations need to be managed by skilled professionals.
Camp should be located and managed in order to ensure that social harmony between local society and workers from outside communities is maintained. Strict regulations to control workers' behavior in the community must be implemented and enforced.

Local people should be priority for construction work recruitment. Gender balance should be applied in some jobs. However, most of the available jobs during construction period are temporary. The ongoing employment (maintenance or restoration) must be continued after the construction period.

Intensive assistance and support for vulnerable people to resettle during the transition period is essential.

ii. Operation

a) Concern

Apart from loss of land and livelihoods of relocation and resettlement local people during the construction phase, run-of-river dams will not lead to seriously change in hydrology due to no reservoir to silt up. They may only create some changes in sediment load and downstream erosion; impacts on sediment movement will not seriously compromise because the rivers can return to its pre-impoundment flood regime and allow sediment to pass through the series of small waterfall reservoirs. The main impact of the cascade dams will be on aquatic biodiversity and fish migration blocking. River bank fishing may be more difficult. New fishing methods and boats are needed. These may create negative effects on women and vulnerable people more than other groups.

b) Project aspects

In the direct affected area, changes in agriculture areas, fisheries, loss of private and public assets will lead to loss of livelihood. By the way, changes in access to social services such as education and health will create better opportunity to improve their living conditions. However, problems facing some vulnerable people (as mentioned in construction period above) are more complicated than other groups of people.

c) E&S aspects

Communities above and below the dam will lose part of their livelihood and aquatic biodiversity. Blocking fish migration will lead to less fish production for household’s consumption and income. These losses may be irreversible during
the project’s lifetime. Women and vulnerable people will be directly affected
due to fish is the most accessible main source of protein of the riverside people.

d) Magnitude & Importance (M&I) of changes

Loss of livelihood due to change in agriculture land, fisheries and loss of
housings and public buildings will be negative. Changes in access to social
services (education and healthcare) will be positive.

e) Significance

Loss of livelihood due to change in crop and grazing areas should be significant
negative. While loss of aquatic resources should be major negative. Loss of
shelter and private assets should be moderate negative. Loss of public assets
should be minor negative. In contrast, changes in access to improved education
and healthcare services are major positive.

f) Recommendations

RAP, SAP, LRP and Aquaculture Development Plan should be developed based
on consultation with the affected people. Loss of livelihood should be addressed
in the Livelihood Restoration Plan (LRP). Loss of aquatic resources should be
introduced in the. Adequate land for housing and agriculture and replacement of
public assets (schools, health centres, temples) should be provided via the
Resettlement Action Plan and LRP. The entire plans and implementations need
to be managed by skilled professionals.

The representative of Lao Women’s Union in the provincial, district and village
level need to be active involve in every step of the project. The project staff
should consult and work closely with the representative of Lao Women’s Union
and should be trained and sensitized to traditional customs, rituals and
ceremonies. Public infrastructure and services should be developed. Vocational
training and technical assistance should be provided. Difference kind of
awareness programs should be organized regularly. Village saving fund or micro
credit project should be established and supported.

- Access Roads
  
  i. Construction
    
    a) Concern

    In general, development projects particularly constructions of hydroelectric
power projects often bring better conditions to local communities. Public
infrastructure, mainly road, is the most significant improvement. Access roads lead to access to another extension of public services such as healthcare, education and markets. These will lead to better living conditions of local people around the project areas. However, resettlement may require for construction of those access roads.

b) Project aspects

In the affected area, the road condition is variable. It ranks from gravel to sealed roads. During the dry season, dust creates a driving hazard and is annoyance to people living along the roads. In wet season, muddy conditions limit access to villages so river transport becomes more important.

Ideally, the project will improve road conditions. Sealed roads will connect Sanakham and Paklay townships and villages to Vientiane Capital.

c) E&S aspects

Access roads (around the project areas) will lead to better access to public services as well as better opportunity for individual and community development mean while it may lead to resettlement of local community for the construction of those roads and they may bring some risks coming along with such development.

d) Magnitude & Importance (M&I) of changes

Apart from losing some public and private land and assets in term of building the roads, changes in access roads will be more positive.

e) Significance

Changes in access road will be highly positive. Road conditions will be improved. Sealed roads will connect both Sanakham and Paklay districts to villages as well as Vientiane Capital and other part of the country.

f) Recommendations

Compensation and assistant should be paid to community and individual losing their land and assets due to the building the roads. Strict regulations to control road standard must be implemented and enforced in order to ensure that these roads still remain after done all heavy workloads of dam construction and continue using during operation phase.
a. Operation

- Concern

In general, access roads of dam constructions still work well during operation. However, some roads are damaged during the construction period, so local people gain less benefit from access roads of dam constructions.

- Project aspects

Access roads will be continued using after the construction and during operation phase.

- E&S aspects

Access roads will lead to opportunity to access to market and public services such as healthcare and education as well as job opportunity. These will ensure better living conditions of local people around the project areas.

- Magnitude & Importance (M&I) of changes

Changes in road conditions will be positive.

- Significance

Better access roads due to the construction of HPP will be highly positive.

- Recommendations

Strict regulations to maintain road conditions must be applied in order to ensure that these roads remain in good conditions during the operation phase.

g) Resettlement Sites

a. Construction

- Concern

In general, the constructions of hydroelectric power projects are highly likely to lead to the resettlement and displacement of local (ethnic minority and/or indigenous) people living on the reservoir as well as downstream areas. They may have to live with insufficient agricultural land and have no source of sustainable livelihood and their food security is threatening. People downstream who depend on the rivers for their livelihoods have been directly affected by the project, due to destruction of fisheries and clean water shortages. Flooding along
the rivers leads to the loss of fertile agricultural land, fruit trees and riverbank gardens. It also causes water contamination, livestock deaths and other hardships for villagers living downstream and some host villages. Adequate compensation may not propose and provide.

- **Project aspects**

As mentioned in feasibility study and followed study, four villages above the dam site are identified as requiring to resettlement due to flooding. All villagers are directly affected. The worst are vulnerable people such as 11 disable people, 5 mentally illness people, 7 divorces women, 59 widows and 6 female headed families. The problems facing these people, particularly female-headed households vary according to their degree of access to resources and the absence of male labour.

- **E&S aspects**

In order to mitigate the effects on local communities, compensation and assistant should be proposed and provided. They should be continued until the livelihoods are fully restored.

- **Magnitude & Importance (M&I) of changes**

The changes involving resettlement of people and changes to social cohesion lead to the disruption of established socio-economic patterns. Those changes will be negative.

- **Significance**

Changes in socio-economic patterns due to resettlement of local community should be significant negative.

- **Recommendations**

Villagers need to consider the beneficiary of the resettlement program. Resettlement areas need to be determined for the new locations with the consultation with affected people. In this case, some villagers suggested that their new villages should be situated along the road from Kenthao to Pak Lay. Social patterns need to restore by application of SAP, RAP and LRP. The entire plans and implementations need to be managed by skilled professionals and they should be paid and continue until the livelihoods are fully restored.

b. **Operation**
• **Concern**

After the construction phase of the project, some resettled people may continue live with insufficient agricultural land and have no source of sustainable livelihood. Adequate compensation have not proposed and provided.

• **Project aspects**

Same as mention in construction phase above

• **E&S aspects**

Same as mention in construction phase above

• **Magnitude & Importance (M&I) of changes**

The changes involving resettlement of people which lead to the disruption of established socio-economic patterns will still be negative during operation phase.

• **Significance**

Due to application of SAP, RAP and LRP available during construction phase, changes in socio-economic patterns because of resettlement and relocation of local community may less negative.

• **Recommendations**

SAP, RAP and LRP should be continued until their livelihoods are fully restored.
**APPENDIX 4: HEALTH IMPACT STUDY**

1. **INTRODUCTION**

Good health is something which everyone wants, for themselves, their children and for the wider economic and social benefits it brings to our society. It plays a major role in long-term economic growth and sustainable development. Nowadays, life in Lao PDR is changing. Our society has become increasingly urbanized and more complex. In supporting contemporary lifestyles, we have increased the contamination of air, water and soil; persistent chemical pollutants have become gradually widespread and global climate change presents new environmental health hazards. These factors are contributing to communicable diseases, (diarrhea, dysentery, typhoid, respiratory diseases, etc.), non communicable diseases (cardiovascular, hypertension, diabetes, etc.), physiological and neurological disorders and increased incidences of a range of cancers.

The government, private, and international agencies make large investments in development. Development projects come under the responsibility of a wide range of sectors, such as energy, agriculture, mining, industry etc. They may have both positive and negative impacts ranging far beyond their immediate objectives. These impacts can affect the environment, public health, social structures and the demography of local communities.

Sanakham HPP is the 5th cascade project planned on the mainstream of the Mekong River in Laos. The project site is located on the main stream of the Mekong River 1.4 km upstream of Pakheuang Village, Kenthao District, Xayaboury Province, Lao People's Democratic Republic. The Mekong River at the project site is on border of Xayaboury Province and Vientiane Province. Kenthao District is located at the right side of the Mekong and Sanakham District of Vientiane Province is located at the left bank of the Mekong River. The dam site is located about 1737 km away from the Mekong estuary, about 155 km away from the downstream of Vientiane Capital, 81 km away from the upstream of the Pak Lay project, and about 25 km to the Sanakham town.

National Consulting Group (NCG) has conducted an Environmental and Social Impact Assessment (ESIA) for the project. The Health Impact Assessment (HIA) is an important proportion of a larger Environmental and Social Impact Assessment (ESIA). The aims of the study are to understand the existing health situation of people and determine the health impacts that could be attributed to the project development and also, to recommend management and mitigation measures.

2. **THE OBJECTIVES AND SCOPE**
- Collection of the overall health status of the population within and surrounding the project areas, especially upstream and downstream villages.
- Determine the area’s status compared to provincial and national data.
- Assess possible health impacts that could be attributed to the HPP.
- Develop management measures to prevent and / or minimize any negative health impacts and maximize any potential health benefits arising from the project development.

### 2.1 Data Collection Method

The village visits took place from December 2010 to January 2011. Most villages within the project could be reached by car, but some villages were reached by boat. The survey team met and interviewed health personnel and heads of villages, 15 villages downstream and 24 villages upstream, in order to get relevant data on people’s health at the village level. The team also met relevant officials in the Provincial Health Office and Public Health Statistic Unit (MoH), chief of the District Health Office and the head of the Village Health Center, in order to review and collect the current health situation in each level.

### 2.2 Survey Questionnaires

There are two sets of survey questionnaires designed for the field study process. The first one is for the village health volunteers (VHV) and heads of villages, the second is for the Health Center (HC). The village health volunteers (VHV) and heads of villages were interviewed in order to obtain the contextual information of the villages. The questionnaire was focused on the existing health situation of the people in the village and also health risk factors which can cause negative impacts on the residents health such as:

- Village Statistics relating to health
- Access to health care facilities
- Existing health care services
- Where people mostly go for medical treatment
- The birth and mortality situation in the village
- Identification of important health risk factors in the village
- The existing sources and quality of drinking water
- The number of households with toilet facilities
- Current plans of health development or improvement in the villages
- The most common diseases in the village (2009 -2010)

The second of the two Surveys was for the Health Center (HC) to obtain information on health services and key health issues. The Health Impact Assessment team also
interviewed the Provincial head of statistics division and head of District Health Office (DHO) to collect secondary data on the following issues:

1. National Health Situation
   - Geodemography and reproductive health status
   - Other proximate determinants of fertility
   - Mortality and life expectancy
   - Maternal and child health
   - Nutrition and
   - Hygiene and Sanitation

2. Health Care Facilities and Existing Health Situation in Provincial, District and Health Center levels:
   - Availability of health infrastructure
   - Availability of health staff
   - The causes of illness and Death (top-ten common diseases)
   - Mother and Child health including maternal mortality rate and mortality rate of children under 5 years of age
   - Vaccination programs
   - Birth and death rate
   - Hygiene and Sanitation
   - Health Education
   - Health Development Plan
3. HEALTH STATUS OF THE PEOPLE IN LAO PDR

3.1 National Health Situation

3.1.1 Geodemography and reproductive health status

The population of Lao PDR reached 5,621,000 (five million six hundred and twenty-one thousand) and had a natural growth rate of 2.5 percent Census according to the 2005 population and Housing Census. The Census recorded a very young population structure with about half of the total population under the age of 20 years old. The average household size was 5.9 persons and about 1 in 10 households was headed by a woman. Three out of four people lived in rural areas and engaged in subsistence farming. There had been a substantial migration from rural to urban areas in all provinces and the number of people employed in the government and the private sector increased slightly. Compared to the Census in 1995, the total fertility rate declined from 5.6 children per woman in 1995 to 4.5 children per woman in 2005 and in the same period, life expectancy increased from 52 years to 63 years for women and from 50 years to 59 years for men. (National Statistics Centre/Committee for Planning and Investment, 2005)

Despite significant progress, the reproductive health status of women and girls, particularly members of ethnic groups and those living in rural and remote areas remains poor. Lao PDR has among the highest maternal mortality ratios and infant mortality rates in the region. In rural areas, women and adolescent girls have shorter intervals between births, marry younger, bear children younger and have a higher fertility rate compared to those living in urban area. While HIV prevalence rate remain low, the more serious epidemics in several neighboring countries and the increasing population mobility both within and across Lao borders make the country vulnerable.

While the economy has gradually improved, the Lao PDR is still among the poorest countries in South East Asia. The Fifth National Socio-Economic Development Plan (NSEDP) for the period of 2001 – 2005, was developed to accelerate economic growth and improve access to social services with a long term objective of removing the Lao PDR from the list of least developed countries. As a follow up to the Fifth Plan, the government adopted the Sixth NSEDP (2006-2010) in 2006. The Sixth Plan revealed the progress made in the previous period and outlines clear targets and strategies to reach mid-term and long-term goals. The 2010 targets for education are to increase the enrolment rate to 90.6% for primary school, to increase the attendance rate to 68.4% for lower secondary school and 40% for upper secondary school. In terms of health improvement, the NSEDP targets for 2010 are to increase life expectancy to 63.5 years, reduce the maternal mortality rate to 300 deaths per 100,000 live births, and to reduce the infant mortality of children under five years of age to below 55 deaths per 1,000 live births.
3.1.2 Other proximate determinants of fertility

Age when first married is an important determinant of fertility as most births occur within marriage. By the age of 18 years, 44.5 per cent of women currently aged 25-49 years old were married and by the age of 25 years, 86.6 per cent of women were married. The median age for a first marriage of women who are currently 25-49 years old, is 19 years. There is a positive association between women’s education levels and the median age of their first marriage. Median age of the first marriage increases gradually from 18 years for women with no completed or primary education to 22 years for women with upper secondary education. The median age for women living in urban area is 2 years higher compared to women living in rural areas (20 vs. 18 years).

3.1.3 Mortality and life expectancy:

The mortality indicators (crude death rate: CDR), infant and child mortality rate (IMR,CMR) and under five mortality rate (U5MR) are most likely underestimated.

The CDR is estimated to be 5.4/1000 of the population. Direct estimates shows that the neonatal mortality rate (probability of dying in the first month of life) is 26/1000 births and postnatal mortality rate (probability of dying between 2nd and 11th month of life) is 30/1000 births. This means that almost half (46 per cent) of infant deaths are in the neonatal period. Infant deaths during the first month of life are often associated with complications during childbirth and the findings could indicate that emergency obstetric care and postnatal care are limited. The estimate of IMR of 63 infant deaths per 1000 live births and CMR is 25 per 1000 children between the ages of 1-4 years old. The U5MR was estimated to be 88 per 1000 live births.

The differences of infant and child mortality according to the background characteristics of women is consistent with expectations, that is, women who live in urban areas or the Central region, and those who have higher level of education, reported lower levels of IMR. IMR recorded by a mother’s background characteristics shows that the IMR is over twice as high in rural areas with road(s) compared to urban areas (63 vs. 27). For women living in rural areas without a road, the IMR is almost three times higher than that recorded for women living in urban areas (78 vs. 27).

Based on the result of the indirect method estimate of IMR, life expectancy of Lao people is 62.7 years which represents an increase from 59 years recorded in the Lao Productive Health Survey (LRHS) 2000. (LRHS 2005)

3.1.4 Maternal and child health
About three in ten births (28.5%) during the last 5 years (2005) are to women who received antenatal care (ANC) suggesting that access to and use of ANC is low. About 15.7% obtained ANC from a doctor, 8.7% from a nurse, 4.3% from a midwife and 1.6% from a health worker. Traditional birth attendants and others provided ANC for 0.8% of births. ANC is more available in urban areas than in the rural areas, indicated by a higher percentage of women who live in urban areas obtaining ANC (84.3%) compared to 29.2% of women who in rural areas with road and 9.3% without road. ANC also increases sharply with women’s education.

Although, the overall coverage of ANC is low, there is a tendency for younger women to have ANC. About 32% women aged 20-34 years obtained ANC compared to only 18.6% of births of women aged 35 years or older. Among births from mothers who went for ANC, most mothers went for the first time during between the 3rd and 5th month of pregnancy.

### 3.1.5 Nutrition Situation

Nutritional status is a good reflection of a country’s health status. In the Lao PDR, despite robust economic growth in the last decade, malnutrition levels in children under five years (CU5) have not improved.

The results of the 2006 Multiple Indicators Cluster Survey (MICS III) by MoH, NSC and UNICEF show high levels of protein-energy malnutrition (PEM). By applying the NCHS reference standards, 40% of CU5 are moderately stunted and 16% severely. This form of chronic malnutrition can be associated with long-term inadequate food intake and low health status. 37% of CU5 are moderately underweight and 9% severely. 6.4% are wasted, which can be caused by short-term inadequate food intake and the having certain infectious diseases, in particular diarrhea. All forms of malnutrition gradually increase after 6 months and peak at the age of 24 months.

WFP’s Comprehensive Food security and Vulnerability assessment – with data from rural area as of 2006 – applied the WHO reference standards and disaggregated the nutritional data (PEM) for ethnic groups. It was found that the non-Lao Tai groups in remote upland areas have significantly higher stunting levels, some above 60%.

Protein-energy malnutrition is accompanied by high levels of micronutrient deficiencies such as Vitamin A, iodine and iron. Following MICS III, 37% of women of reproductive age (WRA) and 41% of CU5 are suffering from moderate anemia. 13% of WRA are found to have low urinary iodine levels (below 10 mcg/dl) and are at risk of developing goiter or other iodine deficiency disorders.

According to the MICS III survey only 26% of the children in Lao are exclusively breastfed from 0-5 months. In addition, the quality of breast milk is often compromised due to stark food avoidance behavior. After delivery 81% of mothers follow cultural
specific food taboos (restricting the consumption of meat, egg, fat, etc). As may as 25% of women take four months to revert to their normal diets, with other reverting even later.

3.1.6 Hygiene and Sanitation Situation

Toilet facilities are important for the health and hygiene of members of the household as well as for maintaining a sanitary environment. The total population using clean water for drinking and domestic use was 4,673,664 (76.3%) while the total number of households using latrines was 522,678 (50.2%) in 2009 (MoH 2008-2009).

3.1.7 HIV/AIDS and STIs Situation in Lao

Laos is surrounded by countries with higher infection rates, but the nation enjoys low prevalence, estimated by the government’s Center for HIV/AIDS/STIs (CHAS) at less than 0.1 percent of the adult population. Between the first reported case of HIV in 1990 till June 2009, 3,659 cases of HIV infection were officially recorded, with 2,376 cases of AIDS and 1,038 cases causing death. Almost 87 percent of the infections occurred through heterosexual transmission, 5 percent from mother to child (MTCT), 1 percent in men who have sex with men (MSM), 0.1 percent from blood products and unsterilized needles and 6.8 percent under reported. While the number of cases among the general population remains low (although unofficial estimates assume a much higher figure) the same studies indicate that there is little room for complacency. In 2009 the rate among commercial sex workers has increased because the knowledge of HIV/AIDS among certain high-risk groups remains low. The main population of HIV in Laos is the so called mobile populations, comprising sex workers, their clients and migrant labourers, many of whom travel outside the country or make regular trips between rural and urban areas.

From 2005 to 2009 there were 3,136,954 patients receiving OPD care; 82,034 cases of new STIs Infection were diagnosed.

3.1.8 Top 10 causes of morbidity and mortality for National level

The ten most common diseases and causes of illness and death for the nation were the common cold, tonsillitis-pharyngitis, pneumonia-bronchitis, diarrhea, nervous system-non psychiatric, road traffic injuries, malaria, dengue fever and hypertension as indicated in table below: (National Health Statistic 2008-2009)
Table 1- Top ten causes of illness of Out Patients (OPD) for national level in 2009-2010

<table>
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<th>No</th>
<th>Causes</th>
<th>Number</th>
<th>Percentage</th>
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<tr>
<td>1</td>
<td>common cold (influenza)</td>
<td>173,549</td>
<td>12.9%</td>
</tr>
<tr>
<td>2</td>
<td>tonsillitis, pharyngitis</td>
<td>121,569</td>
<td>9%</td>
</tr>
<tr>
<td>3</td>
<td>pneumonia-bronchitis</td>
<td>77,424</td>
<td>5.7%</td>
</tr>
<tr>
<td>4</td>
<td>Diarrhea</td>
<td>77,052</td>
<td>5.7%</td>
</tr>
<tr>
<td>5</td>
<td>nervous system-non-psychiatric</td>
<td>76,784</td>
<td>5.7%</td>
</tr>
<tr>
<td>6</td>
<td>minor surgery</td>
<td>52,538</td>
<td>3.9%</td>
</tr>
<tr>
<td>7</td>
<td>road traffic injury</td>
<td>39,313</td>
<td>2.9%</td>
</tr>
<tr>
<td>8</td>
<td>trauma, all others</td>
<td>33,468</td>
<td>2.6%</td>
</tr>
<tr>
<td>9</td>
<td>malaria</td>
<td>30,581</td>
<td>2.3%</td>
</tr>
<tr>
<td>10</td>
<td>hypertension</td>
<td>18,184</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

Table 2- Top ten causes of illness of In Patients (IPD) for national level in 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>diarrhea</td>
<td>26,622</td>
<td>11%</td>
</tr>
<tr>
<td>2</td>
<td>pneumonia-bronchitis</td>
<td>15,190</td>
<td>6.3%</td>
</tr>
<tr>
<td>3</td>
<td>tonsillitis, pharyngitis</td>
<td>14,659</td>
<td>6.1%</td>
</tr>
<tr>
<td>4</td>
<td>road traffic injury</td>
<td>10,469</td>
<td>4.3%</td>
</tr>
<tr>
<td>5</td>
<td>common cold</td>
<td>10,104</td>
<td>4.2%</td>
</tr>
<tr>
<td>6</td>
<td>trauma-all others</td>
<td>6,310</td>
<td>2.6%</td>
</tr>
<tr>
<td>7</td>
<td>nervous system-non-psychiatric</td>
<td>6,039</td>
<td>2.5%</td>
</tr>
<tr>
<td>8</td>
<td>malaria</td>
<td>5,737</td>
<td>2.4%</td>
</tr>
<tr>
<td>9</td>
<td>dengue fever</td>
<td>5,524</td>
<td>2.3%</td>
</tr>
<tr>
<td>10</td>
<td>hypertension</td>
<td>4,169</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Table 3- Common causes of Mortality for national level in 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes</th>
<th>Number No.</th>
<th>Percentage</th>
<th>&lt; 5 years No.</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>diarrhea</td>
<td>99</td>
<td>1.6%</td>
<td>25</td>
<td>3.3%</td>
</tr>
<tr>
<td>2</td>
<td>acute respiratory infection</td>
<td>219</td>
<td>3.6%</td>
<td>138</td>
<td>18%</td>
</tr>
<tr>
<td>3</td>
<td>dengue fever</td>
<td>15</td>
<td>0.2%</td>
<td>1</td>
<td>0.1%</td>
</tr>
<tr>
<td>4</td>
<td>malaria</td>
<td>19</td>
<td>0.3%</td>
<td>6</td>
<td>0.8%</td>
</tr>
<tr>
<td>5</td>
<td>other causes</td>
<td>1,482</td>
<td>24.2%</td>
<td>314</td>
<td>41%</td>
</tr>
</tbody>
</table>
Table 4- Number and percentage of low birth weight at health facilities

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Province</th>
<th>No. of birth by Health staff</th>
<th>% of birth By Health staff</th>
<th>No. of low Birth weight LBW</th>
<th>% of low Birth weight LBW</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>60,100</td>
<td>35</td>
<td>3,378</td>
<td>5.6</td>
</tr>
<tr>
<td>2</td>
<td>Vientiane Province</td>
<td>3,807</td>
<td>31.9</td>
<td>252</td>
<td>6.6</td>
</tr>
<tr>
<td>3</td>
<td>Xayaboury Province</td>
<td>3,324</td>
<td>43.8</td>
<td>170</td>
<td>5.1</td>
</tr>
<tr>
<td>4</td>
<td>Luang Prabang Province</td>
<td>4,023</td>
<td>34.1</td>
<td>138</td>
<td>3.4</td>
</tr>
</tbody>
</table>

Table 5- Number of Caesarians, premature birth, still birth and maternal deaths at Health Facilities

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>No. of caesarians</th>
<th>No. of premature birth</th>
<th>No. of still birth</th>
<th>No. of Maternal Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>3,520</td>
<td>1,299</td>
<td>589</td>
<td>47</td>
</tr>
<tr>
<td>2</td>
<td>Vientiane Province</td>
<td>150</td>
<td>114</td>
<td>42</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>Xayaboury Province</td>
<td>58</td>
<td>84</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Luang Prabang Province</td>
<td>159</td>
<td>47</td>
<td>9</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 6- Number and percentage of fully immunized infant (BCG, DTP+HepB3, Polio, Measles)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>&lt;1 year get fully immunized infants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>1</td>
<td>National level</td>
<td>51,951</td>
</tr>
<tr>
<td>2</td>
<td>Vientiane Province</td>
<td>4,886</td>
</tr>
<tr>
<td>3</td>
<td>Xayaboury Province</td>
<td>3,468</td>
</tr>
<tr>
<td>4</td>
<td>Luang Prabang Province</td>
<td>3,091</td>
</tr>
</tbody>
</table>

Table 7- Number and percentage of received Vitamin A2 and De-worming Drug2

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>Received vit. A2</th>
<th>Received MDZ2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No.</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>National level</td>
<td>239,251</td>
<td>39.7</td>
</tr>
<tr>
<td>2</td>
<td>Vientiane Province</td>
<td>2,173</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Xayaboury Province</td>
<td>9,399</td>
<td>29.2</td>
</tr>
<tr>
<td>4</td>
<td>Luang Prabang Province</td>
<td>5,635</td>
<td>11.9</td>
</tr>
</tbody>
</table>
Table 8- Number and coverage of first and total antenatal care in 2009-2010

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>No of ANC visits</th>
<th>No. of First CAN</th>
<th>% AN C coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>284,056</td>
<td>85,636</td>
<td>49.9</td>
</tr>
<tr>
<td>2</td>
<td>Luangprabang</td>
<td>14,969</td>
<td>4,362</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>Vientiane Province</td>
<td>22,601</td>
<td>6,969</td>
<td>58.3</td>
</tr>
<tr>
<td>4</td>
<td>Xayaboury Province</td>
<td>19,891</td>
<td>4,525</td>
<td>59.7</td>
</tr>
</tbody>
</table>

Table 9- Number and percentage of time of using contraceptive methods

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>Total</th>
<th>% of using contraceptive method</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Condom</td>
</tr>
<tr>
<td>1</td>
<td>National level</td>
<td>518, 53</td>
<td>7.2</td>
</tr>
<tr>
<td>2</td>
<td>Luang Prabang</td>
<td>19,997</td>
<td>5.5</td>
</tr>
<tr>
<td>3</td>
<td>Vientiane Province</td>
<td>23,608</td>
<td>6.2</td>
</tr>
<tr>
<td>4</td>
<td>Xayaboury Province</td>
<td>46,278</td>
<td>1.7</td>
</tr>
</tbody>
</table>

Table 10- Percentage of population in malaria risk areas protected by Impregnated bed net (IBN)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>No. of target population</th>
<th>Average of Population Per 1 IBN</th>
<th>% of population Protected by IBN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>4,101,386</td>
<td>2.9</td>
<td>85.6</td>
</tr>
<tr>
<td>2</td>
<td>Luang Prabang</td>
<td>354,871</td>
<td>2.9</td>
<td>79</td>
</tr>
<tr>
<td>3</td>
<td>Phongsaly</td>
<td>151,627</td>
<td>3.6</td>
<td>71.7</td>
</tr>
<tr>
<td>4</td>
<td>Oudomxay</td>
<td>229,004</td>
<td>3.3</td>
<td>89.2</td>
</tr>
</tbody>
</table>

Table 11- Tuberculosis( TB ) prevalence and percentage of TB cases detected by DOTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>% of TB Prevalence Per 100,000</th>
<th>No. of Estimated TB Cases</th>
<th>No. of Detected TB cases</th>
<th>% of detected TB cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>53.7</td>
<td>3,863</td>
<td>3,079</td>
<td>79.7</td>
</tr>
<tr>
<td>2</td>
<td>Luang Prabang</td>
<td>31.3</td>
<td>280</td>
<td>126</td>
<td>45</td>
</tr>
<tr>
<td>3</td>
<td>Vientiane Province</td>
<td>38.9</td>
<td>294</td>
<td>166</td>
<td>56.5</td>
</tr>
<tr>
<td>4</td>
<td>Xayaboury Province</td>
<td>36.6</td>
<td>233</td>
<td>118</td>
<td>50.6</td>
</tr>
</tbody>
</table>
Table 12- Number of Malnutrition of under 5 years old (OPD) in 2009-2010

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Province</th>
<th>Total Number</th>
<th>Total %</th>
<th>Under 5 years old Number</th>
<th>Under 5 years old %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>National level</td>
<td>9,109</td>
<td>1.5</td>
<td>1,791</td>
<td>2.3</td>
</tr>
<tr>
<td>2</td>
<td>Luang Prabang</td>
<td>300</td>
<td>0.7</td>
<td>123</td>
<td>2.1</td>
</tr>
<tr>
<td>3</td>
<td>Vientiane Province</td>
<td>1,699</td>
<td>3.7</td>
<td>439</td>
<td>7.9</td>
</tr>
<tr>
<td>4</td>
<td>Xayaboury Province</td>
<td>554</td>
<td>1.5</td>
<td>115</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Table 13- Number and percentage of population using clean water and household latrine in 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Name of Province</th>
<th>Using clean water</th>
<th>Using household latrines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of population</td>
<td>Percentage</td>
<td>No. of HH</td>
</tr>
<tr>
<td>1</td>
<td>National level</td>
<td>4,673,664</td>
<td>76.3</td>
</tr>
<tr>
<td>2</td>
<td>Luang Prabang</td>
<td>340, 55</td>
<td>79.8</td>
</tr>
<tr>
<td>3</td>
<td>Vientiane Province</td>
<td>344, 36</td>
<td>75.3</td>
</tr>
<tr>
<td>4</td>
<td>Xayaboury Province</td>
<td>285, 82</td>
<td>79</td>
</tr>
</tbody>
</table>
4. HEALTH CARE FACILITIES AND EXISTING HEALTH SITUATION IN PROVINCES AND DISTRICTS RELATED TO THE SANAKHAM HPP.

4.1 Vientiane Province

Vientiane Province Health Office (PHO) is comprised of six health services sections, one provincial hospital (90 beds), 12 District Health Offices (DHO), 1 district hospitals with a total of 145 beds, 50 Health Centers (HC) with a total of 105 beds, 1,779 Village Health Volunteers (VHV) and 165 village drug revolving funds which covers 70% of the villages in the Province.

There are 798 health staff workers in the province, 169 (21%) are working in different sectors in the provincial level, 458 (57.3%) are working at the district level, 171 (21.4%) work at health centers and a large proportion of the village health volunteers (1,779) are working in the village level. The categorization of staff can be classified as 19 specialists/postgraduate, 136 medical doctors, 355 assistant doctors, 297 nurses and 13 others.

According to statistics collected from the Vientiane Provincial Health Office in 2009-2010, the ten (10) most common diseases and causes of illness and death in the Province are summarized in table as follows:

Table 14- Top ten causes of illness of Out Patients (OPD) in Vientiane Province in 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>tonsillitis, pharyngitis</td>
<td>17,373</td>
<td>10.7</td>
</tr>
<tr>
<td>2</td>
<td>common cold (influenza)</td>
<td>13,764</td>
<td>8.5</td>
</tr>
<tr>
<td>3</td>
<td>nervous system-non-psychiatric</td>
<td>12,849</td>
<td>7.9</td>
</tr>
<tr>
<td>4</td>
<td>pneumonia-bronchitis</td>
<td>10,384</td>
<td>6.4</td>
</tr>
<tr>
<td>5</td>
<td>watery diarrhoe</td>
<td>8,490</td>
<td>5.2</td>
</tr>
<tr>
<td>6</td>
<td>road accident with injury</td>
<td>4,604</td>
<td>2.8</td>
</tr>
<tr>
<td>7</td>
<td>trauma, all other</td>
<td>4,203</td>
<td>2.6</td>
</tr>
<tr>
<td>8</td>
<td>hypertension</td>
<td>3,872</td>
<td>2.4</td>
</tr>
<tr>
<td>9</td>
<td>helminthes parasites</td>
<td>2,571</td>
<td>1.6</td>
</tr>
<tr>
<td>10</td>
<td>others</td>
<td>77,061</td>
<td>47.4</td>
</tr>
</tbody>
</table>

Table 15- Top ten causes of illness of In patients (IPD) Vientiane Province 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>diarrhea</td>
<td>2,311</td>
<td>12.4</td>
</tr>
</tbody>
</table>
Table 16 - The Common causes of death in Vientiane Provincial Hospital in 2009 - 2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
<th>&lt; 5 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>acute respiratory infection (ARI)</td>
<td>8</td>
<td>1.7</td>
<td>7 12.7</td>
</tr>
<tr>
<td>2</td>
<td>severe watery diarrhea</td>
<td>2</td>
<td>0.4</td>
<td>1 1.8</td>
</tr>
<tr>
<td>3</td>
<td>Other causes</td>
<td>87</td>
<td>19</td>
<td>17 30.8</td>
</tr>
</tbody>
</table>

4.2 Sanakham District

Sanakham district health office (DHO) is comprised of an office and a hospital. The District Health Office consists of 3 departments: Administration, Health Promotion and Health Care. The District Hospital (DH) is located in the Sanakham town and has 15 beds; there are also 3 Health Centers (HC) with 9 beds. In addition, within the project area there are 2 Health Centers, one located at Ban Vang village, which serves 7 other villages as well as another one located at Khokkhaodo village which serves 6 villages. The total district health staff is 83 persons who are working in different areas within Sanakham Health services; this includes 1 medical doctor, 8 assistant doctors, 40 nurses and 14 other staff members. Twenty one members of the staff are working at the DHO, 50 work at the DH and 12 work at a HC. There are 86 village health volunteers (VHV) and 19 villages have a revolving drug fund.

Based on data collected from the Sanakham district health office, the common most causes of morbidity and mortality of the population include: respiratory Infection, malaria, influenza, nervous system-non psychiatric disease, tonsillitis-pharyngitis, gastro-enteritis diarrhea, eye diseases, skin diseases, road accidents, dental disease, dengue fever and tuberculosis (TB). The main causes of death reported by the health services throughout the district in 2009-2010 for children under five years of age are...
malaria and acute respiratory infection (ARI) while for adults it was hepatitis B, tuberculosis and road accidents.

4.3 Meun District:

The Meun district health office (DHO) is comprised of a Health office and a hospital (DH). The District Health Office is made up of 03 sections such as Administration, Health Promotion and Health Care sectors. The District Hospital is located in the Meuan district town with 10 beds and there are also 2 Health Centers (HC) with 9 beds. The total district health staff is 41 persons who are working in different sectors in Meun Health services including 8 medical doctor, 15 assistant doctors, 7 nurses and 13 other staff members. Seven members of the staff are working at the DHO, thirty work at the DH and 4 work at the HC. There are 23 village health volunteers (VHV), 17 birth attendants and 13 villages have a revolving drug funded.

Based on data collected from the Meun district health office, the most common causes of morbidity and mortality of the population include: respiratory infection, malaria, influenza, nervous system-non psychiatric disease, tonsillitis-pharyngitis, gastro-enteritis diarrhea, eye diseases, skin diseases, road accidents, dental disease, dengue fever and tuberculosis (TB).

The main causes of death reported by the health services throughout the district in 2009-2010 for children under five years of age are malaria and acute respiratory infection (ARI) and hepatitis, but tuberculosis and road accidents for adults.

4.4 Xayaboury Province

The Xayaboury Province Health Office (PHO) is comprised of 6 health service components, 1 provincial hospital (120 beds) located in the Provincial Capital of Xayaboury, 10 District Health Offices (DHO), and 10 district hospitals (a total of 278 beds), 70 Health Centers (HC) with a total of 179 beds, 622 Village Health Volunteers (VHV) and 245 village drug revolving funds which cover 100% of the villages in the Province. There are 682 members of health staff in the province, 179 (26%) are working in different areas at the provincial level, 328 (48%) in the district level and 175 (26%) work at health centers; of course most of the village health volunteer (622) are working at the village level. The categorization of staff can be classified such as specialists/postgraduate, 101 medical doctors, 238 medical assistants, 314 nurses and 2 other staff members.

According to statistics collected from the Xayaboury Provincial Health Office in 2009-2010 the existing health situation is a fertility rate of 3.3% with a life expectancy of 60 for male and 63 for women. Children less than 1 year old have a mortality rate of 38.6/1000 and children less than five years have a mortality rate of 53.4/1000. The maternal mortality rate is 405/100.000 and the ten (10) most common diseases and
causes of illness or death in Xayaboury Province are summarized in table 20-22 as follow:

Table 20 - Top ten causes of illness of Out Patients (OPD) in Xayaboury Province in 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>common cold (influenza)</td>
<td>7,603</td>
<td>10.3</td>
</tr>
<tr>
<td>2</td>
<td>tonsillitis, pharyngitis</td>
<td>6,285</td>
<td>8.5</td>
</tr>
<tr>
<td>3</td>
<td>nervous system non-psychiatric</td>
<td>5,305</td>
<td>7.2</td>
</tr>
<tr>
<td>4</td>
<td>minor surgery</td>
<td>4,481</td>
<td>6.1</td>
</tr>
<tr>
<td>5</td>
<td>diarrhea</td>
<td>3,396</td>
<td>4.6</td>
</tr>
<tr>
<td>6</td>
<td>pneumonia-bronchitis</td>
<td>3,340</td>
<td>4.5</td>
</tr>
<tr>
<td>7</td>
<td>trauma, all others of body</td>
<td>2,005</td>
<td>2.7</td>
</tr>
<tr>
<td>8</td>
<td>hypertension</td>
<td>1,312</td>
<td>1.8</td>
</tr>
<tr>
<td>9</td>
<td>road accident</td>
<td>1,275</td>
<td>1.7</td>
</tr>
<tr>
<td>10</td>
<td>malaria</td>
<td>918</td>
<td>0.8</td>
</tr>
</tbody>
</table>

Table 21 - Top ten causes of illness of In patients in (IPD) Xayaboury Province 2009-2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>tonsillitis, pharyngitis</td>
<td>1,220</td>
<td>7.7</td>
</tr>
<tr>
<td>2</td>
<td>severe watery diarrhea</td>
<td>1,015</td>
<td>6.4</td>
</tr>
<tr>
<td>3</td>
<td>pneumonia-bronchitis</td>
<td>975</td>
<td>6.1</td>
</tr>
<tr>
<td>4</td>
<td>road accident</td>
<td>648</td>
<td>4.1</td>
</tr>
<tr>
<td>5</td>
<td>nervous system non-psychiatric</td>
<td>611</td>
<td>3.8</td>
</tr>
<tr>
<td>6</td>
<td>hypertension</td>
<td>443</td>
<td>2.8</td>
</tr>
<tr>
<td>7</td>
<td>trauma, all other</td>
<td>371</td>
<td>2.3</td>
</tr>
<tr>
<td>8</td>
<td>common cold</td>
<td>306</td>
<td>1.9</td>
</tr>
<tr>
<td>9</td>
<td>malaria</td>
<td>170</td>
<td>1.1</td>
</tr>
<tr>
<td>10</td>
<td>severe malnutrition</td>
<td>133</td>
<td>0.8</td>
</tr>
</tbody>
</table>
Table 22 - The causes of death in Phongsaly Provincial Hospital in 2009 - 2010

<table>
<thead>
<tr>
<th>No</th>
<th>Causes of illness</th>
<th>Numbers</th>
<th>Percentage</th>
<th>&lt; 5 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Severe watery diarrhea</td>
<td>3</td>
<td>0.8</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Severe Acute Respiratory Infection (SARI)</td>
<td>15</td>
<td>4.2</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Other causes</td>
<td>120</td>
<td>33.3</td>
<td>26</td>
</tr>
</tbody>
</table>

4.5 Paklay District

The Paklay district health office is comprised of an office and a hospital. The district hospital is located in the Paklay district town and it has 24 beds and there are 8 Health Centers (HC) with 24 beds each. The total district health staff is 121 persons; 97 members work at the DHO and 24 work at the Health Centers. There are 93 village health volunteers (VHV), 98 birth attendants and 122 (100%) villages have revolving drug funds.

Based on the data collected from the district health office in Paklay district, the most prevalent diseases included: trauma and other injuries, gastro-enteritis, tonsillitis, pharyngitis, nervous system non-psychiatric, pneumonia-bronchitis, common cold (influenza), hypertension, road accident

4.6 Kethao District

The Kethao district health office (DHO) comprised of an office and a hospital. The District Health Office consists of 3 departments: administration, health promotion and health care. The district hospital is located in Keanthao district and has 20 beds and 10 Health Centers with a total of 30 beds. A total district health staff is 107 persons working in different sectors of Keanthao Health services. Eighty nine (83%) members of the staff are working at the DHO, eighteen (16%) work at the HC. There are 68 village health volunteers, 79 birth attendants and 21 villages have a revolving drug funded.

According to data collection from Kethao district health office, the most common causes of morbidity of the population are as follows: gastro-enteritis, tonsillitis-pharyngitis, diuretic infections, respiratory infections, diarrhea, influenza (Common cold), hypertension and road accidents.
5. CURRENT HEALTH SITUATION IN THE VILLAGE LEVEL

5.1 Access to Health Care Facilities

Besides ascertaining the health care facilities and infrastructure utilized by people in the survey area the team also sought to gain an understanding of the accessibility of the facilities and the main barriers to access. The most prevalent problem cited for limiting accessibility was the distance between the villages and district town hospitals and difficult or costly transport. The distances from the surveyed villages in Meuane district to the district hospital range from 31-75 km; villages in Sanakham district to the district hospital range from 1 km to 70 km; villages in Kanthao district are from 7-35 km from the district hospital; for Paklay district the distance is from 0.5 to 27 km.

5.2 The most common facilities people use for medical treatment

Health-seeking behavior is an important factor to understand when analyzing the health of a given population. Understanding the patterns in seeking medical care can assist to understand the healthcare gaps or the cultural barriers for improving health conditions. According to data obtained from the surveyed villages within the project area, people like to use the health services as such: district hospitals - 50%, pharmacies - 20%, village drug boxes - 12%, health centers - 10%, Provincial hospitals - 5%, central hospitals - 2% and health care in Thailand - 1%. It is important to note that people go for medical treatment at Provincial and Central hospitals when they have severe illness.

5.3 The crude birth rate (CBR) and crude death rate (CDR)

According to the surveyed villages it was found that the CDR rate during the period of one year (2009 – 2010) was different within Sanakham HPP area. For example, 4.4/1000 (CDR) in downstream villages but 3.2/1000 (CDR) in Upstream villages. However, the statistic shows that the crude death (CDR) were lower than the recorded national data (5.4 per 1000). The data is in the table 33.

Table 33- The crude birth rate (CBR) and crude death rate(CDR) in each cascade area

<table>
<thead>
<tr>
<th>Residence</th>
<th>Number of Live births</th>
<th>Number of deaths</th>
<th>CBR (per 1000)</th>
<th>CDR (per 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>National level (2005)</td>
<td>3,470</td>
<td>651</td>
<td>28.8</td>
<td>5.4</td>
</tr>
<tr>
<td>Vientiane Province</td>
<td>566</td>
<td>43</td>
<td>28.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Xayaboury Province</td>
<td>337</td>
<td>32</td>
<td>24</td>
<td>4.8</td>
</tr>
<tr>
<td>Downstream Villages</td>
<td></td>
<td></td>
<td></td>
<td>4.4</td>
</tr>
<tr>
<td>Upstream Villages</td>
<td></td>
<td></td>
<td></td>
<td>3.2</td>
</tr>
</tbody>
</table>
5.4 Water, Hygiene and Sanitation:

Safe drinking water is a basic need for human life. The main sources of water for drinking and domestic use were stream/river and gravity fed system (Namlin) and Bore-well which supported by the differences donors/organization such as UNICEF, Lao Lux; Interesting to note that in 35 of 39 surveyed villages have access to safe drinking water that mean every villages have Namlin and bore-well, all most families in district town have bottle drinking water. however, some villages have not enough water during dry season and they have to use stream/river for taking a bath, washing cloths. Villagers usually boil water for drinking if bottled water is not readily accessible. About 80% of households drink boiled water.

Hygiene and Sanitation is an important health indicator, inadequate disposal of human fecal waste is related to a range of diseases such as diarrhea, cholera and parasitic diseases. The hygiene data was obtained from the village head and village health volunteers of 39 villages. Approximately 66% of the households have latrines in downstream villages, 79% in upstream villages. Compared to the data from National Health Survey(2005) the residents in the project area having latrines is higher than the national average of 50.2% in 2005.

5.5 The most common causes of morbidity in the village

According to the data collection from the village health volunteers and the heads of villages, the common causes of morbidity in the villages within Sanakham HPP were acute watery diarrhea (50%), road traffic accident (33%), malaria and seasonal flu (28%), respiratory infection (18%), bloody diarrhea (12%), tuberculosis pulmonary (10%), hepatitis (7%) and drowning (5%).
5.6 The indicators of important health risk factors in the village

According to the 39 surveyed villages the most important health risk factors in Sanakham HPP were found to be smoking and alcohol (80%), followed by rice/food deficiency and poor sanitation (50-60%) and limited access to health care facilities, UXO, poor drinking water and poor living condition were low health risk factors (10-20%).

5.7 Current Preventative Health Care Programs

There are preventative health care programs in place in the project area which are ongoing programs. The mobile vaccination team is supported by GAVI and UNICEF and is run by the Health Centers and District Health Offices which provide vaccinations, such as BCG, DPT, Polio, Measles and Hepatitis B, Tetanus to children and pregnant women. The vaccinations are provided approximately four times per year in the surveyed villages. In addition, the Mother and Child Health group at the Health Centre and District Hospital also aims to provide antenatal and postnatal care. There is an anti-malaria program which is a national program implementing preventative measures on a national basis. Villagers are provided with a long-lasting impregnated mosquito bed net at a nominal price which was supported by a Global fund from 2005 – 2010.

The Family Planning project is an ongoing project in this area. It is an operation based on the national program focused on family planning services and providing contraceptives to the fertile women in the villages (supported by UNFPA) and other projects such as, TB control, HIV/AIDS control, Food security, Water supply and Latrines etc...(supported by DHO, PHO, Lao Red Cross (LRC), SIDA. For all of the above programs, the limitations are at the financial and human resources level. Each program requires ongoing access to scarce health care funds in order to make a long term impact on the health status of local villages.
6. IDENTIFICATION OF POTENTIAL AREAS OF IMPACT (PAIs)

The second step in the Health Impact Assessment (HIA) involved the identification of potential Areas of Impact (PAIs). For the purposes of this HIA, PAIs either represent the defined geographical area (e.g. villages close to the construction site) where impacts related to the project could be expected to occur or receptor groups (e.g. camp followers). PAIs identified for the Sanakham HPP are as follows: villages nearby the construction site; villages near the reservoir site; villages along transport routes; resettlement villages/households; construction camps; vulnerable groups (Children <5 years, pregnant women, handicapped persons, very poor persons/families and camp followers. Each of these potential areas impact is described in Table 34.

<table>
<thead>
<tr>
<th>Potential impact areas</th>
<th>Descriptions of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Villages nearby/Potential impact areas</td>
<td>Communities in the vicinity of the construction sites include three villages, one near to dam site and two near quarry sites. During the construction activities of the project there may be adverse effect on health from temporary disturbance of dust, noise and vibration and also an increased risk of accidents.</td>
</tr>
<tr>
<td>Affected upstream villages</td>
<td>3 upstream and 10 partially inundated villages will be relocated and their livelihood will be changed due to bio-physical changes and may be faced with issues such as worries and stress.</td>
</tr>
<tr>
<td>Construction camps</td>
<td>Construction camps with an average of 3,000 and a peak of 4,000 workers including technicians, staff/experts, and labourers may create work-related accidents, infectious diseases epidemics or other environmental-occupational health problems.</td>
</tr>
<tr>
<td>Gender and vulnerable groups</td>
<td>Within the villages potentially impacted by the project, a subsector of the population is likely to be particularly vulnerable to health impacts, especially vulnerable groups including children &lt;5 years of age, elderly people, poor and handicapped people as well.</td>
</tr>
<tr>
<td>Camp followers</td>
<td>There is a likelihood that large numbers of the worker’s families will collocate in the same geographical area as the working spouses. Experience from other infrastructure project in Lao PDR suggested that large numbers of vendors selling food and entertainment services will attempt to locate in the vicinity of construction camps. This may create health risk of communicable diseases such as Malaria and sexually transmitted diseases, etc.</td>
</tr>
<tr>
<td>Other issues for local residents</td>
<td>During construction phase the health of local residents may potentially be affected due to many changes, such as accidents, outbreak of diseases, increasing number of HIV and STIs cases and environmental health conditions.</td>
</tr>
</tbody>
</table>
The following table (Table 35) summarizes health risk impact mitigation measures and expected results after mitigation.

**Table 35: Health Risk Impact Mitigation During Construction Phase**

<table>
<thead>
<tr>
<th>Health Risk Issue</th>
<th>Cause and Exposure</th>
<th>Mitigation</th>
<th>Expected Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents and Injuries</td>
<td>Noise and Vibration</td>
<td>Personal protective equipment for workers</td>
<td>Reduced absenteeism and improved productivity</td>
</tr>
<tr>
<td></td>
<td>Heavy equipment and machinery during construction</td>
<td>Safety awareness and regulations; reliable inspection and monitoring system</td>
<td></td>
</tr>
<tr>
<td>Unsafe water or poor water quality</td>
<td>Water-vector borne diseases; communicable diseases; toxicity to fish and aquatic insects and human health</td>
<td>Water quality management; providing alternative of clean water system; proper management of hazardous material; treatment of water prior to discharge; appropriate site drainage management</td>
<td>Reduced incidence of morbidity and mortality among workers and communities</td>
</tr>
<tr>
<td>Respiratory and cardiovascular diseases</td>
<td>Air pollution from dust (fine particulates and gases)</td>
<td>Air pollution control, minimize dust through watering of roads.</td>
<td></td>
</tr>
<tr>
<td>Prevalence/incidence of communicable diseases</td>
<td>Increasing incidence of communicable diseases; for example, potential outbreaks of cholera or dengue fever.</td>
<td>Appropriate disease surveillance and response, hygiene – sanitation practice performed and enforced</td>
<td>Reduced incidence of morbidity and mortality among workers and communities</td>
</tr>
<tr>
<td>HIV/AIDS and other sexually transmitted Infection (STIs)</td>
<td>Migrant sex workers during construction and operation phases</td>
<td>Routine medical test for Infection, awareness campaign, provide condoms</td>
<td>Reduced cost of medical care and absenteeism</td>
</tr>
<tr>
<td>Malaria incidence</td>
<td>Increased breeding sites in water-filled excavations during construction</td>
<td>Surveillance and treatment, environmental management measures</td>
<td>Reduced incidence of malaria</td>
</tr>
<tr>
<td>Food and nutrition</td>
<td>Loss of productive land and decreased productivity of fisheries</td>
<td>Community development funds investment in sustainable agriculture and development of aquaculture</td>
<td>Reduced incidence of malnutrition in vulnerable groups (children &lt;</td>
</tr>
</tbody>
</table>
## Table 36: Matrix of health impacts associated with the Sanakham HPP (updated from ADB on Health Impact of Development Programs (Energy Sector))

<table>
<thead>
<tr>
<th>Health Issue</th>
<th>Cause and Exposure</th>
<th>Possible Intervention</th>
<th>Health Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>accidents and injuries</td>
<td>noise and vibration</td>
<td>personal protective equipment for workers</td>
<td>reduced absenteeism and improved productivity</td>
</tr>
<tr>
<td>unsafe water and water quality</td>
<td>water-vector borne diseases, communicable diseases, toxicity to fish and aquatic insects and human health</td>
<td>water quality management, providing alternative of clean water systems, proper management of hazardous material; treatment of water prior to discharge; appropriate site drainage management</td>
<td>reduced incidence of morbidity and mortality among workers and communities</td>
</tr>
<tr>
<td>respiratory and cardiovascular diseases</td>
<td>air pollution from dust (fine particulates and gases)</td>
<td>air pollution control; minimize dust trough watering of roads.</td>
<td>reduced incidence of morbidity and mortality among workers and nearby communities</td>
</tr>
<tr>
<td>prevalence/ increasing incidence</td>
<td>appropriate disease</td>
<td></td>
<td>reduced incidence</td>
</tr>
<tr>
<td>Health Issue</td>
<td>Cause and Exposure</td>
<td>Possible Intervention</td>
<td>Health Benefit</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>incidence of communicable diseases</td>
<td>incidence of communicable diseases may occur outbreak of cholera, dengue fever…</td>
<td>surveillance and response, hygiene – sanitation practice performed</td>
<td>morbidity and mortality among workers and communities reduced cost of medical care and absenteeism</td>
</tr>
<tr>
<td>HIV/AIDS and other sexually transmitted infection (STDs)</td>
<td>migrant sex workers during construction and operation phases</td>
<td>routine medical test for infection, awareness campaign, provide condoms</td>
<td>reduced incidence of malaria</td>
</tr>
<tr>
<td>malaria incidence</td>
<td>increased breeding sites in water-filled excavations during construction</td>
<td>surveillance and treatment, environmental management measures</td>
<td>reduced incidence of malnutrition in vulnerable groups (children &lt;5 years) communities improved of living condition reduced health impact project activities</td>
</tr>
<tr>
<td>food and nutrition status,</td>
<td>loss of productive land and decreased productivity of fisheries</td>
<td>community development funds investment in sustainable agriculture and development of aquaculture schemes</td>
<td>reduced incidence of malnutrition in vulnerable groups (children &lt;5 years) communities improved of living condition reduced health impact project activities</td>
</tr>
<tr>
<td>psychosocial-environmental.</td>
<td>noise from heavy trucks, heavy machinery and processing of construction changes in living patterns resulting from the project</td>
<td>proper noise control and management</td>
<td>reduced impact of changes in living patterns reduced of changes in traditional practices, and gender roles, relationship</td>
</tr>
<tr>
<td></td>
<td>changes in traditional practices, and gender roles, relationship</td>
<td>regular consultation with local communities</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>changes in traditional practices with the local communities; investment in and support for traditional practices</td>
<td></td>
</tr>
</tbody>
</table>
## APPENDIX 5: NGOS IN THE PROJECT AREA AND IN THAILAND

### 4.1 List of Non-Governmental Organizations in Project Districts

![Figure 76: NGOs in Sanakham District, Vientiane Province](image)

<table>
<thead>
<tr>
<th>NGO Name</th>
<th>Project Name</th>
<th>Activity Sectors Covered in this District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action with Lao Children (ALC)</td>
<td>Reading Promotion Project</td>
<td>Education; Health Care; Human Resources Development; Social Development</td>
</tr>
<tr>
<td>Agir pour les Femmes en Situation Precaire</td>
<td>Repatriation, Rehabilitation and Reintegration of Women Victims of Trafficking and Sexual Exploitation</td>
<td>Community Development; Education; Emergency and Humanitarian Relief; Human Resources Development; Income Generation &amp; Economic Development; Social Development</td>
</tr>
<tr>
<td>Association for Aid and Relief, Japan (AAR)</td>
<td>Project for Wheelchairs Production for People with Disabilities (PWD)</td>
<td>Health Care</td>
</tr>
</tbody>
</table>

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### Lao PDR

#### CUSO-VSO Lao (CUSO-VSO)
2004-2009 Cooperant
Agriculture, Forestry & Fisheries; Community Development; Health Care; Human Resources Development; Income Generation & Economic Dev.t; Natural Resources & Ecology; Social Dev.

#### Japan International Volunteer Centre (JVC)
Natural Agriculture in Development
Agriculture, Forestry & Fisheries; Human Resources Development; Natural Resources & Ecology

#### Pestalozzi Children's Foundation (PCF)
Empowerment of the Ethnic Minorities through Education project.

#### SNV Netherlands Development Organisation (SNV)
Capacity Development for Non-Timber Forest Products
Agriculture, Forestry & Fisheries; Community Development; Data Collection & Analysis; Human Resources Development; Income Generation & Economic Development; Natural Resources & Ecology; Social Development

#### WWF (WWF)
PADETC & WWF Laos - Water and Wetlands Awareness in Schools
<table>
<thead>
<tr>
<th>NGO Name</th>
<th>Project Name</th>
<th>Activity Sectors Covered in this District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action with Lao Children (ALC)</td>
<td>Reading Promotion Project</td>
<td>Education; Health Care; Human Resources Development; Social Development</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agir pour les Femmes en Situation</td>
<td>Repatriation, Rehabilitation and Reintegration of</td>
<td>Community Development; Education; Emergency and Humanitarian Relief; Human Resources Development; Income Generation &amp; Economic Development; Social Development</td>
</tr>
<tr>
<td>Precaire</td>
<td>Acting for Women in Distressing Circumstances (AFESIP)</td>
<td>Women Victims of Trafficking and Sexual Exploitation</td>
</tr>
<tr>
<td>Association for Aid and Relief, Japan (AAR)</td>
<td>Project for Wheelchairs Production for People with Disabilities(PWD) in Lao PDR</td>
<td>Health Care</td>
</tr>
<tr>
<td>Organization</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>CUSO-VSO Lao (CUSO-VSO)</td>
<td>2004-2009 Cooperant Agriculture, Forestry &amp; Fisheries; Community Development; Health Care; Human Resources Development; Income Generation &amp; Economic Programme; Natural Resources &amp; Ecology; Social Development.</td>
<td></td>
</tr>
<tr>
<td>Macfarlane Burnet Institute for Medical Research and Public Health (Burnet Institute)</td>
<td>HIV prevention among MSM under the program of Scaling up HIV and AIDS prevention, care and treatment in Lao PDR</td>
<td></td>
</tr>
<tr>
<td>Room to Read Laos (RtR)</td>
<td>Enhancing the Education of Lao Children</td>
<td></td>
</tr>
<tr>
<td>Save the Children Australia (SCA)</td>
<td>Xayaboury Primary Health Care Project</td>
<td></td>
</tr>
</tbody>
</table>
Figure 78: NGOs in Pak Lay District, Xayaboury Province

<table>
<thead>
<tr>
<th>NGO Name</th>
<th>Project Name</th>
<th>Activity Sectors Covered in this District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action with Lao Children (ALC)</td>
<td>Reading Promotion Project</td>
<td>Education; Health Care; Human Resources Development; Social Development</td>
</tr>
<tr>
<td>Agir pour les Femmes en Situation Precaire</td>
<td>Repatriation, Rehabilitation and Reintegration of Women Victims of Trafficking and Sexual Exploitation</td>
<td>Community Development; Education; Emergency and Humanitarian Relief; Human Resources Development; Social Development</td>
</tr>
<tr>
<td>(AFESIP)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Association for Aid and Relief, Japan (AAR)</td>
<td>Project for Wheelchairs Production for People with Disabilities(PWD) in</td>
<td>Health Care</td>
</tr>
</tbody>
</table>
Lao PDR

CUSO-VSO Lao (CUSO-VSO) 2004-2009 Cooperant Agriculture, Forestry & Fisheries; Community Development; Health Care; Human Resources Volunteer) Sending Development; Income Generation & Economic Programme Development; Natural Resources & Ecology; Social Development

Room to Read Laos (RtR) Enhancing the Education of Lao Children

Save the Children Australia (SCA) Xayaboury Primary Health Care

Health Care Project

4.2 List of Non-governmental Organizations in Thailand

**Animals**

1) Pic - A - Pet 4 Home
2) Hua Hin Dog Rescue Centre
3) Wild Animal Rescue Foundation of Thailand
4) Atigaro Project
5) Aquatic Animal Disease Division u
6) Animal Shelter at Thung Seekan
7) Elephant Hospital in Lampang
8) Animal Husbandry Foundation
9) Hornbill Research Foundation
10) Sueb Nakhasathien Foundation
11) Bird Conservation Society of Thailand
12) The Society for the Promotion of Animal Welfare Under Royal Patronage (Animal Shelter, Kanchanaburi)
13) Cat and Dog Fund
14) Save Thai Birds for Kids Project.
15) Wildlife Friends Foundation - Thailand (WFFT)
16) Love Wildlife Foundation - Thailand (LWL)

**Anti-Drug Campaigns**

17) Ruam Mit Centre in Chiang Mai
18) Anti-Drug Volunteer Association
19) Baan Poolsri Detoxification Centre (Soon Bambad Baan Poonsri)
20) Krong Karn Puea Dek Lae Yaowachon reabilitation center in Yasothorn province
21) Rebirth Therapeutic Community Centre (Soon Kerd Mai)
22) Hand in Hand Ministries

**Community Development**

23) Asia Foundation
24) ActionAid
25) Adventist Development and Relief Agency (ADRA)
26) Amaranth Greenpeace Funds International (AGF International)
27) American Refugee Committee
28) Asian Disaster Preparedness Center (ADPC)
29) Burma Border Consortium
30) Canadian Alliance for Development Initiatives and Projects
31) CARE International Thailand
32) Caritas International Thailand
33) Catholic Office for Emergency Relief and Refugees (COERR)
34) Common Interest Foundation
35) Compasio Relief & Development
36) Cooperazione e Sviluppo
37) Department for International Development (DFID)
38) Development and Education Programme for Daughters and Communities Center (DEPDC)
39) Eaglesrest, help for pastors
40) European Commission Humanitarian Office (ECHO)
41) Food and Agriculture Organization (FAO)
42) Phu Fa shops
43) Sustainable Community Development Foundation
44) Swiss Agency for Development and Cooperation (SDC)
45) Family Network Foundation
46) Fernthai Volunteer Foundation
47) Foundation for Child Development
48) Friends of the Samaritans
49) Heifer Project International (HPI)
50) Jesuit Refugee Service (JRS) Thailand
51) Peace Corps Thailand
52) Plan International
53) Rotary club of Pattaya
54) Rejoice Urban Development Project
55) The Development Cooperation Foundation
56) International Christelijk Steundfonds (ICS)
57) Graduate Volunteer Programme
58) Saleng Fund project
59) Catholic Mission in Human Development Centre
60) Phud Hong Leper Foundation
61) Spirit in Education Movement (SEM)
62) Wat Worachanyawas Fund
63) Fountain of Life
64) Forest Conservation Community Fund
65) Cold Water Relief for Children in Remote Areas Project, by The Thai Red Cross Society
66) Duang Prateep Foundation
67) Foundation for Lanna Artists
68) ThaiTogether Network
69) The Ngao Community Art Centre
70) The Foundation For Slum Child Care (The Milk and Supplementary Food Fund)
71) Foundation for Children, Baan Tan awan shelter
72) The New Light Foundation Nation
73) The Love Line Family Centre
74) The Post Library Project
75) The Khru Thim Bun-ing Foundation
76) The Phet Khlong Jan Community
77) Mu Koh Surin National Park
78) Ban Na Muean Sri Weaving Group
79) Fund for Research and Development Networks (FRDN)
80) The Club of Human Rightists of Isan region
81) Wat Klang Community's Recycling Bank Fund
82) The Phuen Ban Oon Jai Project
83) United Nations Development Program (UNDP)
84) United Nations Office for the Coordination of Humanitarian Affairs (OCHA)
85) USAID
86) World Food Program (WFP)
87) al Catholic Commission on Migration (NCC)

**Education and Children**

88) Abundant Life Foundation, Christian project
89) ActionAid Thailand
90) Adventist Development and Relief Agency (ADRA)
91) Adventist Southeast Asia Projects
92) Amaranth Greenpeace Funds International (AGF International)
93) Anglo-Thai Foundation
94) Asia Foundation
95) Baan Gerda home for AIDS orphans in Lopburi
96) Baan Unurak
97) Bangkok Post Scholarships
98) Better Thailand Foundation
99) Bright Dawn Foundation
100) Camillian social center in Rayong, operated by Saint Camillus Foundation
101) Camillian Home for Children Living with Disabilities Saint Camillus Foundation
102) Caritas International Thailand
103) Catholic Office for Emergency Relief and Refugees (COERR)
104) Child Watch Phuket
105) Child Workers in Asia
106) Child's Dream
107) Children's Shelter Foundation Chiang Mai Home and education for underprivileged and deaf children from the hilltribes
108) For Life, with support of Christian Care Foundation for Children with Disabilities
109) Compassion International
110) CWEFT (Concordia Welfare and Education Foundation Thailand)
111) Development and Education Programme for Daughters and Communities Center (DEPDC)
112) End Child Prostitution, Child Pornography and Trafficking of Children for Sexual Purposes (ECPAT) International
113) FACE (Fight Against Child Exploitation)
114) Foster Home
115) Foster Home for orphans
116) Foster sisters and brothers
117) Foundation For Children (FFC)
118) Hand in Hand Ministries
119) Healing for the Abused
120) Isara Foundation
121) Jesters Care for Kids, in Chonburi and Rayong
122) Mercy International Foundation, Christian
123) Mercy Ministries Foundation (MMF)
124) Mimi Vang Foundation (MVF)
125) Orphanage.org
126) Plan International Thailand Foundation
127) Saint Theresa's Boarding Centre, run by Redemptorists
128) Sarnelli House, for children affected or infected by HIV in Nongkhai
129) Sister Joan Evans
130) SOS Children's Village Thailand
131) The Human Development Foundation
132) Occupational training, by UNICEF
133) United Nations Children's Fund (UNICEF)
134) Volunteers in Asia
135) World Vision Foundation of Thailand
136) Youth Action Fund Thailand
137) Youth With A Mission (YWAM)
138) YWCA Pak Kret
139) Baan Had Thaeng village school
140) Baan Huay Moh Orphanage
141) Baan Ke Ra Kee Child Development Centre
142) Bangkok Metropolitan Administration's Toy Banks
143) Bangkok Refugee Center
144) Bicycle Donations
145) Chaiwat Un-kaew
146) Chaiyapruk Foundation
147) Chang Kham Church's Street Children Project
148) Child Institute, Foundation for Children
149) Children and Youth for Development Centre
150) Clean Drinking Water for Kids
151) Dek Rak Pah Fund
152) Duang Prateep Foundation
153) Ecumenical Coalition on Tourism ECOT (www.ecotonline.org)
154) Education for Children Project
155) Foundation for Education and Development of Rural Areas (FEDRA)
156) Foundation for Rural Children Development (Moonnithi Pua Dek Thai Nai Chonnabot)
157) Foundation for Rural Youth
158) Foundation for the Welfare of the Crippled
159) Holt Sahathai Foundation
160) Holy Mercy Home
161) Holy Mercy Home (Ban Phra Metta)
162) Home for Quality of Life Development Project.
163) Khom Loy Development Foundation
164) Last Wishes
165) Legal Aid Clinic
166) Life Skills Development Foundation
167) Malnourished children, run by the Foundation for Children
168) McKean Rehabilitation Centre, formerly a leper's colony
169) Mercy Center (Pattaya)
170) Mettapracharak Hospital's Eyeglasses Bank, Nakhon Prathom province
171) Nature Conservancy Club
172) Neo Humanist Foundation
173) Our School Projects
174) Pak Kret Dental Project
175) Pattaya Charity Network
176) Pattaya Orphanage
177) Pattaya Street Kids Support Project
178) Phibulsongkroh Foundation, Children's Fund.
179) Phyathai Babies' Home for boys
180) Powdered Milk Fund
181) Programme for Supporting Children's Education
182) Project for Ecological Recovery/Foundation for Ecological Recovery
183) Pure Heart Project
184) Recycled Bicycle Project, by Thailand Cycling Club
185) Saeng Thien Group Foundation
186) Safe Haven Orphanage
187) Santisuk Foundation
188) Save Thai Birds for Kids Project
189) School for Life (Chiang Rai)
190) Second Home for Child Labour, the Foundation for children's development
191) SET Foundation
192) Sparrow Home for babies of prisoners
193) Registered Charitable Foundation in Chiang Mai running Stratton House Childrens Home
194) Starfish Country Home School Foundation
195) Suan Kaew Foundation
196) Support the Children Foundation
197) Thai Children's Rights
198) The Alliance for Safe Children
199) The Bangkok Post Newspaper Foundation
200) The Daughter's Education Programme (DEPDC), saving girls from the sex trade
201) The Centre for Urban Tribal Youth, a unit of the Inter Mountain Peoples Education and Culture in Thailand Association (IMPECT)
202) The Child Labour Project
203) The Development of Older People Group
204) The Duang Prateep Foundation
205) The Foundation For Slum Child Care
206) The Fund for Khru Noi's Home
207) The Fund for the Development of Children Living Under Bridges
208) The Health Project for Tribal People
209) The Jintana-Eaksakdi Daengdej Library Foundation
210) The Karen Culture Education Fund
211) The Khru Thim Bun - ing Foundation.
212) The Mae Moon Man Yuen School
213) The Volunteers Group for Children's Development
214) The Youth Centre for the Promotion of Life Services and Environmental Awareness (YPLE)
215) Worldwide Faith Missions (Humanitarian programs)
216) Women Against Aids
217) World Education

**Elderly**

218) Adventist Development and Relief Agency (ADRA)
219) HelpAge International
220) Thai Volunteer Service Foundation
221) Thanyaburi Welfare Home for Destitute Women in Pathum Thani province
222) The Diocese Social Action Centre of Bangkok (DISAC)
223) Memorial Camillian Sisters Foundation
224) Thammaprakorn Home for the Aged.
226) Queen Sawangwattana Memorial
228) Foundation for Older Persons' Development

**Environment**

229) Plant A Tree Today Foundation
230) Tacomepai Organic Farm
231) The Project for Ecological Recovery/Foundation for Ecological Recovery
232) Khao Yai Conservation
233) Save Whale Shark for the Thai Sea Conservation Club (WSTC)
234) The Thai Fund Foundation
235) Khrong Karn Moo Bann Anurak Sud Pa (Wildlife Conservation Village Project)
236) Wildlife Fund Thailand
237) Yadfon Association
238) Ping Watershed Conservation Fund.
239) The Northern Farmers' Network, protect 100 community forests
240) Recycle Paper for Trees Programme
241) Kanchanaburi Environmental Group
242) Mangrove Ecology Study and Preservation Centre, Bang Taboon Wi aya School
243) The Forest Conservation Community Fund
244) Ban Wat Chand Rice Fund
245) Phu Wua Wildlife Sanctuary
246) Technology for Rural and Ecological Enrichment (TREE), or The Kao-Kwan Foundation
247) Committee for Natural and Environmental Conservation of 16 Institutes (CNEC)
248) The Forest Conservation Community Funds
249) World Wildlife Fund Thailand
250) The Panya Project

**Hilltribes**

251) Foundation for Karen Hilltribes in Thailand
252) Day-care centres for Karen children by Ralph Oberg
253) Karen Culture Education Fund
254) Chang Kham Church's Street Children Project
The Lower Klity village

Fund For the Innocents

Centre for the Coordination of Non-governmental Tribal Development Organisation (CONTO)

NGO Coordinating Committee on Tribal Development (NGO-CORD NORTH)

Ethnic Studies Network (Ethnet), Regional Centre for Social Science and Sustainable Development (RCSD), Chiang Mai University

Friends Without Borders

Karen Studies and Development Centre

The Karen Hilltribes Trust

**HIV/AIDS**

Baan Gerda home for AIDS orphans in Lopburi

Camillian social center in Rayong

Rejoice Charity

Suthasinee Noiin for Children and Youth Foundation

Sarnelli House

Siam-Care Thailand

Camillian Home for Children Living with Disabilities

Thai Red Cross Society, the AIDS Project

The Human Development Foundation

The Sem Pringpuangkeo Foundation

People with HIV/Aids Coordinating Centre

Agape Home in Chiang Mai

Life and Hope Club

Welcome House, by Catholic Mission AIDS

Mercy International, Christian

New Life Friends Centre
279) A.B.C - Aids Babies Centre in Chiang Mai
280) Community Aids Care Project, NorthNet Foundation
281) Sem Pringpuangkeo Foundation's Children Fund, Foster Parents Project
282) Health Hotline Fund
283) Pearl S. Buck International (Thailand)
284) Thammapakorn Home for the Aged
285) Thai Concern Foundation
286) Duang Prateep Foundation
287) Population and Community Development Association

**Human Rights**

288) Amnesty International Thailand
289) The Cross-Cultural Foundation (CrCF)
290) The Working Group on Justice for Peace (WGJP)

**Media**

291) Foundation for Community Educational Media, the organization who responsible for Prachatai online independent newspaper

**Information Technology**

292) The Center for World Information Technology Education (CWITE)

**Medical Help**

293) Adventist Development and Relief Agency (ADRA)
294) ANESVAD Foundation
295) Saint Camillus Foundation, runs Camillian Hospital
296) Catholic Office for Emergency Relief and Refugees (COERR)
297) Saint Louis Foundation, runs Saint Louis Hospital
298) Bone Marrow Transplant, Ramathibodi Hospital
299) Karen Studies and Development Centre
300) Aksorn Vechakarn Songkroh clinic, free clinic
301) Camillian social center in Rayong
302) Caritas International Thailand
303) Central Correctional Hospital, medical treatment for inmates
304) Jesuit Refugee Service (JRS) Thailand
305) Médecins Sans Frontières (MSF)
306) Thai Red Cross Eye Bank
307) People's Eye Care Foundation, at Bangkok Hospital
308) McKean Rehabilitation Centre in Chiang Mai, for victims of leprosy
309) The Duangkaew Foundation, Institute of Medical Research at Somdej Phra Pin Klao Royal Thai Naval Hospital, surgery for the poor
310) Compassion of Christ Mission (CCM), mobile clinics
311) Thai Red Cross Society
312) The "five-baht doctor" clinic
313) The Kalayanavisut Foundation at Wat Don Clinic, free treatment
314) We Care, a group of Thai-born USA citizens
315) Thai Red Cross Society's Organ Donation Centre
316) Tour de Thailand Charity Bicycle Rides
317) Tsunami Volunteer Center
318) Paediatric Cardiac Surgery Foundation
319) Pan Nam Jai Hai Nong
320) The Educational Programme for Chronically-ill Children at Chulalongkorn Hospital
321) Bone Marrow Transplant Club (BMC)
322) The Thai Industrialist Development Forum, gives artificial legs to needy patients free of charge
323) Thai Relief Project, in East Timor
324) Kong Tun Nuai Baht Diaw, "one baht heart"

325) Smile Thai Operation Project

**The Disabled**

326) Adventist Development and Relief Agency (ADRA)
327) The Foundation for the Mentally Retarded of Thailand (Special Olympics)
328) Arunyik Mushroom Research and Development Centre
329) Caritas International Thailand
330) Samakhom Dontrree Puer Khon Tah Bod (Music Association for the Blind)
331) Foundation to Encourage the Potential of Disabled Persons
332) Digital books for the blind, by NECTEC
333) Reconstructive surgery, by Red Cross
334) Kidney Foundation of Thailand, kidney transplantant
335) Foundation for Children with Disabilities (FCD)
336) Kasetsart University Demonstration School's Educational Research Centre for Children with Special Needs
337) Handicapped People's Fund of Na Pho District
338) Training for the mentally handicapped, Punyawuthikorn School
339) The Redemptorist Vocational School in Pattaya
340) The National Association of the Deaf in Thailand
341) The Christian Foundation for the B hind in Thailand
342) Fund for the Vocational Training Centre for the Blind in Chiang Mai
343) Nakhon Prathom Disabled Club
344) The Prosthesis Foundation
345) YWCA Pakkred
346) The Foundation for Handicapped Children
347) Christian Care Foundation for Children with Disabilities
349) Thai Industrialist Development Forum
350) Thailand Association of the Blind
351) Alternative Energy Project for Sustainability
352) International Support Group to the Department of Public Welfare
353) Disabled Peoples' International (DPI) Asia-Pacific Region

Women

354) Asia Foundation
355) Baan Unrak
356) Burmese Women Union
357) Fight Against Child Exploitation, protect Thai children from pedophiles
358) Foundation for Women
359) Goodwill Group Foundation, providing education, vocational training and career services for underprivileged Thai women
360) Hand in Hand Ministries
361) International Rescue Committee
362) Phibulsongkroh Foundation, Children's Fund.
363) Soon Puea Nong Ying, a club for teenage girls
364) The Emergency Home and Relief Fund for Women and Children in Distress, a unit of the Association for the Promotion of the Status of Women
365) The Friends of Women Foundation
366) The Kanitnaree Centre, help for rape victims
367) The Rahab Beauty Shop, emotional support and vocational training opportunities for bar girls to get out of prostitution
368) Refuge Ministries Thailand, Serving Disadvantaged Women and Children in Thai lan.
369) We women foundation, empowering unrecognized refugee women from Burma
Workers

370) Worker's CO-OP
371) Network of Health Service Complainants
372) Housing Security for Slum Dwellers
373) The Foundation for Children's Development
374) IDCCC, Christ Church, support for illegal workers
375) Lydia House for migrant workers
376) The Council of Work- and Environment-Related Patients' Network of Thailand (WEPT)
377) The Good Samaritan, help for hilltribe orphans