

# My Ly - Nam Mo Hydropower JSC



## Environmental and Social Impact Assessment NAM MO 1 HYDROPOWER PROJECT

### VOLUME VI Resettlement and Ethnic Minority Livelihoods Restoration Plan (REMLRP)

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## TABLE OF CONTENTS

Abbreviations and acronyms .....	3
CHAPTER 1 Purpose and aim of the REMLRP .....	2
CHAPTER 2 Purpose and aim of the REMLRP .....	3
2.1 Policies of the Government of Vietnam .....	3
2.2 Policies of the Government of Lao PDR.....	3
2.3 Resettlement policy of the WB group .....	3
2.4 Comparison of the policies of Vietnam and Lao PDR with the MIGA policy.....	4
CHAPTER 3 Project location .....	8
CHAPTER 4 Direct impact area.....	9
4.1 Inundation area.....	9
4.2 Downstream stretch .....	9
4.3 Socio-economic and cultural features of the affected villages .....	9
4.3.1 Population, ethnicity and poverty .....	9
4.3.2 Infrastructure and services.....	10
4.3.3 Health and Sanitation.....	10
4.3.4 Food and nutrition .....	11
4.3.5 Education.....	11
4.3.6 Livelihoods.....	11
4.3.7 Cultural heritage .....	12
4.3.8 Gender roles and issues .....	13
4.3.9 Major reasons for prevailing poverty .....	13
CHAPTER 5 Project impacts .....	15
5.1 Reservoir inundation.....	15
5.1.1 Villages to be inundated.....	15
5.1.2 Land to be inundated .....	16
5.2 Downstream area.....	16
5.3 Physical losses due to reservoir inundation and dam construction.....	17
5.3.1 Loss of private property.....	17
5.3.2 Loss of land .....	17
5.3.3 Loss of public infrastructure .....	17
5.3.4 Loss of cultural heritage.....	17
5.4 Non-physical losses due to reservoir inundation and dam construction.....	18
5.4.1 Loss of access to livelihoods resources .....	18
CHAPTER 6 Informed Consultation and Participation, ICP.....	19
6.1 Previous consultations .....	19
6.2 ICP process initiated.....	19
6.3 Main concerns from the affected people .....	19

CHAPTER 7 Grievance Redress Mechanism .....	21
CHAPTER 8 Monitoring.....	22
CHAPTER 9 Resettlement Policy Framework.....	23
9.1 Policy and Entitlement Matrix for the Nam Mo 1 Hydropower Project.....	23
9.1.1 Legal basis and standards .....	23
9.1.2 Proposed Nam Mo 1 Hydropower Project Policy for the PAPs .....	24
9.1.3 Relocation site selection process .....	25
9.1.4 Land acquisition and compensation process.....	25
9.1.5 Roles and responsibilities .....	26
CHAPTER 10 Livelihoods Restoration Plan.....	30
10.1 Fisheries Support Plan.....	30
10.1.1 Cage Fish Farming .....	31
10.1.2 Community Fish Farming.....	31
10.2 Agriculture Restoration Plan .....	31
10.2.1 Upland Farming Diversification .....	32
10.2.2 Soil Fertility Enhancement .....	33
10.3 Animal Husbandry and Veterinary Services Plan .....	34
10.3.1 Animal Husbandry Improvement .....	34
10.3.2 Extension and Veterinary Services .....	34
10.3.3 Forage Production .....	34
CHAPTER 11 Community Health and Sanitation Plan.....	35
11.1 Household water supply and management .....	35
11.2 Sanitation enhancement .....	35
11.3 Community waste management.....	36
11.4 Improved cooking devises.....	36
11.5 Community awareness and capacity building.....	36
11.6 Public health support .....	36
11.7 Emergency medical response.....	36
CHAPTER 12 Community Labor and Employment Plan .....	37
CHAPTER 13 Influx Management Plan .....	38
13.1 Community-based Public Awareness Program in project-area communities .....	38
13.2 Construction workers' HIV/AIDS Awareness Program .....	38
Annex VI.1 Map over the affected villages and administrative areas.....	40
Annex VI.2 Socio-economic and cultural overview of the villages to be relocated .....	41

## LIST OF TABLES

Table VI.1. Gaps between the MIGA policy on Involuntary Resettlement (PS5 and PS7) with the Lao PDR 2016 Decree (No. 84/GOL) and the Government of Vietnam policies ... 5  
Table VI.2 Villages in the expected reservoir inundation area of Nam Mo 1 HPP ..... 15  
Table VI.3 Villages in Vietnam and Laos with land areas to be inundated ..... 16  
Table VI. 4 Entitlement matrix for resettlement and compensation ..... 28

## LIST OF ANNEXES

Annex VI.1 Map over the affected villages and administrative areas ..... 43  
Annex VI.2 Socio-economic and cultural overview of the villages to be relocated ..... 44

## ABBREVIATIONS AND ACRONYMS

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

## **CHAPTER 1      PURPOSE AND AIM OF THE REMLRP**

The purpose of the Resettlement and Ethnic Minority Livelihoods Restoration Plan is to minimize adverse socio-economic and cultural impacts from the project on the people to be affected by the Nam Mo 1 HPP and to ensure that the status of their residential areas and their livelihoods and living standards after the project will be at least at the same level or improved compared to their current situation. The aim of the Plan is to ensure a feasible resettlement of the project affected people and improve their livelihoods. Further the Plan aims to improve the health and sanitation status of the resettled communities, contribute to their employment opportunities and mitigate potential social and health risks related to the HPP construction.

This REMLRP contains the process to be followed for preparing the Resettlement Action Plan (RAP), the Livelihoods Restoration Plan, the Community Health and Sanitation Plan, the Community Labor and Employment Plan and the Influx Management Plan that Proponent is responsible to provide for Nam Mo 1 HPP. The REMLRP also outlines the institutional responsibilities and Proponent cooperation with national agencies related to the planning, implementation and monitoring of these plans and programs.



## CHAPTER 2 RELEVANT POLICIES

### 2.1 Policies of the Government of Vietnam

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

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

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

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

### 2.2 Policies of the Government of Lao PDR

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

### 2.3 Resettlement policy of the WB group

The involuntary displacement and resettlement policy of the WB group include OP/BP 4.10 on Indigenous people, OP/BP 4.12 on Involuntary resettlement, and most



importantly, MIGA (2013) Performance Standard PS 5 on Land acquisition and involuntary resettlement and PS 7 on Indigenous people<sup>1</sup>.

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

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

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

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

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

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<sup>1</sup> MIGA PSs are identical to IFC PSs 2012.

**Table VI.1. Gaps between the MIGA policy on Involuntary Resettlement (PS5 and PS7) with the Lao PDR 2016 Decree (No. 84/GOL) and the Government of Vietnam policies**

ISSUE	MIGA PS (PS 5 & PS 7)	GOVERNMENT OF VIETNAM	GOVERNMENT OF LAOS
<b>Policy objectives</b>			
	PAP should be assisted in their efforts to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of project implementation.	Not mentioned. However, there is a provision of support to be considered by PPC to ensure displaced people have a place to live, to stabilize their living and production (Decree 47: Article 25). In case the amount of compensation/ support is not enough for resettled people to buy a minimum resettlement plot, they will be financially supported to be able to buy a minimum resettlement plot (Land Law 2013: Article 86:4; Decree 47: Article 27).	PAP are compensated and assisted to improve or maintain their pre-project incomes and living standards. (Decree 84: Article 1).
<b>1. Land property</b>			
Support for affected households that have no recognizable legal right or claim to the land they are occupying	Financial assistance to all PAP to achieve the policy objective (to improve their livelihoods and standards of living or at least to restore them, in real terms, to pre-displacement levels or to levels prevailing prior to the beginning of the project implementation, whichever is higher)	Only agricultural land used before July 1, 2004 is eligible for compensation. Other cases may be considered for assistance by PPC if needed. (Land Law Article 64, Article 92:2, Article 77:2; Decree No. 01/2017).	PAP who do not have legal land title, land use certificate or other acceptable documentation indicating their land use right, including customary and traditional land use right, only have the right to claim compensation for their lost assets such as house/structures, trees and/or crops, and not land (Decree 84: Article 8:4).
Compensation for illegal structure	Compensation at full cost for all structures regardless of legal status of the PAP's land and structure	No compensation, but PPC may consider assistance (Decree 47: Article 25).	PAP who do not have legal land title, land use certificate or other acceptable documentation indicating their land use right, including customary and traditional land use right, only have the right to claim compensation for their lost assets such as house/structures, trees and/or crops, and not land (Decree 84: Article 8:4).

ISSUE	MIGA PS (PS 5 & PS 7)	GOVERNMENT OF VIETNAM	GOVERNMENT OF LAOS
<b>2. Compensation</b>			
Methods for determining compensation rates	Compensation for lost land and other assets should be paid at full replacement costs.	Compensation for land is calculated at price that is consistent with the local market prices. PPCs are granted to identify compensation prices for different categories of assets. (Land Law Article 112) Independent land valuator can be used to determine land prices, which will be appraised by land appraisal board before PPC's approval (Land Law Article 115; Decree 44:Article 17); Procedures for land price determination are regulated in Decree 44: Article 12.	Value for compensation for land, constructed facilities, crop products, livestock and potential incomes are estimated in consultation with affected people by selecting the right and appropriate options based on prices applied by the state, market prices or average prices applicable for period of compensation and based on the types of properties and locations. The prices applied by the state (middle prices) are the prices specified in a separate regulation which are identified and regulated by the Ministry of Natural Resources and Environment from time to time. (Decree 84: Article 9)
Compensation for loss of income sources or means of livelihood	Loss of income sources should be compensated (whether or not the affected persons must move to another location)	Assistance in respect of income loss is given only for registered businesses. Assistance measures to restore income sources are provided. (Decree 47:Article 19-21).	Provision of agriculture land in appropriate ways including the creation of new livelihood options and stable income generation activities and promotion of local crafts/industry in addition to agricultural production activities for the affected people. (Decree 84: Article 15:1)
Compensation for indirect impact caused by land or structures taking	it is good practice for the borrower to undertake a social assessment and implement measures to minimize and mitigate adverse economic and social impacts, particularly upon poor and vulnerable groups.	Land owners are eligible for compensation for damage on assets attached to land or for breach in business activities (Land Law Article 88). No special consideration to poor or vulnerable mentioned.	Not mentioned.
Livelihoods restoration and assistance	Provision of livelihoods restoration and assistance to achieve the policy objectives	Livelihood restoration and assistance measures are provided. No follow-up for full livelihoods restoration after resettlement completion. (Decree 47: Articles 19-25).	Parallel with the resettlement plan, a livelihoods rehabilitation plan have to be established (Decree 84: Article 13)

ISSUE	MIGA PS (PS 5 & PS 7)	GOVERNMENT OF VIETNAM	GOVERNMENT OF LAOS
Consultation and disclosure	Participation in planning and implementation, specially confirming the eligibility criteria for compensation and assistance, and access to Grievances Redress Mechanisms	Consultation during planning in coordination with CPC (consultation on draft plan of compensation, support and resettlement and plan for training, career change and job searching facilitation. Not mentioned that the affected people should attend, but the purpose is dialogue with those who are opposing the plan, in order to improve the plan. No mention of meaningful consultation or method of consultation. (Land Law Article 69).	Compensation and resettlement shall be carried out in compliance with principles of ensuring equality, correctness, transparency, disclosure and fairness (Decree 84: Article 5:2); and ensuring coordination, consultation and participation between the project owner, affected people, state agencies and other relevant stakeholders (Decree 84: Article 5:3).
<b>3. Grievance redress mechanism</b>			
Grievances	Grievance redress mechanism should be independent	The same governmental body makes decisions on compensation and resettlement and handles grievances. However, if no agreement can be reached, complaints can be brought into court by PAP. (Decree 47; Circular 37)	In the first hand complaints are submitted to the Operation unit and Management unit of compensation and resettlement that coordinate with project owner to settle the request. If no agreement is reached, PAP are entitled to file a request to Province Committee for Compensation and Resettlement for settlement with project owner. (Decree 84: Article 24:1)
<b>4. Monitoring &amp; evaluation</b>			
Due Diligence	Internal and independent monitoring are required	Citizens are allowed to supervise and report on breaches in land use and management on their own (or through representative organizations), including land recovery, compensation, support and resettlement (Land Law 2013: Article 199). There are no explicit requirements on either internal or external monitoring of resettlement.	Project owner must set up a management unit for compensation and resettlement to be in charge of regular periodic internal monitoring. The unit is obliged to deliver reports to state audit-inspection organizations on monitoring and investigation of the implementation of the plans for compensation and relocation and for livelihoods restoration (Decree 84: Article 27)

## CHAPTER 3 PROJECT LOCATION

The 90MW Nam Mo 1 Hydropower Project is located in the boundary area of Vietnam - Lao PDR on the Nam Mo River. The main components and auxiliary areas are located in Ta Ca commune, Ky Son district, Nghe An province, Vietnam. The planned dam will be 95.5m high and create in the river upstream the dam wall a 32 km long reservoir lake that will submerge an area of 962ha at the full supply level of 235m. The first 1km long passage of the reservoir is located in the Vietnamese territory. The middle passage of the reservoir is 32km length and is located along the Vietnam - Lao PDR boundary line, in which the right bank of the reservoir is located in Nghe An province in Vietnam and the left bank of the reservoir is located in Xiangkhoang province of Lao PDR.

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

## CHAPTER 4 DIRECT IMPACT AREA

### 4.1 Inundation area

The Nam Mo 1 HPP reservoir at FSL will have an elevation of 235 m and an inundation area of 962ha. The area is upland forested area with steep slopes. Several isolated villages are located along the river close to the river bank and are in the reservoir inundation area.

Nine villages in Vietnam and one village in Laos are expected to be inundated by the Nam Mo 1 HPP reservoir. In Muong Ai commune the village of Muong Tip and in Muong Tip commune Xop Tip, Xop Phe, Cha Lat, Vang Ngo and Ta Do villages by the river will be inundated; further down near the dam site in Ta Ca Commune the villages of Sa Vang, Na Nhu and Nhan Ly are within the reservoir inundation area. In Nonghed District in Laos, the village of Namuang will be inundated by the reservoir.

The Project will also inundate land in the area of Tien Tieu and Khanh Thanh villages in Nam Can Commune in Vietnam and in Sanche, Kenglet, Phavanh and Longkoang villages in Nonghed District in Laos.

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

### 4.2 Downstream stretch

One village, Nhan Cu in Ta Ca Commune located 2.1km downstream the damsite will be potentially affected by low flow during the dry season. However, Nhan Cu is located in the Nam Mo HPP reservoir area and affected by the HPP (see Vol. I Chapter 11.7 of this ESIA on the cumulative impacts).

### 4.3 Socio-economic and cultural features of the affected villages

#### 4.3.1 Population, ethnicity and poverty

Almost all the people in the project areas in both countries originate from different ethnic groups/minorities<sup>2</sup>. In the Vietnamese area they are Kho mu and Hmong mu ethnic minority people and in Laos Kho mu with their own identity, language and cultural features. In most villages one ethnic group is dominating and people have family ties with each other; The ethnic groups in Vietnam and Laos are related to each other, some people have moved across the national border and settled down on the other side, and villagers have regular social and economic interaction with each other over the border river.

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<sup>2</sup> In Vietnam, the Government recognises totally 54 ethnic groups, of which the Kinh (Vietnamese) is the majority population with 87% of the national population, and all the other groups are defined as ethnic minorities. In Laos, people are ethnically divided into three main ethnic groups: (1) The Lao Loum, who are also called the Lao Thai or the Lowland Lao, who make up approx. 75% of the population in the country; (2) Lao Theung, the midlands people, consisting of 58 sub-groups, among them the Kho mu; and (3) Lao Soung, the highland people consisting of the Hmong and Yao as the main sub-groups and making about 10% of the national population. The term ethnic minority is not used. (sources: <http://minorityrights.org/minorities>; <https://www.luangprabang-laos.com/The-people-tribes-and-ethnical>). Majority of the villages to be affected by the Nam Mo 1 HPP are located in Vietnam, villagers have relatives in both countries and belong to the same ethnic group. Therefore the Vietnamese term *ethnic minority* is used for the project-affected people.



All the households in the affected villages are extremely poor, under of just above the poverty line as defined by the GoV<sup>3</sup> and the GoL<sup>4</sup>.

#### 4.3.2 Infrastructure and services

The affected villages are located remotely and can be accessed along soil roads that become poorly vehicle accessible during the rainy season. Local people travel either by motorcycles or on foot, and people are used to walking long distances of many kilometers to their agricultural fields or to the commune center. In most villages only a few households if any own a boat that is used for transportation of goods and sometime of people along the Nam Mo River. However, due to road access and due to Nam Mo HPP that has disrupted river transportation by cutting off the waterway, boat transportation is not commonly used

All the villages to be affected by Nam Mo 1 HPP in Muong Ai and Muong Tip communes are connected to the national electricity network, while the households in Ta Ca Commune lack grid electricity and each household has a micro-hydropower (so-called pico) generator in the Nam Mo River or in a tributary stream next to the village, providing petty electricity just enough for a few hours of lighting and TV. Namuang village in Laos has grid electricity.

Household water is lead from tributaries and mountain streams to water tanks in villages that have been constructed through government or donor programs. These water tanks are built with bricks, covered with cement, have water taps and sometimes a washing room beside. Household water for cooking, drinking and washing is taken from these water tanks. Villagers in Vietnam lack skills to maintain the water systems, and in some villages pipes are blocked or taps broken. Additionally, villagers use the Nam Mo River and its tributaries for washing and bathing, as well as for watering animals.

#### 4.3.3 Health and Sanitation

Hygienic conditions in the remote villages are in general very poor. Household water has to be carried from village water tanks or from streams to houses. Villages in Ta Ca commune lack toilets, but in some of the villages in Muong Tip 20-25% of households have rudimentary toilets that are not well maintained. Pigs, poultry and dogs roam freely in the villages that lack any rubbish disposal system, and litter is thrown anywhere in and outside the village. The standard of knowledge about health, hygiene and nutrition is poor and based on tradition.

Health care services are available in the commune health centers with road access, and the use of health services is highly dependent on the distance of each village to the commune center where the health center is located. Most women give birth at home in the village, assisted by other women. Nowadays increasing number of younger women visit the health center at least once during pregnancy, deliver their

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<sup>3</sup> The official poverty line in Vietnam 2016–2020 issued through the GoV Decision No. 59/2015/QĐ-TTg *Promulgating multidimensional poverty levels applicable during 2016-2020* is for urban areas 900,000VND/capita/month and for rural areas 700,000VND/capita/month. 1USD=22,700VND

<sup>4</sup> The official poverty line in Laos 2010–2015 issued through the Decree No.285/PO *Poverty and development standard 2010-2015* is for country level 192,000 LAK/capita/month, for urban areas 240,000 LAK/capita/month and for rural areas 180,000 LAK/capita/month. 1USD≈8,300LAK.

babies at the clinic. There are few maternal or infant death cases reported during the recent years, but quite many miscarriages due to the hard physical labor women undertake even when pregnant.

#### 4.3.4 Food and nutrition

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

#### 4.3.5 Education

According to the Vietnamese government standard, there is a kindergarten and a primary school in every village. Secondary boarding school is located in the commune center. GoV provides boarding support for ethnic minority children with home villages more than 7km from the school. Children stay in the school the entire week, go home on Saturday afternoon after school and return to school on Sunday evening. Government support covers only tutoring and boarding, and parents have to send rice and other food with their children to the school. High school is located in the district town of Muong Xen, where parents have to pay their children's accommodation, which most of them cannot afford, so very few children from the poor remote villages continue their education at high school level. In Namuang village in Laos, the elder Kho mu people are illiterate, but most people can communicate in the Lao language and all children are reported to go to school.

In the villages the ethnic minority people use their own ethnic language in everyday communication. Women regularly have lower education level than men, because girls drop out of school early during the secondary school in order to help their families with household work. Most elder ethnic minority women are not able to communicate fluently in Vietnamese, and in some villages almost all the elder women are illiterate. Road access and distance to school appear to be a decisive for children's school attendance or dropping out of school.

#### 4.3.6 Livelihoods

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

**Livestock farming** is the most important livelihood after farming for people in the remote villages. All households have chicken and geese for family food, pigs are grown mostly to be sold but also to be eaten at special occasions as festivity food in the village. Animal diseases and deaths are not uncommon, especially among pigs and

chicken that are roaming freely in the villages, and epidemics and cold weather kill even cattle. Animal deaths are reported to be more common in the villages in Vietnam than in Namuang village in Laos, where veterinary services are reported to be available in case animals get sick. In Vietnam, villagers appear to treat animals with traditional and home-made medicines before contacting the commune veterinary services. Most families have a few cows and some households even have buffaloes, which both are kept entirely for selling to generate cash. Together with goats kept by some farmers they are grazing in riverbank grasslands and forests near the upland fields. Animals can roam freely because there are no wildlife predators in the nature.

**Forest resources** are the crucial base for the daily food and provide approximately 50% or more of the livelihoods of the people in the riverside villages. Non-timber forest products are important for household food, medicine supply and economy. Women collect bamboo shoots and wild-growing vegetables and mushrooms every day for family food. Some NTFPs like mushrooms, bamboo shoots and medicinal herbal plants are sold to traders. Men collect firewood and do logging of timber that is both used for construction of houses and other structures in the village, and sold to traders. Hunting of birds, rats, bamboo rats, squirrels and snakes is done regularly for household food, mainly with crossbows and traps, and wild boars are hunted during the harvest season near the upland fields.

Forests in Laos have significantly better timber resources than forests in Vietnam where logging and swidden agriculture have deployed vast areas of any good quality timber. Vietnamese men are both working in forestry in Laos, and buying up and trading timber from forests in Laos. Illegal logging appears to be common, even if not openly reported. Income from timber and NTFPs is important for the local people.

Many households in the villages along the **Nam Mo River** to be affected by the HPP are **fishing** in the river and its tributaries several days per week, and fish is significant as family food. Men are fishing with nets, women and children are using baskets, and also collecting shrimps, snails and moss in the shallow river. Fish is an important protein source for the inhabitants along the Nam Mo River and its tributary rivers. A few households in two villages, Muong Tip in Muong Ai Commune and Cha Lat in Muong Tip have fishponds for raising fish from the river.

Market infrastructure is very deficient: the nearest market to the project-affected villages is in the district town of Muong Xen, which is too far away for the poor farmers to take their products for selling. Mobile traders enter the villages and buy rice, corn, timber, firewood, NTFs and animals hunted by villagers. Traders buy products in the villages under market prices, and at the same they bring household products and sell them to villagers over market prices.

**There are very few non-agricultural labor** opportunities in the commune area. Seasonal labor migration of mostly young men and women takes place to the province capital Vinh City, to Ho Chi Minh City in the South, to Dalat and other places in Vietnam. Some people are recorded to have labor-migrated abroad.

#### 4.3.7 Cultural heritage

People in the villages along the Nam Mo River belong to the ethnic groups of Kho mu and Hmong. Forest and river provide their needed resources and form the context for their way of living. Naturally forest and river also comprise the central spiritual elements in their culture. The local worldview contains gods/spirits related to different elements and places in nature, additionally every family respects its household gods/spirits and ancestors' spirits.

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

#### **4.3.8 Gender roles and issues**

In the villages to be affected by the HPP, women undertake hard physical work in agriculture side by side with men, and they collect daily NTFPs and firewood in the forest while hunting is the task of men only. Women are in general not fishing with nets, but they use baskets for catching fish and they collect snails, shrimps and moss in the shallow water. Women are traditionally responsible for cooking and taking care of children.

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

#### **4.3.9 Major reasons for prevailing poverty**

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

Cultivation is rain fed and there are no irrigation systems. Agricultural and livestock services are very deficient in Vietnam, in Laos veterinary services appear to be better available and consequently animal mortality lower than in Vietnam. Support and advice from the commune is lacking, and farmers lack sufficient skills to take care of the animals that they receive through government development programs.

Villages are remote, far away from the district center both in Laos and in Vietnam, and poor road infrastructure affects people's mobility and market access. Market infrastructure is undeveloped with the only available markets in the district towns. Most villagers rarely visit the district center. Mobile traders buy agriculture and forest products from farmers in the villages for low prices and sell them household goods for high prices.

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

## CHAPTER 5 PROJECT IMPACTS

### 5.1 Reservoir inundation

#### 5.1.1 Villages to be inundated

Totally nine villages in Vietnam and one village in Laos are expected to be inundated by the Nam Mo 1 HPP reservoir and have to be relocated. In Muong Ai commune the village of Muong Tip with 16 households and 84 people need to be relocated. In Muong Tip commune Xop Tip village with 146 people in 29 households, in Xop Phe village with 360 people in 76 households, and in Ta Do village 556 people in 99 households need to be relocated. Two villages in Muong Tip commune consist each of two hamlets and one hamlet in each village will be inundated: Cha Lat village with 92 people in 16 households (of the total 166 people in 29 households) and Vang Ngo village with 130 people in 17 households (of the total 356 people in 47 households) need to be relocated. Moreover, Muong Tip commune center is located in Vang Ngo village next to the river, so the commune office and commune health center will be inundated as well.

In Ta Ca Commune three villages will be inundated and have to be relocated: Sa Vang village with 510 people in 97 households, Na Nhu village with 360 people in 67 households and Nhan Ly village with 275 people in 51 households.

In Nonghed District in Laos, the village of Namuang will be inundated. The village has 224 people in 34 households that have to be relocated.

All the affected villages are extremely poor with great majority of the people living under the national poverty line and the rest of the village households being near-poor. Table 8.1 below presents an overview of the villages that will be inundated in the reservoir area of the Nam Mo 1 HPP.

A description of each affected village is enclosed in Annex VI.2.

**Table VI.2 Villages in the expected reservoir inundation area of Nam Mo 1 HPP**

NAM MO1 HPP VILLAGES TO BE RELOCATED				
Village	HH	Pop.	HH poverty %	Ethnicity
<b>Muong Ai Commune – Vietnam</b>				
Xop Tip	16	84	88	Kho mu
<b>Muong Tip Commune – Vietnam</b>				
Xop Tip	29	146	86	Kho mu
Xop Phe	76	360	78	Kho mu
Cha Lat	16/29*	92/166	100	Hmong
Vang Ngo	17/47**	130/356	85	Hmong, Kho mu
Ta Do	99	556	97	Kho mu, Thai***
Subtotal Muong Tip Commune	237/280	1,284/1,584		
<b>Ta Ca Commune – Vietnam</b>				
Sa Vang	97	510	100	Kho mu, 6 HHs Thai
Na Nhu	67	360	100	Kho mu
Nhan Ly	51	275	100	Kho mu
Subtotal Ta Ca Commune	215	1,145		
<b>Total Vietnam to be relocated</b>	<b>468</b>	<b>2,513</b>		



Nonghed District – Laos				
Namuang	34	224	77	Kho mu
<b>Total Laos to be relocated</b>	<b>34</b>	<b>224</b>		
<b>Total Nam Mo 1 HPP</b>	<b>502</b>	<b>2,737</b>		

\* Village consists of 2 hamlets, one by the river with 16 HHs, and the other higher up with 13 HHs.

\*\* Village consists of 2 hamlets, commune center is in the lower hamlet and will be inundated.

\*\*\*5 Thai HHs relocated in 2006 from Ban Ve HPP.

### 5.1.2 Land to be inundated

Added to the villages that will be inundated, land in the area of two villages in Nam Can commune in Vietnam will be inundated. In Laos, four villages that are located far from the river have land areas along the river. The villages that will lose land in the reservoir can be seen in Table VI.3.

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

NAM MO 1 HPP VILLAGES WITH LAND LOSSES					
Village	HH	Pop.	HH poverty %	Ethnicity	Impact
Nam Can Commune – Vietnam					
Tien Tieu	170	420	61	Hmong	Production land and protection forest area by the river
Khanh Thanh	76	386	74	Kho mu	Land to be inundated 9ha protection forest and abt 25ha cultivation land, fishponds, fruit trees, grassland belonging mainly to CPC Vice chair, and to 3 other HHs.
Nonghed District – Laos					
Sanche			These villages are located far away from the Nam Mo River and separated from it by a steep mountainous terrain. However, according to the ASA ESIA Report (Aug 2016), land along the river is associated to these four villages (ownership or management). There is no information in the ASA report about the type of land and its utilization. The riverside in these areas is steep and probably not in an active use by the named villages. The affected areas, their status and utilization have to be investigated during the detail design phase.		
Kenglet					
Phavanh					
Longkoang					

### 5.2 Downstream area

Nhan Cu village in Ta Ca Commune is located 2.1km downstream the planned Nam Mo 1 dams site and therefore will be potentially affected by reservoir water regulations and dry season low flow. However, Nhan Cu is located in the existing Nam Mo HPP reservoir area and affected by the HPP (see further Vol. I Chapter 11.7 on the cumulative impacts).

**Table VI.4 . Downstream village of Nam Mo 1 HPP**

NAM MO 1 HPP VILLAGE IN THE POTENTIAL DOWNSTREAM IMPACT AREA					
VILLAGE	HHS	POP.	HH POVERTY %	ETHNICITY	LOCATION
Nhan Cu	35	158	100	Kho mu	2.1 km downstream the dams site, in the Nam Mo HPP reservoir area.

## 5.3 Physical losses due to reservoir inundation and dam construction

### 5.3.1 Loss of private property

Affected households will lose their private houses and attached assets. The structures include: (i) family home;

(ii) barn for preserving agricultural products

(iii) fence around the house.

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

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

### 5.3.2 Loss of land

The land to be inundated consist of:

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

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

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

(iv) animal grazing land

### 5.3.3 Loss of public infrastructure

The reservoir will inundate public infrastructure in villages and adjoining areas, including:

(i) Village access road

(ii) Inter-village roads

(iii) Water supply system with water tanks and water pipes leading water from streams to village

(iv) Village cultural house

### 5.3.4 Loss of cultural heritage

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

(i) village spirit forest located at some distance from the village in a protection forest area

(ii) graveyard located outside village

(iii) village worship place under a big tree with a small wooden spirit house or altar for offerings

## 5.4 Non-physical losses due to reservoir inundation and dam construction

### 5.4.1 Loss of access to livelihoods resources

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

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

## CHAPTER 6 INFORMED CONSULTATION AND PARTICIPATION, ICP

### 6.1 Previous consultations

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

### 6.2 ICP process initiated

The ICP process was initiated in June 2017 when a Vietnamese communication team hired by the PO according to advice from and designed by the IC undertook informed consultations in all the villages to be affected by the HPP. Villagers were provided information about the planned project, its impacts and proposed mitigation measures in a way and using communication methods that were understandable for them. Their questions, opinions, views and concerns on the project impacts and proposed mitigation were discussed and recorded in a village consent document in each village to be relocated. In those villages that will lose riverside land but not be relocated, the consultant had similar consultations with the Village leader. Details on the consultations, methodology used, issues dealt with, and the consent agreed with each village are reported in the Public Communication and Disclosure Plan (PCDP) for Nam Mo 1 HPP (Volume V of this ESIA). The ICP/FPIC process obtained *board community support* for the Project and willingness to relocate.

### 6.3 Main concerns from the affected people

People in all the villages to be relocated agreed in principle to the relocation, but some of them expressed concerns and had alternative suggestions for the proposed relocation site<sup>5</sup>. Relocation site and the available land and water resources in the location were the most important criteria for the affected villagers to agree to the relocation. Other main concerns that commonly came up in the consultations include:

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

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<sup>5</sup> The relocation site for each affected village in Vietnam is proposed in the GoV General Resettlement Planning document prepared by Nghe an Forestry Planning Division in 2015. This document is still being approved by Nghe An Province Government. The proposed relocation sites of the affected Lao villages are presented in the ESIA (2016) prepared by ASA Power Engineering Company, hired by the Proponent, which according to the document were identified together with District and village authorities and the PAP. The ESIA has to date not been approved by the GoL.

- Request that people will screen the proposed relocation site together with the project planning team in order to verify the location, land and water availability, etc.
- Request that people are involved in the design and relocation of the village, location of graves and spirit forest;
- Request that people are involved in monitoring the village construction, and that all the public infrastructure has to be on place before relocation of households;
- Forest protection and management and the income it brings local people is important, and should not be disrupted by the relocation;
- Land use certificates have to be issued on the new location to all households
- There has to be a monitoring and grievance system, and villagers have to be involved in the monitoring.

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

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

## **CHAPTER 7      GRIEVANCE REDRESS MECHANISM**

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

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



## CHAPTER 8 MONITORING

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

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

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

## CHAPTER 9 RESETTLEMENT POLICY FRAMEWORK

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

### 9.1 Policy and Entitlement Matrix for the Nam Mo 1 Hydropower Project

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

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#### 9.1.1 Legal basis and standards

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

- Agreement between the GoV and GoL. Agreement Between the Government of the Lao Peoples Democratic Front and the Government of the Socialist Republic of Vietnam of 11 March 2016;
- *Decree on Compensation and Resettlement of People Affected by Development Projects* (Decree No. 84/GOL, 2016);
- Land Law 2013 which is effective from Jul. 1st, 2014 of the GoV and Decree No. 01/2017 / ND-CP amending the decree guiding the Land Law;
- Decree No.38/2013/NĐ-CP on management and utilization of official development assistance (ODA) and concessional loans from donors;
- Decree No.44/2014 of the Government regulating land prices, Decree No. 104/2014/ND-CP on land prices, and Circular detailing a number of articles of the government's decree no. 43/2014/NĐ-CP and decree no. 44/2014/NĐ-CP dated may 15, 2014;
- Decree No.47/2014/NĐ-CP of the government of May 5th, 2014 on compensation, support and resettlement upon land expropriation by the State, which is effective from Jul. 1st, 2014;
- Circular No. 37/2014/TT-BTNMT of June 30th, 2014 on detailed regulations on compensation, support, and resettlement upon land expropriation by the State;

- MIGA (2013) Performance Standards (PS) PS 1, PS 5, PS7, and International Finance Corporation (IFC 2012) guidelines and performance standards PS 1, PS 5, PS 7.

### **9.1.2 Proposed Nam Mo 1 Hydropower Project Policy for the PAPs**

- Project impacts shall be avoided or minimized wherever possible by exploring viable alternatives in design and location, and considering the opinions and concerns of the Project Affected People (PAPs).
- Full assessments shall be conducted to ensure all impacts are identified and mitigated.
- A detailed entitlement matrix (see Table VI.5) is prepared, containing all the losses to the village community and each affected household and the compensation measures that the Proponent is obliged to provide and implement.
- PAPs shall be compensated and resettled in order to improve their standard of living, including access to community services and resources.
- PAPs will be provided with choices among feasible resettlement options, including adequate replacement housing or cash compensation, and their preferences in respect to relocation to existing communities will be taken into consideration.
- Land acquisition and resettlement shall be planned and implemented to cause least possible amount of social, cultural and economic disruption.
- PAPs will be provided with relocation assistance that is suited to the needs of each relocated group.
- All measures shall be implemented without detriment to the environment.
- Special measures shall be incorporated to protect socially and economically vulnerable groups, this is groups that cannot for various reasons participate in restoration programs groups, e.g., women-headed households, especially single mothers with children, the disabled, the elderly, etc.
- All persons residing within the areas directly impacted by the project shall be considered as PAPs and will be eligible for compensation and resettlement if the impact influences their residences and livelihoods negatively: (a) those who have formal rights to land or other assets, and (b) those who initially have no formal rights to land or other assets but have a claim based upon the laws of the country, upon the possession of documents such as tax receipts and residence certificates or upon permission of local authorities occupy or use the Project affected land, are provided compensation for the land they lose, and other assistance. (c) Those who do not belong to (a) or (b) above but are certified by commune/district authorities having been using the land and have assets on land before the cut-off date, are provided resettlement assistance and other assistance needed. Those without legal titles or required documentation shall be assisted in acquiring the necessary documents that will give entitlement to compensation or replacement.
- The previous level of community services and resources shall be improved after compensation and resettlement. These include schools, water and electricity supply, intra-village roads, health services, animal health services, etc.

- The project development costs take into account the costs of resettlement. The resettlement programs shall be planned and implemented with the consent and agreement of the affected people through a participatory involvement process.
- All households will have access to effective mechanisms for hearing and resolving grievances during the implementation of compensation and resettlement programs.
- Proponent will carry out monitoring of PAPs until compensation is completed and livelihoods are fully restored, and until development targets are achieved.
- All communication with PAPs and vulnerable groups will follow the consultation process outlined in the Public Communication and Disclosure Plan (PCDP).

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

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

### 9.1.3 Relocation site selection process

Relocation sites for the affected villages in Vietnam have been proposed in the Government Resettlement Plan prepared in 2015 by Nghe An Forestry Planning Division and for the affected village in Laos by ASA Power Engineering Company that was hired by the Proponent to prepare ESIA for the Nam Mo 1 HPP in 2016. The principle for the site selection was that the distance of removal should be as short as possible. The locations were mainly chosen by the province, district and commune authorities in coordination with the consultant teams.

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

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

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

### 9.1.4 Land acquisition and compensation process

Proponent will negotiate with eligible government organizations concerning the acquisition and allocation of the land needed for the relocation and compensation of the affected people. This will include DONRE with Province Forestry Office (Vietnam)

/Agriculture and Forestry Office (Laos), and DARD with Province Land Office, as well as the Province Forest Management Board.

For preparation of the Resettlement Action Plan, Proponent has to undertake a detailed socio-economic census of the displaced persons and an Inventory of the affected land and assets at household, community, and enterprise level.

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

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

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

### 9.1.5 Roles and responsibilities

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

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

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

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

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

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

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

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

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

Proponent will set up a *Project Resettlement and Livelihoods Restoration Unit* for detailed planning and implementation of all the programs and activities according to the REMLRP.



**Table VI. 4 Entitlement matrix for resettlement and compensation**

Issue	Compensation and Proponent Obligation
A – Loss of residence (house or dwelling)	<ul style="list-style-type: none"> <li>• Proponent to provide either expropriation payment for residence (house or dwelling) based on applicable market rates or a new residence (house or dwelling) based on a general design of at least the same standard and in consultation with the project affected persons (PAPs)</li> <li>• Proponent to assure PAPs are participating in designing the houses, taking account of their cultural and spiritual preferences (i.e., based on ethnic minority/group traditions)</li> <li>• Proponent to support transportation costs to new sites within the Project Area of Influence or area of relocation (belongings, materials and moveable objects)</li> <li>• Proponent to support if house or dwelling is to be dismantled and reconstituted in new location, according to the choice of the PAPs</li> <li>• Proponent to provide technical assistance in designing, surveying and construction</li> </ul>
B – Loss of other structures	<ul style="list-style-type: none"> <li>• Proponent will replace structures at cost or provide materials and assistance for rebuilding, according to the choice of the PAPs</li> </ul>
C – Loss of residential land	<ul style="list-style-type: none"> <li>• Expropriation payment for residential land based on applicable market rates, if applicable</li> <li>• Proponent is to secure suitable residential land in consultation with GoV/GoL and PAPs, covering the cost in addition to expropriation payments</li> <li>• New residential land will be no less than existing residential land area in addition to land required for livestock</li> <li>• Proponent to assure each HH is provided with a Land Use Certificate by the government land authority on the new residential land</li> </ul>
D – Loss of allocated productive forest land	<ul style="list-style-type: none"> <li>• Proponent to assure allocation of production forest and associated payments from the government (Province) and certification of use for PAPs (individual HH, HH groups or village)</li> <li>• Proponent to assure payments for environmental services from the government (Province) for PAPs (individual HH, HH groups or village) are not disrupted</li> <li>• Proponent to assure PAPs are allowed to extract products from protection forests and provide support for forest conservation plans</li> </ul>
E- Loss of river resources	<ul style="list-style-type: none"> <li>• Proponent to assure mobility is possible by road as river will not be usable for transport</li> <li>• Proponent to assure that alternatives are made available for fisheries</li> </ul>
F – Loss of agricultural land (owner of land)	<ul style="list-style-type: none"> <li>• Assure allocation for agricultural land from the government (Province) and certification of use.</li> <li>• Assure that PAPs are able to continue agricultural practices as before relocation or loss of land</li> </ul>
G – Loss of agricultural production, livestock and ponds (user of land)	<ul style="list-style-type: none"> <li>• Proponent to provide land of equal productive value (based on quality check) or alternative production system</li> <li>• Entitled for livelihood restoration based on options and provisions in the livelihood restoration plan, and replacements, including, among others:             <ol style="list-style-type: none"> <li>i. Fruit trees (horticulture, apiculture)</li> <li>ii. Livestock enhancements</li> <li>iii. Diversification of crop production and sustainable methods</li> <li>iv. Fisheries (post-reservoir filling)</li> <li>v. Business/SME development</li> </ol> </li> <li>• Special provisions will be made for capacity building in implementation of livelihood activities when these are not familiar, new and require special skills as stipulated in the livelihood restoration plan</li> </ul>

Issue	Compensation and Proponent Obligation
	<ul style="list-style-type: none"> <li>Proponent to provide assistance in cash and food supply to the PAPs during the transition period until their food production and economy has been stabilized to the pre-resettlement level. Appropriate level of allowances will be decided based on baseline socio-economic assessment and agreed with the PAP in the FPIC process</li> <li>Proponent to provide technical assistance for five years</li> </ul>
H – Temporary Loss of Production	<ul style="list-style-type: none"> <li>Proponent to provide cash compensation for the loss of agricultural production, forest resources/products and rehabilitation of lands</li> </ul>
I – Loss of common property resources	<ul style="list-style-type: none"> <li>Proponent to secure access and rights to adequate forests, grazing land, water and other natural resources</li> </ul>
J – Permanent loss of land used for commercial purposes	<ul style="list-style-type: none"> <li>Replacement land of at least equal value with the location being acceptable to PAP in order to continue viable commercial activities.</li> </ul>
K – Loss of commercial structures	<ul style="list-style-type: none"> <li>Provision for replacement of any materials or assets that cannot be removed (non-removal assets) if they remain in the project direct impact area</li> </ul>
L – Loss of physical cultural resources	<ul style="list-style-type: none"> <li>Provision for ceremonies and acceptable arrangements for relocation of moveable items and re-establishment at new site agreed with PAPs</li> <li>Replacement of shrines and other religious structures of at least the same value and acceptable to the PAP communities</li> <li>Assure that sacred objects and needs (e.g., sacred tree, spirit house, burial grounds) are available and acceptable to PAPs in the relocation area</li> </ul>
M – Loss of community infrastructure	<ul style="list-style-type: none"> <li>Replacement of all community infrastructure of at least the same value and function or improvement of existing infrastructure</li> </ul>
N – Loss of educational facilities	<ul style="list-style-type: none"> <li>Replacement kindergarten and/or school or upgrading of existing village facilities within an acceptable distance from households</li> <li>Provision of equipment, materials and furniture for new school buildings as required</li> </ul>
O – Loss of health facilities and health checks	<ul style="list-style-type: none"> <li>Provision of health care services should be considered during the relocation and recovery period</li> <li>Health checks for all resettlers during relocation transition period (either prior to or just after relocation to new area)</li> <li>Proponent to cover the health costs for all adverse health impacts caused by direct project-related activities</li> </ul>

## CHAPTER 10 LIVELIHOODS RESTORATION PLAN

The remote ethnic minority communities affected by the Nam Mo 1 HPP are extremely poor and their livelihoods are totally dependent on utilization of the local forest, land and water resources. The PAPs will lose totally about 55 ha upland farming area; currently they cultivate 1,010ha annually and they have access to about 2,020ha additional swidden land for crop cultivation used in rotation. The loss of 962ha of forest in the reservoir could also significantly reduce the grazing areas for their cattle, buffalo and goats.

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

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

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

Nam Mo 1 HPP will have a major impact on the livelihoods resources and livelihoods practices of the PAPs. All the households that will lose land used for cultivation and animal grazing, lose access to forest and forest resources, or lose access to river resources and the Nam Mo River as a transportation route used in livelihoods activities, will be eligible for special assistance for restoration of their livelihoods disrupted by the HPP. All the villages in the DIA are very poor, but special attention will be paid to inclusion of the most vulnerable members in the communities, such as the poorest households, single-headed households with children, disabled and elder persons in the livelihoods assistance programs.

Livelihoods Restoration Plan has been developed based on the baseline socio-economic assessment of the affected communities. The main areas of the Plan have been further identified based on consultations with the affected people, taking into consideration their views and concerns on livelihoods resources, support and needed assistance for livelihoods restoration and improvement. The Fisheries Support Plan, Agriculture Restoration Plan and Animal Husbandry and Veterinary Services Plan consequently integrate both compensatory and enhancement measures with the aim of not only restoring but also improving the livelihoods of the affected people in the DIA of Nam Mo 1 HPP. The plans will be developed in detail in the detail design phase.

### 10.1 Fisheries Support Plan

High sediment load, increased organic and nutrients from decomposed vegetation will favor mud eating fish species adapted to the largely still-standing water environment of the reservoir. Water impoundment upstream of the Nam Mo 1 HPP dam will provide opportunity to develop aquaculture and fishery. In many cases aquaculture actually exacerbates biodiversity losses, for example by introduction of exotic species which

affect indigenous species negatively. Aquaculture with native species would be preferred. Reservoir shore could provide a productive area for shrimp farming. Proper controls are advised through monitoring. The Plan has two programs:

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

### 10.1.1 Cage Fish Farming

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

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

### 10.1.2 Community Fish Farming

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

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

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

## 10.2 Agriculture Restoration Plan

The Agriculture Restoration Plan consists of two Programs:

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

### 10.2.1 Upland Farming Diversification

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

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

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

#### (i) Crop Diversification and Multiple Cropping

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

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

#### Capacity building of farmers

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

#### Implementation approach

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

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

#### (ii) Fruit Tree and Vegetable Production

The Fruit Tree and Vegetable Production Program will be implemented on homestead area and on river bank. Project will collaborate with concerned communes to allocate

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

### **(iii) Bee Keeping**

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

### **(iv) Forage Production Farming**

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

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

## **10.2.2 Soil Fertility Enhancement**

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

### **(i) Legumes in Multiple Cropping**

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

### **(ii) Compost Making and Mulching**

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



Farmers leave enough crop residues after grain harvest and they are blown out on windy days. These crop residues could be collected, put aside and used in crops as mulch or dumped into a compost pit.

### 10.3 Animal Husbandry and Veterinary Services Plan

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

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

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

#### 10.3.1 Animal Husbandry Improvement

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

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

#### 10.3.2 Extension and Veterinary Services

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

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

#### 10.3.3 Forage Production

See Forage Production Farming Plan under the Upland Farming Diversification Program above.



## CHAPTER 11 COMMUNITY HEALTH AND SANITATION PLAN

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

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

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

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

### 11.1 Household water supply and management

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

### 11.2 Sanitation enhancement

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

### 11.3 Community waste management

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

### 11.4 Improved cooking devices

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

### 11.5 Community awareness and capacity building

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

### 11.6 Public health support

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

### 11.7 Emergency medical response

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

## CHAPTER 12 COMMUNITY LABOR AND EMPLOYMENT PLAN

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

- (i) Contractor has to prioritize employment of local unskilled labor force (through subcontracting) so that at least 30% of the unskilled labor force over the project construction time are workers from the communities in the Project Impact Area.
- (ii) Totally 30% of the local unskilled labor force has to be women. Contractor has to implement measures to enhance employment of women, including awareness raising to prevent sexual harassment of women.
- (iii) Male and female unskilled workers will receive equal pay for equal work.
- (iv) Contractor is not allowed to use any child labor (workers under 16 years of age).
- (v) Contractor has to provide basic facilities (such as water and latrines) separately for men and women in the construction sites. The quality of these facilities has to meet the locally acceptable standard.
- (vi) Contractor is required to provide adequate working conditions and facilities for their workers, as well as ensure health and safety measures in the workplace. Contractor is required to coordinate with local health centers in order to ensure that necessary arrangements will be made for prevention of accidents and epidemics, and that first aid facilities and access to basic health care and emergency care are available at all times for all employees at the construction site and at workers' camps.

## CHAPTER 13 INFLUX MANAGEMENT PLAN

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

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

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

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

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

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

### 13.2 Construction workers' HIV/AIDS Awareness Program

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

1. Carry out regular awareness raising among the employees throughout the construction time through information, education and communication activities that address HIV/AIDS and other sexually transmitted diseases (STDs)

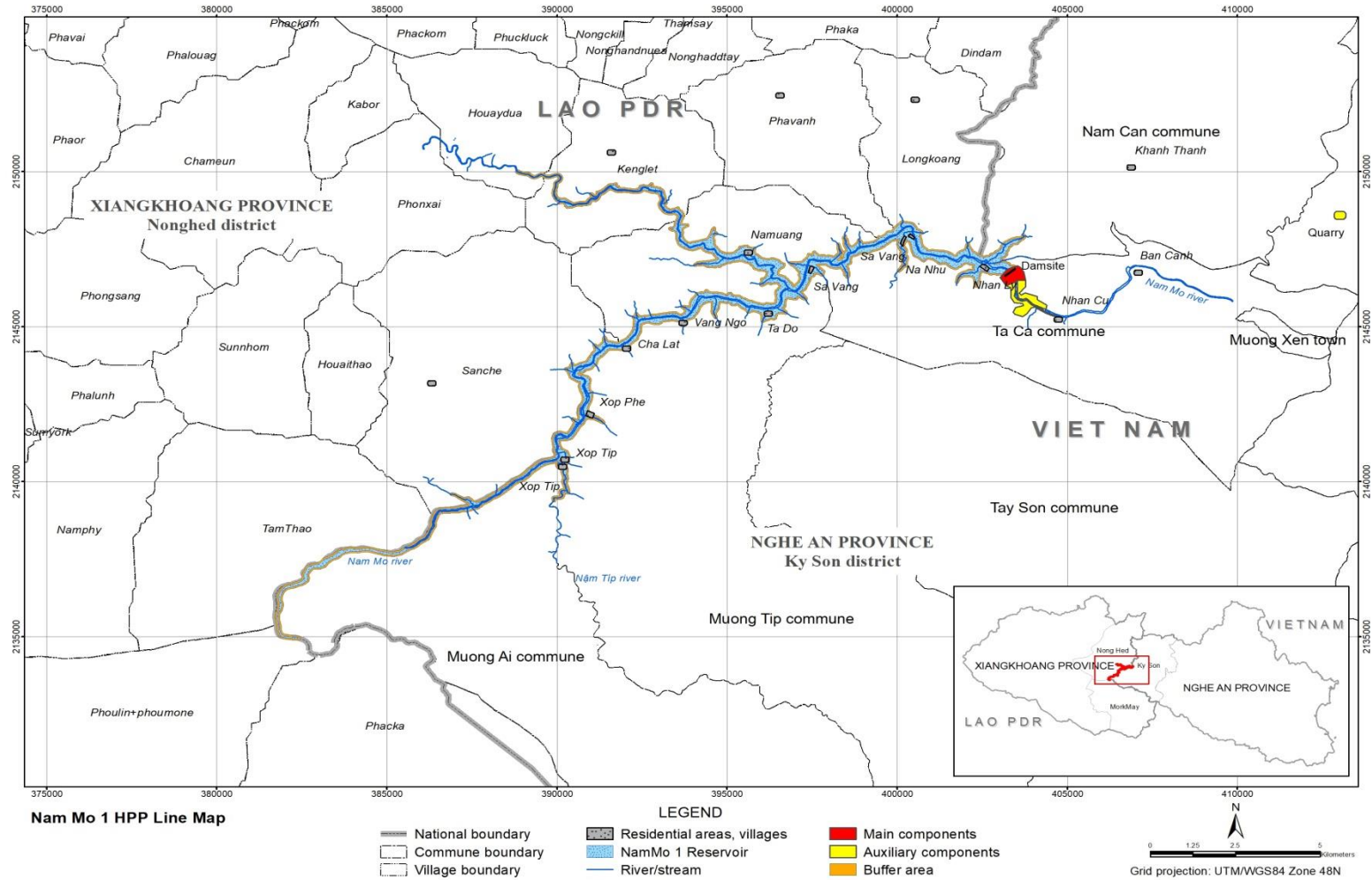
transmission risks and promote preventive measures. The awareness program shall cover all the contractor's employees, all subcontractors and any other employees, as well as all truck drivers and crew making deliveries to the construction site.

2. Promote early diagnosis of HIV: Ensure workers have access to and know how to access voluntary counselling, screening and diagnosis of HIV/AIDS, so that all workers can find out their HIV status.
3. Provide free condoms at the workers' camps.

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

Proponent will assure that the HIV/AIDS awareness program is included in the construction bidding documents and accordingly included in the construction contracts and implemented by eligible contractors.

### ANNEX VI.1 MAP OVER THE AFFECTED VILLAGES AND ADMINISTRATIVE AREAS





## ANNEX VI.2 SOCIO-ECONOMIC AND CULTURAL OVERVIEW OF THE VILLAGES TO BE RELOCATED

### VI.2.1 Muong Ai Commune

#### Xop Tip village



<b>Population:</b>	16 HHs with 84 people
<b>Ethnicity:</b>	Kho mu
<b>Poverty:</b>	88% of households under the poverty line, but food sufficiently, in average 4-5 meals/week with meat.
<b>Location and movement:</b>	Village established in 2002 when relocated from higher elevation, Xop Tip at that time had only 3 HHs, has increased to the current 16 HHs that all are relatives. Village is one of the three hamlets of Xop Phong village where village cultural house is located.
<b>Road infrastructure:</b>	Vehicle accessible road to village, it takes 30 min by motorbike to go to the Muong Ai commune center 8km away.
<b>River transportation:</b>	Only one motorboat that is sometimes used for transportation. River transportation not needed because road access is good.
<b>Electricity:</b>	National grid.
<b>Water supply:</b>	Water is lead from mountain stream to 2 water tanks in village constructed by GoV Prgram 135, water sufficient all the year.
<b>Educational standard:</b>	Daily communication language Kho mu, but people can speak Vietnamese, 80% of women can speak and read Vietnamese but 90% cannot write. Primary school in village, secondary school 2km away in Vang Pheo village, highschool in Muong Xen district town 30km away.
<b>Health and Sanitation:</b>	Commune health clinic 8km away, takes 30 min by motorbike to go there, 1 hour when rain. Women usually deliver their babies in village but nowadays young women go to commune health center, latest maternal death case in 2005. Local drug store in village. 50% of HHs have toilet, but not all are in good hygienic condition.
<b>Livelihoods:</b>	<b>Agriculture.</b> Upland fields area 3km from village, takes 30-50 min to reach by foot. Every HH has approx. 2-3ha of land and cultivate 1.5-



2ha for 2 years, then leave land fallow for 4-6 years. Total cultivation area approx. 60ha. Upland area is limited and no new land is available.

**Livestock farming.** All HHs have animals, totally 5 buffaloes and 65 cows in village. Each HH has 15-20 pigs and 50 chickens that are mainly for selling. Animals grazing area large, fenced area 2-3km from village, HH groups share grazing plots and together take care of animals and grazing land. Pigs and chickens often die of diseases, veterinary services available in commune, but villagers buy medicines and self-medicate animals when these get sick.

**River use.** There is fish in the Nam Mo River and in Nam Tit River but not in Long Nho stream. All HHs go fishing weekly using net, rod, basket, one-time catch 2-3kg, only for HH food. No river bank cultivation

**Fishpond.** One HH has a fish pond, raising carp.

**Forest utilization.** Protection forest 557ha allocated to village management, near village. Women collect daily NTPFs for food and collect firewood, men hunt every day rats, birds, bamboo rats for HH food, weekly squirrels, wild chicken, snakes. Deer and wild boar hunted seasonally.

**Employment and trade.** 3 rice milling machines in village, cost 1,000VND/kg rice. Some villagers moved to Ho Chi Minh City and Tay Nguyen province for employment.

**Cultural heritage:** **Graveyard** with 5 graves of villagers who died since 2002 located 1km from village.

## VI. 2.2 Muong Tip commune

### Xop Tip village



**Population:** 29 HHs with 146 people

**Ethnicity:** Kho mu

**Poverty:** 86% of households under the poverty line. Food sufficiently, HH daily meal sticky rice, fish, pork, green mustard, pumpkin, bamboo shoots.

**Location and movement:** Located in confluence of the Nam Mo River and Nam Tip stream, since 2002, no HH moved in or out the past 5 years except for individuals for marriage. Before that 6HHs moved to Xiangkhoang for working. Small residential area, 75-100m<sup>2</sup>/HH and houses stand close to each other.

<b>Road infrastructure:</b>	Vehicle accessible road to village, village 100m from the road between district town and Muong Ai commune center. Villagers travel by foot or motorbike, it takes 30 min on motorbike and 1 hr on foot to Muong Tip commune center.
<b>River transportation:</b>	No boats, river transportation not needed because road access is good.
<b>Electricity:</b>	National grid.
<b>Water supply:</b>	Water is lead from mountain stream to 3 water tanks in village, but one tank is broken. Villagers use mostly stream water for washing and bathing.
<b>Educational standard:</b>	Kindergarten and primary school in village, secondary school in Vang Pheo village 20 minutes away by motorbike. Elder people not fluent in Vietnamese and 10 people illiterate.
<b>Health and Sanitation:</b>	All health problems treated in the village, seldom attend commune health center, there are villagers with skills in traditional herbal medicine, and two traditional healers who are father and son. Women give birth in village and do not do any controls during pregnancy. Common health problems stomach and head ache. Hygienic standard poor, no toilets.
<b>Livelihoods:</b>	<p><b>Agriculture.</b> Upland fields area 3km from village, takes 30-50 min to reach by foot. Every HH has approx. 2-3ha of land and cultivate 1.5-2ha for 2 years, then leave land fallow for 4-6 years. Total cultivation area approx. 65ha. Upland area is limited and no new land is available.</p> <p><b>Livestock farming.</b> Totally 80 cows, only one HH has 3 buffaloes, over 100 pigs but suffer commonly from foot and mouth disease which villagers try to cure with diesel, lime and salt. Close to 200 chicken.</p> <p><b>River use.</b> Fishing only in the Tip stream, not in The Nam Mo River. Previously 3-4 years ago a lot of fish but after Nam Mo HPP construction fish reduced a lot. Fishing during summer months, all HH members fishing, men use net and hook to catch fish, women baskets. Fish enough only for HH daily food. No riverbank cultivation, and no collection of any wild-growing plants there either.</p> <p><b>Forest utilization.</b> Village has protection forest and production forest. Around village, easy to go to forest and resources abundant. Women collect firewood, wild-growing vegetables, bamboo shoots, mushrooms, herbs. Men collect timber and firewood, herbs. Men hunting every day rats, birds, bamboo rats for HH food, weekly squirrels, wild chicken, snakes, more seldom deer and wild boar.</p> <p><b>Employment and trade, labor migration.</b> Young female villagers working in other provinces, in Da Lat as agricultural workers or in garment factory in the South, no men labor migrating. Some women went abroad as workers but came back and still have debts. Previously 6 HHs moved to Xiankhoang, but no HH out-migration during the past 5 years. 2 HHs have small shops along the road.</p> <p>40% of HHs have got bank loans since 2011 but livelihoods not much improved due to lack of knowledge.</p>
<b>Cultural heritage:</b>	Spirit forest area about 5ha. Graveyard located 2km from village.

## Xop Phe village



<b>Population:</b>	76 HHs with 360 people
<b>Ethnicity:</b>	Kho mu
<b>Poverty:</b>	78% of households under the poverty line. Food insufficiency with 70% of HHs 2-3 months/year, receive no rice support from GoV.
<b>Location and movement:</b>	Village established in 2006, was previously located 500m downstream where area was flooded. Houses are located on both sides of the road from district to Muong Ai commune.
<b>Road infrastructure:</b>	Village located along the road between the district town and Muong Ai commune center, about 2km to Muong Tip commune center and 35km to Muong Xen district town. Houses wooden built on stilts.
<b>River transportation:</b>	Only one HH has a boat for transportation of goods, firewood, animal fodder; river transportation not needed because road access is good.
<b>Electricity:</b>	National grid.
<b>Water supply:</b>	Water is lead from mountain stream to 6 water tanks in village.
<b>Educational standard:</b>	Daily communication language Kho mu, about 30% of women can speak Vietnamese. 90% of women cannot read. Primary school 1km from village, secondary boarding school 5km in Vang Pheo village. Children walk to school, many drop-outs after grade 8 and 9. High school in Muong Xen, students have to rent accommodation outside the school, 3 students in Muong Xen, one in ethnic boarding school in Vinh.
<b>Health and Sanitation:</b>	There are people with skills in traditional herbal medicine in village. Village health worker who graduated from grade 9 and then attended 4months and 6 months of health training courses. Recording and reporting health conditions, no medical services. Summer rainy season health problems diarrhea and headache, cough in winter. Children have often respiratory problems and diarrhea. Infant death cases in 2014 and 2016. About 25% of HHs have toilet.
<b>Livelihoods:</b>	<b>Agriculture.</b> Cultivation land totally 200ha, village manage and not allocated to HHs, nearest land 300-500m far and takes 15-20min to go there by foot, furthest land 3km away and gets 1.5-2hrs to get there on foot. Some HHs suffer land scarcity due to steepness and rocks, get permission from forest protection force to do slash and burn in protection forest. Main crops rice, maize, cassava, peanut, beans. For HH food, cassava for animals. Maize for animals, also sold when cash needed. No cultivation in village, only fruit trees around houses.

**Livestock farming.** 100 cows of local breed, 2-6 cows/HH for selling, all HHs raise pigs 2-5pigs/HH, pigs often die of diseases and HHs buy medicine for curing them. All HHs raise chicken, 15-20 chicken/HH, but many died in 2016. No veterinary services available. Animals watered from the river, water not clean and animals get sick.

**River use.** Men fishing daily with nets in the Nam Mo River but only one HH use boat in fishing, fishing for HH food, only one HH selling fish. There is plenty of fish. Women fish with baskets, collect snails and moss for food.

**River bank utilization.** Planted banana trees, and grass and cassava for animals, cattle grazing along the river.

**Forest utilization.** Production forest 3km away, 450ha, protection forest area 300ha. Women collect firewood, wild-growing vegetables, bamboo shoots, mushrooms, herbs. Men collect timber and firewood, herbs. Men hunting every day rats, birds, bamboo rats for HH food, weekly squirrels, wild chicken, snakes, more seldom deer and wild boar.

**Employment and trade, labor migration.** 7 girls working in HCMC, one girl in Laos, one in China, one in Thai Nguyen, all 25-30 years of age.

**Cultural heritage:** Spirit forest 1.4ha. Graveyard 1km away on both sides of the road in protection forest. Established in 1995 and was divided into 2 sections when the road was constructed. Three ravine areas that are sacred and should not be accessed, if somebody goes there he/she will get sick. No village worship place, however a big tree and its surroundings area considered sacred.

### Cha Lat village



**Population:** Totally 29 HHs with 166 people in two hamlets, one in high location and the other by the Nam Mo River with 16 HHs and 92 people.

**Ethnicity:** Hmong

**Poverty:** 100% of households under the poverty line. Food insufficiency 3 months/year, all HHs receive government rice support. 50% of HHs do not have regularly meat to eat.

**Location and movement:** Village long time in high location, some HHs relocated in 2003 to lower elevation according to GoV program, now upper Cha Lat (13HHs) and lower Cha Lat (16HHs) 10km from each other.

**Road infrastructure:** Village access road to the road between the district town and Muong Ai commune steep, motorbike accessible but hardly during rains.



Villagers travel by motorbike and walking. center, about 2km to Muong Tip commune center and 35km to Muong Xen district town.

- River transportation:** No boats or river transportation because road access.
- Electricity:** National grid.
- Water supply:** Water tanks with stream water.
- Educational standard:** Everyday communication in Hmong language, few people fluent in Vietnamese, only 3-4 women can speak Vietnamese. Girls usually stop going to school after grade 5 in order to work in the family. 5 girls go to secondary boarding school 7km away in Vang Phao village, none in high school in district town.
- Health and Sanitation:** Commune health center only 2km from lower hamlet, and utilised by villagers from lower hamlet but far away from upper hamlet. Women give birth in village assisted by an elder woman. No infant deaths the past 5 years. Poor sanitation, no toilets.
- Livelihoods:**
- Agriculture.** Upland fields 20-30 min walk from village. Villagers do not know the area size. Each HH has 3-4 land plots in rotational cultivation, cultivate 1-2 years and leave fallow for 4-5 years. Cultivate rice, corn, cassava, sweet potato, mustard greens, pumpkins, peanut. For HH use only. No unused land available.
- Livestock farming.** 300 cows of local breed, 200 goats, 115 pigs, 400 chicken. In winter cows often die because there is no fodder for them. No agricultural services in upper village, sometimes in lower one.
- River use.** Fishing in the river with nets and cast nets, approx. every 3 days, fishing for HH food.
- Fish ponds.** 8 HHs are raising tilapia, mainly for HH food, can be sold when plenty of fish.
- No riverbank cultivation.
- Forest utilization.** Totally 300ha forest. Receive protection forest management fee annually, 30MVND that is partially kept as village fund and the rest distributed to HHs, each HH 1MVND. NTF resources are abundant. Abundant with small animals (rats, squirrels, birds, snakes, bamboo rats) but no large animals.
- Cultural heritage:** Spirit forest 4ha. Graveyard about 3km away. No village worship place, however a big tree and its surroundings area considered sacred.
- Causes of poverty as stated by villagers:** weather conditions, steep land with high erosion.

## Vang Ngo village



- Population:** Totally 47 HHs with 356 people in two hamlets, one in high location and the other by the Nam Mo River with 17 HHs and 130 people.
- Ethnicity:** Hmong, Kho mu
- Poverty:** 85% of households under the poverty line. 21 HHs with food insufficiency during 6 months annually, receive rice from Gov 15kg/person during hunger months.
- Location and movement:** Previously village located in higher altitude; in 2003, 17 HHs moved downhill with the Gov Relocation program, lower hamlet located in the commune center, the 30 other HHs in Huoi Khoi hamlet some 7km from commune center, takes half a day to go there by foot from lower hamlet.
- Road infrastructure:** NR7B crosses the lower hamlet which is right in the commune center.
- River transportation:** No boats or river transportation because road access.
- Electricity:** National grid.
- Water supply:** Water is lead from mountain stream to 3 water tanks in lower hamlet that were constructed in 2005 by Program 135 and renovated in 2014. No water tanks in upper hamlet.
- Educational standard:** Village communication language Hmong. Majority of men can speak Vietnamese. About 100 villagers illiterate, of them 60 women. In the lower hamlet there are a few women who can speak Vietnamese.  
Primary school in lower but not in upper hamlet where children go to school in the lower hamlet over the meek and go home in weekends, many children from upper hamlet drop out of school grade 5-6. Secondary boarding school 10km away in Vang Phao village.
- Health and Sanitation:** Commune health center in the commune center in the lower hamlet and easy to access, but far away for upper hamlet villagers who do not use the services. Hmong women do not go to annual female health check provided by the commune health center due to cultural reasons.
- Livelihoods:** **Agriculture.** Production land area 180hs. Upland fields 15km from village, takes 3-4 hrs to get there. Each HH cultivate 1-2ha for 1-2 years, then leave fallow. Rice, corn, cassava, mustard green, pumpkin cultivated for food. Cassava and corn grown for animal fodder.

**Livestock farming.** No specific grassland for livestock, ranging in forest and in cultivation areas after the harvest. Grass planted for buffalo and cow forage. Totally about 100-120 cows, a few buffaloes, 15-20 pigs/HH, 20-30 chicken/HH, 5-10 goats/HH. Cattle and poultry get regularly sick in Feb-May, commune veterinary services available when animals are sick, some HHs self-medicate animals. Animals watered from stream near the village. People eat chicken 1-2 times/month.

**River use.** Fishing in the river about 30% of HHs fishing once a week, others once a month, fishing with net, hook, basket. 2-3kg fish/catch during rainy season, some 2kg during the dry season. 5-6HHs collect wild growing vegetables along the river when they go fishing. Banana and grass planted along the river.

**Forest utilization.** Closest forest 1-2km, furthest 5-6km away. Protection forest Gov allocation to village annually 33MVND. NTFs important daily food.

**Employment and trade.** 2 HHs have small shops. Some villagers work as laborers collecting firewood for 100,000VND/day.

**Cultural heritage:** Old graveyard near the upper village. Village worship place with a big tree located in the upper village.

**Causes of poverty as stated by villagers:** weather conditions, steep land with high erosion.

## Ta Do village



**Population:** 99 HHs with 556 people.

**Ethnicity:** Kho mu, Thai

**Poverty:** 97% of households under the poverty line. Food insufficiency with 20% of HHs 3-4 months annually.

**Location and movement:** Current location since 1988 through the GoV relocation program to move people to lower elevation, at that time all villagers were Kho mu, 1995 some Thai families moved into village, and 2006, 5 Thai HHs resettled from Ban Ve HPP. 4km from commune center along the road from Muong Xen district town to Muong Ai commune.

**Road infrastructure:** Village located along the road between the district town and Muong Ai commune center, 3-4km to Muong Tip commune center and 30km to Muong Xen district town.



<b>River transportation:</b>	Only one small boat that used for transporting people only to cross the river and visit relatives in Namuang village in Laos for weddings, funerals and other festivities, no goods transportation
<b>Electricity:</b>	National grid.
<b>Water supply:</b>	5 water tanks constructed 2004 by the Gov safe water program bringing water from streams to village. Some HHs have a piping system from water tank to their house.
<b>Educational standard:</b>	90% of women speak Vietnamese, most women over 40 years are illiterate. Kindergarten and primary school in village, secondary boarding school 16km away in Vang Phao village. One boy and one girl study in high school in MuonXen, one girl in college in Vinh city.
<b>Health and Sanitation:</b>	All people use commune health center services. Child vaccination in village once a month. Younger women (<25 years give birth in commune health center, elder ones in village), there is a midwife who is now too old to work. Many people know how to use herbal medication, herbs are collected in the forest. Common health problems seasonal diarrhea, headache, flu, cold, children have fever, diarrhea, rubella, cough. Children are usually taken to CHC. Women have annual gyn. controls in CHC, mainly young women attend. About 20% HHs have toilet.
<b>Livelihoods:</b>	<p><b>Agriculture.</b> 600ha upland fields, takes 1-2hrs on foot to get there. Cultivate rice, corn, peanut, taro, banana, ginger, chili, and cassava for livestock. 1year cultivation, then 5 years fallow.</p> <p>One HH cultivating jack fruit, tamarind, apple, longan, litchi, mango trees for selling fruit. Some HHs planting fruit trees in home garden to grow fruit for selling.</p> <p><b>Livestock farming.</b> About 15 cows/HH, totally 12 buffaloes in village, 20-30 pigs/HH, Up tp 100 chicken/HH, 50 goats in village, every HH has dogs for food and selling to traders coming to the village. Animals mainly for selling. Pastureland near cultivation areas far from the village, no pasture land along the river.</p> <p><b>River use.</b> Fishing mainly in the Nam Mo River, many streams near the village where villagers catch shrimps, snails, collect moss. Most HHs do fishing, 1/3 of HHs 2-3 times/month, others more seldom. Fish reduced due to HPPs (Nam Mo 2013) and people from other villages (Canh village) killing fish with electricity. Fish only for HH food. Fishing more before HPP (Nam Mo), could catch 5-7kg at a time, nowadays 2-3kg. Cast net, rod, basket used for fishing.</p> <p><b>Forest utilization.</b> Protection forest about 2ha/HH, each HH gets annually 1MVD from Gov for forest protection. Abundant forest resource, NTFPs used daily, wild growing vegetables, bamboo shoots, mushrooms daily food. Wild animals like rats, birds, snakes, squirrels, bamboo rats, deer, wild chicken hunted year-round for food and for selling, but wild boars only during harvest time when they come to destroy the crops. Forest very close to village, 5 minutes' walk.</p> <p>Some HHs collect herbs for selling to traders coming to village and placing order on certain herbs and linzhi mushrooms etc.</p>

**Employment and trade, labor migration.** Young girls go to the South to work in garment factories or to Central Highlands to work as laborers.

**Cultural heritage:** Spirit forest about 15ha. Graveyard outside village. Village worship place under a big tree.

## VI.2.3 Ta Ca commune

### Sa Vang village



**Population:** 97 HHs with 510 people.

**Ethnicity:** Kho mu, 6 Thai HHs

**Poverty:** 100% of households under the poverty line. Food insufficiency with **40%** of HHs 6-8 months annually.

**Location and movement:** Village consists of two hamlets 4km from each other, both along the Nam Mo River. Previously located near Huoi stream, moved 2003 to present location.

**Road infrastructure:** Village located along the road between the district town and Muong Ai commune center, Main hamlet 12km to Ta Ca commune center. Spacious village, each HH has 300-500m<sup>2</sup> residential land. Women usually go to commune center only once a year as they have to walk there which takes half a day. Villagers usually go to Muong Xen 1-2 times/year to buy clothes, tools and household items.

**River transportation:** Only two HHs have boats that used for fishing and transporting people (up to 10 persons) and goods.

**Electricity:** Micro hydro generators.

**Water supply:** 4 water tanks in main hamlet, no water supply the 2<sup>nd</sup> hamlet

**Educational standard:** Communication language Kho mu, Thai, Hmong, most people can speak Vietnamese – many Kinh traders coming to village - but some people not fluent, some elder people are illiterate.

Men better educated than women, due to poverty

Few children finish grade 12, families have many children and cannot afford educating them. Past 2 years only 2 girls went to high school and one to college.

Kindergarten and primary school in village, secondary boarding school in commune center, children come home for weekend using bicycle or walking.

**Health and Sanitation:**

Self-medication in village with herbs collected in forest, only with most serious cases of illness people go to CHC or district hospital. There are people with knowledge in herbal medicine providing services for free. No health services in village, only a male health officer who is responsible for information about Gov campaigns.

Women deliver babies in village or in the fields. Many miscarriages that are said to be caused by hard physical work women are continuing with during pregnancies. No pregnancy controls. CHC offer annual gynaecological control for women but not all women go to CHC for that because of the distance, time and cost of travelling to the commune center.

Children are vaccinated in village by mobile vaccination services of commune and district health care.

**Livelihoods:**

**Agriculture.** Total cultivation area approx. 300ha. Distribution of land uneven between HHs, only 3HHs have over 1ha cultivation land. Fallow cycle usually only 2 years, fields steep. Fields lie 3-5km from village.

30 HHs have totally about 16-17ha of paddy fields close to mountain streams, They produce 2 paddy crops annually but the areas are too small for producing sufficient food for their HHs.

Rice is grown for HH food, 2-3 HHs have enough to sell rice. Corn mostly sold after harvest, some HHs plant peanuts for selling. Sold to traders coming to village. Cassava, taro, beans.

**Livestock farming.** More than 200 cows, 43 buffaloes, every HH has 2-3 productive pigs plus piglets, all chicken had died (Jan 2017). 2009-2012 all HHs were supported by Program 135 and 30A, totally 120 cows and 50 pigs from the programs. In 2016 only one HH received a cow.

**River use.** According to villagers, the river contributes to 50% of HH food Fishing with cast nets, baskets. Fish reduced considerably since (Nam Mo) HPP construction, for 5 years ago plenty of big fish but no more. If fishing done every day there will be just enough for HH food. Catch shrimps, snails, crabs, collect moss during the dry season. Fishing during dry season every day, not during high waters of rainy season. **River bank cultivation:** Fruit trees, banana, papaya, sugar cane, chili, eggplant and other vegetables for family food.

**Forest utilization.** Forest close to village, just 5-10 minutes' walk away. Daily forest utilization. Women collect firewood, bamboo shoots, mushrooms, wild vegetables and herbs. Men go hunting, taking timber, taking care of livestock, collecting herbs. Abundant NTF resources as well as bamboo resources for construction and selling to traders.

Hunting: Rats, birds, bamboo rats are hunted for food every day; snakes several times/week, deer is rare and hunted a few times per year, wild boards during harvest times. Tools include trap, crossbow, net, catapult.

**Employment and trade, labor migration.** Four HHs have small shops (combined with Na Nhu village). Teenagers 14-15 years, sometimes as young as 12 years go to Saigon and to Dak Lak for working, more boys than girls. Doing agricultural work taking care of coffee and pepper trees, planting vegetables and picking up strawberries etc. People cross the river and work in Laos (forestry

and agriculture), women over the day only get 120-150'VND, men in logging earn 250'VND/day and they stay over a longer time

**Cultural heritage:**

Spirit forest about 15ha, graves 1km from the villages on a higher location than the village, but may still be affected by the reservoir. Village worship place by the biggest tree in the village.

**Causes of poverty as stated by villagers:** Small cultivation land area and poor soil quality, traditional cultivation methods, livestock diseases and high mortality of animals. Products are sold to traders coming to village at lower prices than market prices.

Villagers have to borrow money/rice when they do not have enough to eat, lenders come from Muong Xen, borrowers have to pay high interest, e.g. borrow 10kg rice and after harvest have to pay back 30kg. Some HHs take a loan from traders and after harvest have to pay in products – circle of poverty is continuing.

**Na Nhu village**



**Population:** 67 HHs with 360 people.

**Ethnicity:** Kho mu

**Poverty:** 100% of households under the poverty line. About 1/3 of HHs have not rice all the year, food insufficiency 3+ months when they will receive rice from the GoV, 15kg/person/month.

**Location and movement:** Established 1982, villagers came from Co My and Huoi Hien villages in Muong Tip commune and from Nhan Ly and Nhan Cu in ta Ca commune.

Today 2 hamlets, 12 HHs along the river and the road between Ta Ca and Muong Tip communes, the other hamlet with 50 HHs up in the forest. Riverbank high and steep.

**Road infrastructure:** Vehicle accessible year-round road, however, access during the rainy season gets difficult. 14km to commune center, villagers travel by motorbike or walk. Women seldom leave the village, go to commune center about once a year.

**River transportation:** Villagers do not own boats.

**Electricity:** Micro hydro generators.

**Water supply:** 5 water tanks with water led from a stream, some of them appear to be broken because they were constructed long time ago by the GoV.

<b>Educational standard:</b>	Daily communication language Kho mu. About 10 illiterate elder people, most people able to communicate in Vietnamese. Women less educated than men, many dropped out of school after grade 5. Kindergarten and primary school in village, secondary boarding school in commune center, children come home for weekend using bicycle or walking.
<b>Health and Sanitation:</b>	<p>Backache, headache, fever, cold common. Children have seasonal itchy eyes and diarrhea, coughing, fever, respiratory infections.</p> <p>Commune organize annual female controls and child vaccination, but few women utilize them due to distance of walking to commune center.</p> <p>Women give birth in village, young women nowadays go to pregnancy controls to CHC. Previously maternal and infant death cases, nowadays not. Some malnourished children but less than previously. Miscarriages common.</p> <p>There is a male health worker for information purpose only. One person knowledgeable in herbal medicine and provides advice free of charge.</p> <p>No toilets, animals free ranging.</p>
<b>Livelihoods:</b>	<p><b>Agriculture.</b> Upland fields around the village at a distance from 2 to 5km away, takes 30min to 1 hour to go to the fields. Total upland area in rotation/HH 4-5ha, annually under cultivation 1-2ha/HH.</p> <p>7ha of paddy land along the Huoi Nhu tributary river.</p> <p>Village land fund is exhausted, and no new land can be allocated to new married couples.</p> <p><b>Livestock farming.</b> More than 100 cows, 20 buffaloes, in average every HH has 25-30 pigs of which 2-3 sows, 20-50 chicken per HHs but often die of diseases – meaning income loss when they cannot be sold. All animals are of local breed.</p> <p><b>River use.</b> No boats. Fishing in Huoi Nhu stream, but fish not abundant except for small fish, usually one time catch only up to 1kg. Along the stream collect bamboo shoots for people and pigs, and moss from the stream. No riverbank cultivation, river bank high and steep.</p> <p><b>Forest utilization.</b> Forest far away, 5-10km. Timber resources have been over-exploited so men have to go further away for logging, up to 50k away. They do that in groups of 7-10HHs who are related. Sometimes they go to Laos to take timber and sell it.</p> <p>Women collect NTFs in the edges of the forest, men do hunting. Cattle and goats grazing in the forest.</p> <p>Hunting: Rats, birds, bamboo rats are hunted for food every day; snakes several times/week, deer is rare and hunted a few times per year, wild boards during harvest times. Tools include trap, crossbow, net, catapult.</p> <p><b>Employment and trade, labor migration.</b> 4 HHs run small shops selling cookies, candies, cigarettes, soft drinks etc. (combined with Na Nhu village).</p>
<b>Cultural heritage:</b>	Spirit forest 10ha, outside the village. Graveyard outside village. Village worship place by the biggest tree in the village.



**Causes of poverty as stated by villagers:** Lack of production land, high slope land, poor soil quality, low educational level, low productivity, lack of trade. Most HHs are eligible for bank loan (State bank, loans for poor HHs for production development but they have no knowledge of how to apply and about the procedures so very few HHs have taken any loan. Instead HHs borrow from traders who take high interest.

### Nhan Ly village



<b>Population:</b>	51 HHs with 275 people.
<b>Ethnicity:</b>	Kho mu
<b>Poverty:</b>	100% of households under the poverty line. All HHs suffer lack of rice during the pre-harvest time, 20 HHs about 6 months annually and some 10 HHs all year round.
<b>Location and movement:</b>	Village in the same location since the 1950s.
<b>Road infrastructure:</b>	Vehicle accessible road, about 5km to commune center which is located in Ban Canh village by the Nam Mo HPP.
<b>River transportation:</b>	4HHs have boats, one HH use for fishing, the others for transportation of e.g. firewood and transporting people. They say they cannot travel to Muong Xen by boat any more due to Nam Mo HHP that is blocking the access.
<b>Electricity:</b>	Micro hydro generators.
<b>Water supply:</b>	4 water tanks constructed by the GoV, but the piping system in 3 of them is broken so villagers take their water from stream next to the village.
<b>Educational standard:</b>	Daily communication in Kho mu, but villagers can speak Thai with Thai people and Vietnamese with Kinh people. Only some elder people cannot understand and speak Vietnamese. Women have education highest level from grade 8 or 9. A few illiterate people. Kindergarten and primary school in village, secondary boarding school in commune center. Many children drop out of school. One student in high school in Muong Xen.
<b>Health and Sanitation:</b>	Child vaccination service from commune or district once/month. No other health services in village. No traditional healer. Young women nowadays often go to CHC for delivery, but still many women deliver in village, only a few go to any control to CHC during pregnancy. No toilets, animals free ranging.

**Livelihoods:**

**Agriculture.** About 30% of cultivation land located near the river. Each HH cultivating 3-4 plots annually, after one year the plots are left fallow for 3-4 years. Every HH cultivate approx. 1.5ha annually. Rice, corn, cassava, peanut the most important crops.

**Livestock farming.** 40 cows, 15 buffaloes in village – 50% of HHs received cows from a livelihoods program but last year many cows died during the winter, now only some 15 HHs have cows left. No pastureland but 5-6ha unused land used for livestock farming. Problem that fodder lacking during the winter so cattle gets sick and dies just before Tet.

50 pigs in village, many died from diseases.

No veterinary services, villagers try to cure sick animals by themselves.

**River use.** 4HHs have boats that are used for fishing. Villagers fish in the Nam Mo River, 2/3HHs during rainy season, less than 1/2 during dry season. Use cast nets, landing nets, baskets. Additional fishing in Huoi stream. Villagers complain that people from Canh village use electricity for fishing and kill the fish. If villagers cannot catch enough fish, they will buy sea fish from mobile traders coming from Muong Xen.

**Riverbank cultivation.** Each HH has land along the river about 1.5-1.8ha, no actual riverbank cultivation but fields along the river with vegetables and herbs, higher up mango, banana, and other fruit trees.

**Forest utilization.** Forest not allocated to HHs but managed by the village community. Women collect wild growing vegetables, mushrooms, bamboo shoots, herbs, firewood collected in the forest. Men hunting: Rats, birds, bamboo rats are hunted for food every day; snakes several times/week, deer is rare and hunted a few times per year, wild boards during harvest times. Tools include trap, crossbow, net, catapult.

**Employment and trade, labor migration.** Young people work for construction companies and road companies and can earn 100-150VND/day. 2 HHs have small shops. Children usually drop out of school after grade 9 and go to the South and Central Highlands, more girls than boys, boys do logging in the nearby areas instead. for working. 3-4 people work abroad, earn 5-6MVND/ month and send home some 3MVND.

**Cultural heritage:**

Spirit forest 5ha near the village. Graveyard outside village. Village worship place by the biggest tree in the village.



## VI.2.4 Nonghed District

### Namuang village



<b>Population:</b>	34 HHs with 224 people.
<b>Ethnicity:</b>	Kho mu
<b>Poverty:</b>	77% of households under the poverty line. 60% of HHs have annually rice insufficiency during 3-4 months.
<b>Location and movement:</b>	Village established in the current location in 1994. 6 HHs s moved previously to Xiangkhoang, but the past 5 years no out-migration.
<b>Road infrastructure:</b>	Vehicle accessible road, only by motorbike during the rainy season due to high slopes. 22km to Nonghed district center.
<b>River transportation:</b>	Villagers do not own boats.
<b>Electricity:</b>	Grid electricity.
<b>Water supply:</b>	3 village water taps with water led from a stream.
<b>Educational standard:</b>	<p>Daily communication language Kho mu, some men know Vietnamese, however, traders from Vietnam also communicate in Kho mu. Most villagers know the Lao language, but 20 elder people are illiterate.</p> <p>All children in school age go to school, primary school in village. No kindergarten. Secondary students go to district boarding school. No school drop-outs.</p>
<b>Health and Sanitation:</b>	There are persons in village with skills in traditional herbal medicine. Poor access to public health services. Common health problems headache, cold, diarrhea, fever. Children vaccinated because mobile health workers come to village. Women give birth in village. There are no toilets.
<b>Livelihoods:</b>	<p><b>Agriculture.</b> Upland fields are located along the tributary on a stretch of 3-5km, each HH cultivate approx. 2ha/year. There are no paddy fields. Land with high slopes, difficult to cultivate.</p> <p>Land resources are abundant, so there are no land conflicts.</p> <p><b>Livestock farming.</b> In average 3-5 cows/HH, some HHs have more, totally approx. 300 cows and 15 buffaloes in village. 230 pigs both of local and hybrid breed, the latter raised in barns and fed with cassava and corn, while the local breed animals free ranging. Commune veterinary services available if animals get sick, so low animal death rate.</p> <p>Chicken, fish or pork eaten 2-3 meals/week.</p>

Animals grazing in forests, no grassland for animal pasture.

**River use.** Fishing without boats, men with cast nets, women use baskets. Fishing for HH daily need, catch usually sufficient for family food. No riverbank cultivation, only cattle is sometimes grazing there.

**Forest utilization.** Abundant forest resources. Women collect NTFs in the, men do hunting. Cattle grazing in the forest. Hunting: Rats, birds, bamboo rats are hunted for food every day; snakes several times/week, deer is rare and hunted a few times per year, wild boards during harvest times. Tools include trap, crossbow, net, catapult.

**Employment and trade, labor migration.** Selling timber to Vietnamese traders is important for HH income.

**Cultural heritage:**

Graveyard outside village at a distance from the river. Village worship place in the village.

**Causes of poverty as stated by villagers:** Cultivation land is steep and crops productivity low, long lasting drought, losses of crops, no good access road and no market access.

During the months with rice insufficiency villagers borrow money from Vietnamese traders at an annual interest rate of 25-30%.