

Appendix 15.C

**Resettlement Action Plan
(RAP)**

on

**Pakbo-Saravan
115kV Transmission Line**

Pakbo – Saravan 115kV Transmission line

Resettlement Action Plan

For



By



EARTH SYSTEMS LAO
Environment – Water – Sustainability

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LIST OF ACRONYMS

DMS	Detailed Measurement Survey
DOE	Department of Electricity (MEM)
EDL	Electricite du Lao
EMP	Environment Management Plan
EMU	Environmental Management Unit (EDL)
EO	Environment Office (EDL)
ESD	Environmental and Social Division (DOE)
ESIAD	Environmental and Social Impact Assessment Division (WREA)
ESL	Earth Systems Lao
GOL	Government of Lao PDR
IEE	Initial Environmental Examination
IOL	Inventory of Losses
JICA	Japan International Cooperation Agency
LAFA	Land and Forest Allocation Program
MAF	Ministry of Agriculture and Forestry
MEM	Ministry of Energy and Mines
PAPs	Project Affected Persons
PDR	People’s Democratic Republic
RAP	Resettlement Action Plan
ROW	Right of Way
TEPCO	Tokyo Electric Power Company, INC.
TL	Transmission Line
WREA	Water Resources and Environment Administration

1 ບົດສະຫຼຸບຫຍໍ້

ຮ່າງແຜນການຍົກຍ້າຍຈັດສັນ ເພື່ອກະກຽມ ສະໜອງແຜນການຂຶ້ນພື້ນຖານສຳລັບ ມາດຕະການ ສະເພາະ ໃນວຽກງານການຍົກຍ້າຍຈັດສັນ ຊຶ່ງຈະພົວພັນເຖິງການຮັກສາຊັບສິນ ແລະ ການດຳລົງຊີວິດ ຂອງປະຊາ ຊົນຜູ້ທີ່ໄດ້ຮັບ ຜົນກະທົບ ຈາກການກໍ່ສ້າງສາຍເຊື່ອມຕໍ່ໄຟຟ້າ 115ກວ ຂອງແຂວງ ສະຫວັນນະເຂດ -ສາລະວັນ.

ຜູ້ທີ່ໄດ້ຮັບຜົນກະທົບຈາກໂຄງການນີ້ ລວມມີ ຜົນກະທົບທີ່ເກີດຈາກການສ້າງ ແລວສາຍສົ່ງໄຟຟ້າ ຊຶ່ງມີ ຄວາມກວ້າງ 25 ແມັດ ຕາມລວງຍາວຂອງແລວສາຍສົ່ງໄຟຟ້າຈາກແຂວງສະຫວັນນະເຂດ - ສາລະ ວັນ. ຜົນກະທົບດັ່ງກ່າວແມ່ນມາຈາກການກໍ່ສ້າງ ແລະ ການສ້ອມແປງເສົາໄຟຟ້າ (ແຂວງສະຫວັນ ນະເຂດ- ສາລະວັນ) ແລະ ສະຖານີຍ່ອຍໃໝ່ “ເຕົາຖ່ານ”, ແຂວງສາລະວັນ. ການຍົກຍ້າຍຈັດ ສັນແມ່ນ ມີຄວາມໝາຍຕໍ່ວຽກງານທັງໝົດ ເພື່ອຫຼຸດຜ່ອນ ຫຼື ທົດແທນຄ່າເສຍຫາຍຕໍ່ ປະຊາຊົນ ຜູ້ທີ່ໄດ້ຮັບ ຜົນກະທົບ ແລະ ເພື່ອຮັກສາ ຊັບສິນທີ່ສູນເສຍ ແລະ ການດຳລົງຊີວິດຂອງປະຊາຊົນ.

ໃນປະເທດລາວ ເຄືອຄ່າຍພະລັງງານໄຟຟ້າ ມີຢູ່ 4 ເຄືອຄ່າຍ: ເຄືອຄ່າຍພາກເໜືອ, ພາກກາງທີ 1, ພາກກາງທີ 2 ແລະ ເຄືອຄ່າຍພາກໃຕ້ ເຊິ່ງດຳເນີນການປະຕິບັດວຽກ ແບບເອກະລາດ ແລະບໍ່ເຊື່ອມຕໍ່ຫາ ກັນ. ສະພາວະຕົວຈິງ ໃນປະຈຸບັນນີ້ ເຮັດໃຫ້ດ້ານເຕັກນິກບໍ່ມີຄວາມສະດວກ ແລະ ດ້ານການໃຊ້ງານປະມານ ກໍ່ບໍ່ມີປະສິດທິຜົນ. ຕົວຢ່າງ ຄວາມຕ້ອງການຊື້ໄຟຟ້າຄົນມາຈາກປະເທດໄທ ເຊິ່ງໃນຕົວຈິງ ປະເທດໄທ ຍັງ ຮັບຊື້ໄຟຟ້າຈາກ ສປປລາວ ສະເໝີ. ການຊື້ໄຟຟ້ານັ້ນຈະມີ ລາຄາສູງ ແຕ່ກໍ່ຈຳເປັນເພື່ອສະໜອງໃຫ້ ບາງທ້ອງຖິ່ນທີ່ຂາດແຄນ ແລະໃນຂະນະທີ່ ເຂດບາງເຂດທ້ອງຖິ່ນກໍ່ມີເກີນຄວາມຕ້ອງການ. ສິ່ງນີ້ເກີດຂຶ້ນ ເປັນປະຈຳ ແລະ ຜົນສຸດທ້າຍກໍ່ເຮັດໃຫ້ສູນເສຍງົບປະມານ ເຊິ່ງຮັບຮູ້ວ່າ ມັນກາຍເປັນບັນຫາ ອັນຫຼໍ່ແຫຼມ ຂອງຊາດ. ເພື່ອແກ້ໄຂບັນຫາດັ່ງກ່າວ ໂດຍການສະໜັບສະໜູນຈາກລັດຖະບານຍີ່ປຸ່ນ, ລັດຖະບານແຫ່ງ ສປປລາວ ໄດ້ມີແຜນການທີ່ຈະເຊື່ອມຕໍ່ 2 ເຄືອຄ່າຍພະລັງງານ: ຄື ເຄືອຄ່າຍ ພາກກາງ 1 - ພາກກາງ 2, ແລະ ພາກກາງ 2 - ເຄືອຄ່າຍພາກໃຕ້. ເຄືອຄ່າຍພາກກາງ 1 ແລະ ພາກກາງ 2 ໄດ້ເລີ່ມເຊື່ອມຕໍ່ເຂົ້າກັນ ແລ້ວ.

ຈຸດປະສົງໃນການເຊື່ອມຕໍ່ສາຍສົ່ງແມ່ນ:

- ເພື່ອປັບປຸງເຄືອຄ່າຍພະລັງງານໄຟຟ້າແຫ່ງຊາດ,
- ເພື່ອເພີ່ມສະມັດຕະພາບໃນການຄຸ້ມຄອງຂອງພາກສ່ວນພະລັງງານໄຟຟ້າ
- ເພື່ອສົ່ງເສີມກິດຈະກຳທາງດ້ານເສດຖະກິດ, ແລະ
- ເພື່ອເປັນການກອບສ່ວນໃນການຕອບສະໜອງຄວາມຈຳເປັນຂຶ້ນພື້ນຖານຂອງຄົນໃນ ສປປລາວ

ໃນບົດລາຍງານນີ້ ເໝີນໜັກໃສ່ ສາຍເຊື່ອມຕໍ່ໄຟຟ້າ 115ກວ ຂອງ ແຂວງສະຫວັນນະເຂດ - ສາລະວັນ ເຊິ່ງໄດ້ສະເໜີໃຫ້ເຊື່ອມຕໍ່ ເຄືອຄ່າຍພາກກາງ 2 ກັບເຄືອຄ່າຍພາກໃຕ້.

ບໍລິສັດ ເອີດຊີສະແຕມລາວ ໄດ້ຖືກມອບໝາຍໜ້າທີ່ໃຫ້ ສຶກສາການປະເມີນຜົນກະທົບດ້ານສິ່ງແວດລ້ອມເບື້ອງຕົ້ນ (IEE) ແລະ ກະກຽມແຜນການຄຸ້ມຄອງທາງດ້ານສິ່ງແວດລ້ອມ (EMP) ແລະ ຮ່າງແຜນການຍົກຍ້າຍຈັດສັນ (RAP) ສຳລັບ ສາຍເຊື່ອມຕໍ່ໄຟຟ້າ 115ກວ ຂອງແຂວງສະຫວັນນະເຂດ - ສາລະວັນ ໂດຍການສະໜັບສະໜູນຈາກລັດຖະບານຍີ່ປຸ່ນ.

ຮ່າງແຜນການຍົກຍ້າຍຈັດສັນ (RAP) ນີ້ແມ່ນເອກະສານເບື້ອງຕົ້ນ ແລະ ໄດ້ກະກຽມເພື່ອຈຸດປະສົງໃນການ ສຶກສາຄວາມເປັນໄປໄດ້. ເອກະສານນີ້ ຈະເປັນຮ່າງແຜນການ ເຮັດວຽກຈົນກວ່າຮ່າງ ແຜນການສະບັບນີ້ ຈະຖືກທົບທວນຄືນ ຫຼື ກ່ອນໄລຍະການອອກແບບໂຄງການ ແບບລະອຽດ. ການທົບທວນຄືນເອກະສານ ດັ່ງກ່າວ ຈະລວມທັງການປຸງແປງແລວສາຍສິ່ງໄຟຟ້າ ທີ່ຈະຜ່ານ ແລະທີ່ຕັ້ງຂອງສະຖານີຍ່ອຍ. ແລະຮ່າງແຜນການຍົກຍ້າຍນີ້ ຈະເປັນໄປຕາມຮ່າງແຜນການທີ່ໄດ້ກຳນົດໄວ້, ການຂຶ້ນບັນຊີການສູນເສຍ (IOL) ແລະ ການສຶກສາມາດຕະການໂຄງການ ແບບລະອຽດ (DMS) ຈະຮັບຮອງເພື່ອຊື້ແຈງ ແລະ ວັດແທກຜົນກະທົບຕົວຈິງ, ກຳນົດ ແລະ ເຫັນດີຕົກລົງໃນການເສຍຄ່າທົດແທນ ແລະ ພົວພັນເຖິງ ມາດຖານໃນການຍົກຍ້າຍຈັດສັນ. ການສຶກສາ ມາດຕະການໂຄງການແບບລະອຽດ (DMS) ຈະສະໜອງພື້ນຖານຂອງຮ່າງແຜນການຍົກຍ້າຍຈັດສັນຂັ້ນສຸດທ້າຍ (RAP) ຊຶ່ງຈະສົ່ງໃຫ້ ພະແນກໄຟຟ້າ, ກະຊວງພະລັງງານ ແລະ ບໍ່ແຮ່ ແລະ ສິ່ງຕໍ່ ອົງການຊັບພະຍາກອນນໍ້າ ແລະ ສິ່ງແວດລ້ອມ.

ສາຍສິ່ງໄຟຟ້າຈະກວມເອົາທີ່ດິນນໍາໃຊ້ທັງໝົດ ປະມານ 2.88 ຮຕ ຂອງດິນທີ່ເປັນກຳມະສິດສ່ວນຕົວ ໄດ້ສ້າງຄວາມເຊື່ອມໂຊມຂອງປ່າໄມ້ ແລະ ດິນນາ. ດັ່ງນັ້ນ ມັນບໍ່ສະເພາະແຕ່ດິນກະສິກຳທີ່ສູນເສຍໄປ ເທົ່ານັ້ນ, ຍັງມີດິນທີ່ເປັນກຳມະສິດຂອງລັດຈຳນວນ 1 ເຮັກຕາ ທີ່ນໍາໃຊ້ເຮັດສະຖານີສາຍສິ່ງໄຟຟ້າ ຍ່ອຍ “ເຕົາຖ່ານ”.

ຜົນກະທົບຕົ້ນຕໍອື່ນໆ ແມ່ນການບຸກເບີກດິນຈາກການສ້າງແລວສາຍສິ່ງໄຟຟ້າ ຊຶ່ງມີຄວາມກວ້າງ 25 ແມັດ ແລະມີຄວາມຍາວ 220ກມ. ຕົ້ນໄມ້ທີ່ສູງກວ່າ 3 ແມັດ ຈະຖືກຕັດ ແລະ ບໍ່ອະນຸຍາດໃຫ້ມີການບຸກສ້າງໃນບໍລິເວນ ດັ່ງກ່າວ, ແຕ່ວ່າຜົນລະບູກ ອາດຈະສືບຕໍ່ບູກຄືນ ແລະ ປະຊາຊົນສາມາດເຄື່ອນຍ້າຍຜົນຜະລິດໄດ້ຢ່າງອິດສະຫຼະ ແລະ ນໍາເອົາຜະລິດຕະພັນຈາກປ່າມານໍາໃຊ້.

ຕາມເສັ້ນທາງແລວສາຍສິ່ງໄຟຟ້າທີ່ໄດ້ສະເໜີໃນປະຈຸບັນ, ການບຸກເບີກຖາງປ່າ ແລະ ການກໍ່ສ້າງຂອງເສົາໄຟຟ້າ ອາດຈະກະທົບໃສ່ ໂຮງງານໜຶ່ງ ແລະ ທີ່ດິນຂອງໝູ່ບ້ານ ແລະເຮືອນທີ່ຢູ່ໃນ 8 ໝູ່ບ້ານ (ເບິ່ງຕາຕະລາງ 1.1 ດັ່ງລຸ່ມນີ້):

ຕາຕະລາງ 1.1: ບ້ານ ແລະ ສະຖານທີ່ຄ້າຂາຍ ໃນແລວສາຍສິ່ງໄຟຟ້າ

ແຂວງ	ເມືອງ	ນ້ຳເບີ	ຊື່ບ້ານ	ຈຳນວນຫຼັງຄາເຮືອນ ແລະ ຊັບສິນທີ່ຖືກກະທົບ
ແຂວງ	ໄກສອນ	1	ດົງນາຄຳ	1

ສະຫວັນນະ ເຂດ		2	ດົງໝາກຍາງ	1
	ສອງຄອນ	3	ໜອງນົກຂຽນ	4
		4	ທົ່ງສີເມືອງ	1
		5	ຄົບມ່ວນ	17
		6	ນາຄະຍົມ	1
ແຂວງ ສາລະວັນ	ລະຄອນເພັງ	7	ພວງສະຫວັນ	3
		8	ພວງມະໄລ	5

ແຜນການຍົກຍ້າຍຈັດສັນ ໄດ້ສະເໜີໃຫ້ມີການຫຼີກລ້ຽງ ແລວສາຍສົ່ງໄຟຟ້າ ສົ່ງຜົນກະທົບຕໍ່ເຂດພື້ນທີ່ໝູ່ບ້ານ, ເຂດເສດຖະກິດ, ການປູກສ້າງເຮືອນ ແລະ ລວມເຖິງຂອບເຂດການກໍ່ສ້າງ*.

ດັ່ງນັ້ນ, ແຜນການຍົກຍ້າຍຈັດສັນ ອອກແບບເພື່ອໃຫ້ມີການ ຫຼີກລ້ຽງຜົນກະທົບຕໍ່ສັງຄົມ ແລະສິ່ງປູກສ້າງ ຕ່າງໆ, ມູນຄ່າການທົດແທນຄ່າເສຍຫາຍ ແລະ ການໂອນກຳມະສິດສິ່ງປູກ ສ້າງຕ່າງໆຂອງປະຊາຊົນຜູ້ ທີ່ໄດ້ຮັບ ຜົນກະທົບຈາກໂຄງການນີ້ ແມ່ນເປັນສິ່ງທີ່ຈຳເປັນ.

ການສູນເສຍທີ່ດິນ ສ່ວນໃຫຍ່ແມ່ນຢູ່ໃນເຂດຂອງສະຖານີຍ່ອຍຂອງເສົາໄຟຟ້າ 544 ເສົາ ແລະການກໍ່ສ້າງສະຖານີຍ່ອຍໃໝ່ “ເຕົາຖ່ານ”, ຊຶ່ງຊາວນາຈະໄດ້ຮັບການ ທົດແທນຄ່າເສຍຫາຍ ຕາມລາຄາທ້ອງຕະຫຼາດ ໃນເມືອງລະຄອນເພັງ ແຂວງສາລະວັນ.

ຮ່າງແຜນການຍົກຍ້າຍຈັດສັນ ລວມມີນະໂຍບາຍຂອງລັດຖະບານ ແລະ ລະບຽບວ່າດ້ວຍການຍົກຍ້າຍ ຈັດສັນແບບບໍ່ສະໝັກໃຈ, ພື້ນຖານການທົດແທນຄ່າເສຍຫາຍ ແລະ ການມີສິດໄດ້ຮັບການ ທົດແທນຄ່າເສຍຫາຍອື່ນໆ, ພື້ນຖານຂອງກົນໄກການປົກສາຫາລື ແລະ ຂໍ້ຂັດແຍ່ງ, ຜົນຂອງການຂຶ້ນບັນຊີ ການສູນເສຍເບື້ອງຕົ້ນ ແລະ ຜົນຂອງການສຶກສາເສດຖະກິດ-ສັງຄົມເບື້ອງຕົ້ນ.

* ຜົນກະທົບ ພື້ນທີ່ການຍົກຍ້າຍ ໃຫ້ເຫັນຢູ່ໃນ ບົດງາຍງານ ການສຶກສາຜົນກະທົບທາງສິ່ງແວດລ້ອມຂັ້ນຕົ້ນ ແລະ ປະຊຸມພົວພັນກັບຜູ້ທີ່ມີສ່ວນຮ່ວມ ເພື່ອການຫຼີກລ້ຽງຢູ່ໃນແລວສາຍສົ່ງ. ການປັບປຸງເຫຼົ່ານີ້ ແມ່ນຕ້ອງການໃຫ້ຍືນຍັນໃນຊ່ວງ DMS.

1 EXECUTIVE SUMMARY

This Draft Resettlement Action Plan (RAP) has been prepared to provide a basis of planning for all resettlement measures which will be undertaken to restore assets and livelihoods of people affected by the construction of the 115 kV Transmission Line from Savannakhet to Saravan.

Project Affected Persons (PAPs) for this project include those impacted by the creation of a 25m Right of Way (ROW) the length of the TL in Savannakhet and Saravan Provinces, and those affected by the construction and maintenance of transmission towers (Savannakhet and Saravan Provinces) and the new sub-station at Taothan, Saravan Province. By resettlement is meant all action to mitigate or compensate for any impact suffered by the affected population, and to restore any lost assets and livelihoods.

In Lao PDR, there are four electric power networks; the Northern network, the Central 1 network, the Central 2 network and the Southern network, which are independently operated and not interconnected. The current situation creates technical inconvenience and financial inefficiency. For instance electricity needs to be purchased back from Thailand which constantly buys electricity from Lao PDR at a high price to cover a shortage in a certain region when another region has surplus. This often happens, and the consequent financial loss is recognised as a critical national problem. In order to solve this problem the Government of Lao PDR with support from the Government of Japan is planning to connect the two of these power networks - central 1 and central 2 and central 2 and the southern network. The construction work for the connection of Central 1 and the Central 2 networks has already started.

The objectives of network interconnection include:

- To improve the National power network,
- To increase the efficient management of the power sector,
- To enhance economic activities, and
- To contribute to fulfilling the basic human needs of Lao PDR.

This report focuses on the Savannakhet – Saravan 115 KV Transmission line, which is proposed to connect the Central 2 network with the South power network.

Earth Systems Lao has been commissioned by JICA to conduct an independent Initial Environment Examination (IEE) and prepare an Environmental Management Plan (EMP) and a Draft Resettlement Action Plan (RAP) for the Savannakhet – Saravan 115 Kv Transmission line.

This Draft RAP is a preliminary document and has been prepared for purposes of the Feasibility Study. This document will remain a draft until it is revised at or before the

detailed design stage. Revisions will take into account the changes likely to be made to the transmission line alignment and the location of the sub-station. Once the alignment and location of the sub-station are confirmed, an Inventory of Losses (IOL) and Detailed Measurement Survey (DMS) will be undertaken to identify and measure exact impacts, and to determine and agree on compensation and related resettlement measures. The DMS will provide the basis of a final draft of the RAP, which will then be submitted through the Department of Electricity (DOE), Ministry of Energy and Mines (MEM) to the Water Resources and Environment Administration (WREA).

The TL will involve the acquisition of a total of about 2.88 ha of privately owned land, made up of degraded forest and rice paddy. A further 1 ha of governmental owned land will be acquired for the Taothan sub-station. It is not therefore expected to involve any significant loss of agricultural land.

The other main impact is that of the clearance of land in a 25 m strip ('Right of Way') beneath the TL for the length of the 220 km alignment. Within this ROW, trees will be cleared if higher than 3 metre and buildings will not be permitted, but crops may continue to be grown and people can move freely and to gather forest products.

Based on the current proposed alignment, the clearance of the TL ROW and the construction of towers would impact on one factory and on village residential land and houses of eight villages (refer to Table 1-1 below).

Table 1-1 Villages with residential and / or commercial structures within the original TL ROW.

Province	District	Village No.	Village Name	No. HH and / or Assets Affected
Savannakhet	Kaysone	1	Dongnakham	1
		2	Dongmakyang	1
	Songkhone	3	Nongnokkhen	4
		4	Thongsimeuang	1
		5	Khummuang	17
		6	Nakangom	1
Saravanh	Lakhonepheng	7	Puangsavanh	3
		8	Puangmalay	5

The RAP proposes the realignment of the TL to avoid any impact on village residential areas, commercial or residential structures and related out-buildings.*

* Impacts on resettlement areas identified in the draft IEE report and communicated at the stakeholder workshop have now been avoided with line realignment. These adjustments will need to be confirmed during the DMS. .

The RAP is therefore designed on the basis of avoidance of any impact on structures and of the social impact and the cost of compensation and relocation of the structures of PAPs, which would otherwise be substantial.

The loss of land is mainly in the footprints of 544 towers and in the newly constructed sub-station at Taothan in the Lakhonpheng District of Saravan Province, for which the concerned farmers will be compensated at market prices.

The draft RAP includes details of the Government's policy and regulations on involuntary resettlement, the basis of compensation and other entitlements, basis of consultation and grievance mechanism, the results of a preliminary inventory of losses, and the results of an initial socio-economic survey.

2 INTRODUCTION

2.1 Background

The Government of Lao PDR aims to expand domestic electrification to attain a 90% supply target throughout the country by the year 2020. The electricity development will form a significant contribution in meeting the government's Poverty Reduction target and removing Lao PDR from the list of "Least Developed Countries" by 2020. Currently Lao PDR has developed approximately 10% of its Hydropower potential which is estimated to be 18,000 MW, with the completion of Nam Theun 2 in 2009. However, such development has already been a major contributing factor to the country's economic output in export earnings for the last couple of decades.

In Lao PDR, there are four electric power networks; the Northern network, the Central 1 network, the Central 2 network and the Southern network, which are independently operated and not interconnected (see Figure 2 1). The current situation creates technical inconvenience and financial inefficiency. For instance electricity needs to be purchased back from Thailand which constantly buys electricity from Lao PDR at a high price to cover a shortage in a certain region when another region has surplus. This often happens, and the consequent financial loss is recognised as a critical national problem. In order to solve this problem the Government of Lao PDR with support from the Government of Japan is planning to connect the two of these power networks - central 1 and central 2 and central 2 and the southern network. The construction work for the connection of Central 1 and the Central 2 networks has already started.

The objectives of network interconnection include:

- To improve the National power network,
- To increase the efficient management of the power sector,
- To enhance economic activities, and
- To contribute to fulfilling the basic human needs of Lao PDR.

This report focuses on the Savannakhet – Saravan 115 KV Transmission line, which is proposed to connect the Central 2 network with the South power network.



Figure 2-1 Transmission System in Lao PDR (source: Long-term Power Development Plan 2007-2016, EDL et al 2009)

2.2 Project Owner

Proponent, financier and contractor details are as follows:

Name of Developer: Electricite du Lao (EDL)

Funded by: Japan International Cooperation Agency (JICA)

Head Contractor: Tokyo Electric Power Company, INC. (TEPCO)

Contact Address:

Electricite du Laos (EDL)/ JICA Study Team, Lao PDR

JICA Laos Project Office

PO.Box 309, Nongbone Road,

Vientiane, Lao PDR

2.3 Purpose and Scope of the draft RAP

2.3.1 Specific Purposes of the RAP

The draft RAP, which has been prepared as an integral part of the IEE, has four specific purposes:

- First that of providing data about the level and kinds of social impact of the TL construction, especially impact on the land, other fixed assets, including houses and other structures, of households and farms of people affected by the project, and impact on their livelihoods and communities and their quality of life;
- Secondly that of providing a planning framework and a provisional database for the indicative planning and eventual conduct and preparation of a full RAP, following the conduct of the Inventory of Losses and Detailed Measurement Survey of 100% of affected households and assets and a detailed assessment of impact on community or common facilities and assets at the detailed design stage;
- Thirdly that of setting out the policy and regulatory guidelines on involuntary resettlement of the Lao PDR Government and JICA; and
- Fourthly that of stating specific policy objectives of resettlement as an active and positive process to ensure the contribution which the construction of the TL is capable of making to the quality of life of the people and communities through whose land and physical and social assets it passes.

2.3.2 Scope and Limitations of the RAP

The RAP is based on the proposed dimensions and alignment of the TL and sub-stations, and on the proposed construction programme. These are sufficiently well known from the proposed design and from regulatory factors to permit the extent of land loss and potential impact on structures and other fixed assets and on temporary impact on agricultural production activity to be calculated within a high probable degree of accuracy.

Land loss and potential impacts on structures have been identified by means of a preliminary village survey and GPS study. During the study, impacted land and structures within the ROW were quantified with the assistance of the village headman. Preliminary ground surveying was undertaken for a majority of the line. The results of this surveying, however, need to be confirmed with a Detailed Measurement Survey (DMS). A provisional socio-economic survey was also conducted of a random sample of identified PAPs.

The exact location of land losses and any impact on structures and the identity of affected households will, however, not be confirmed until the alignment and location of towers and sub-stations are confirmed and a full Inventory of Losses and Detailed Measurement Survey are completed. Further, consultations on any mitigatory action and compensation for PAPs must be carried out before the full RAP is prepared.

The three factors which will be needed in the preparation of a full RAP and which are not known at this stage of project preparation are:

- The exact location and identity of affected households and fixed assets (since the exact alignment of the TL and location of a sub-station are not yet decided);
- The precise impact on affected households and on their livelihoods and assets;
- The precise compensation rates at which lost or impacted assets or facilities, or impacted livelihoods, would be compensated (which must reflect current market prices and negotiation and agreement with the affected people).

These would be identified by means of Inventory of Losses, conducted jointly with PAPs and local leaders, at or prior to the detailed design stage.

2.3.3 Specific Policy Objectives and Strategies of the RAP

Some aspects of the impact of the construction and permanent presence of the transmission line, especially those which impact on communities, on the population as a whole or on visual, cultural and spiritual aspects of the landscape are not easily describable or measurable. These include:

- Destruction or reduction of forest or rangeland which may be, even when in private ownership, part of the common pool resources of the community, not necessarily

confined to the village, and used for the gathering of non-timber forest products such as fruit, mushrooms, vegetables and fuel wood.

- Impact on spirit forests is also not precisely measurable and the possibilities of recompensing a community, in a way which allows for any replacement of intangible qualities, including animistic qualities and associations, are difficult to identify. In practice this has been done to date, in other TL and similar projects, by financial recompense, on the assumption that the community or its spiritual leaders have the means to replace and relocate these attributes.
- Visual impact of the TL and towers and the feelings of the community about a drastic change to their landscape, and about the restrictions on land use and the natural growth of vegetation are difficult to ascertain.

In the preparation of the RAP we have informed communities about the project and shown visual images of the TL, and have asked whether affected people believe that the project is good or bad for them. The answer is universally that it is good, and discussion with individual affected people and village meetings makes it clear that they recognize both the value of better and cheaper electricity supply and the social and economic benefits which that will bring, which will eventually come to them, and the need to accept losses and impacts in the interests of social and economic development which will benefit them and their children.

This recognition and participation of affected people in the project, for example in undertaking responsibilities for clearing vegetation in the ROW, does not, however, mean that the full impact of the TL and the changes it will bring to affected communities and their environments are fully known, or that they do not cause worries and negative sentiments.

2.3.4 Livelihoods Restoration and Improvement.

The intention of the RAP is that impacts on the community as a whole can be redressed by ensuring that the community is protected from specific negative impacts, and that it receives specific benefits which can be brought to bear within the resettlement programme, and which can be planned for and funded in the RAP. These should include support for programmes of livelihoods restoration and development at the community level, directed especially at more vulnerable households.

A Livelihoods Restoration and Improvement Programme would provisionally include literacy and Lao language training, agricultural, including livestock development, credit and extension programmes, financial support for village funds and savings and credit associations, and mother-child health care and HIV/AIDS awareness and prevention programmes. All of these activities can be conducted within existing programmes of the Provincial agencies concerned, with specific assistance by NGOs already working in these sectors in the two Provinces. A specific programme of livelihoods restoration and

improvement is outlined below in section 5.5 and funding provided for this purpose in the estimated Resettlement Budget.

2.4 Brief Project Description

2.4.1 Location of the Project

The proposed transmission line will run for approximately 220km from Pakbo sub-station in Savannakhet Province through a sub-station at Taothan to a planned Saravan sub-station in Saravan Province. The transmission line route passes through seven (7) districts across the two provinces (see Table 2.1).

Table 2-1 Provinces and districts

Province	District
SAVANNAKHET	Kaysone Phomvihane
	Xaiphouthong
	Champhon
	Songkhon
SARAVAN	Lakhonpheng
	Vapi
	Saravan

The transmission line corridor is adjacent to existing roads (Route 13 and Route 15), and passes within 500 m of the Phou Xieng Tong National Protected Area (NPA) and 5km of the Xe Bang Nuan NPA and crosses three major rivers (Xe Banghiang, Xe Bang Nuan, Xe Done (Figure 2-2).

The transmission line route has been adjusted as a result of a change in the location of the sub-station in Lakongpheng District in late July (see section 2.4.2 below). This realignment is shown on Figure 2-2. More recently adjustments to the line have been made by project engineers to avoid resettlement impacts. These changes and their associated impacts will need to be confirmed during the detailed measurement survey.

2.4.2 Project design

The Project includes the construction of 220 km of 115 kV transmission line, and one sub-station at Taothan. The Project will utilise the existing sub-station at Pakbo and planned sub-station at Saravan.

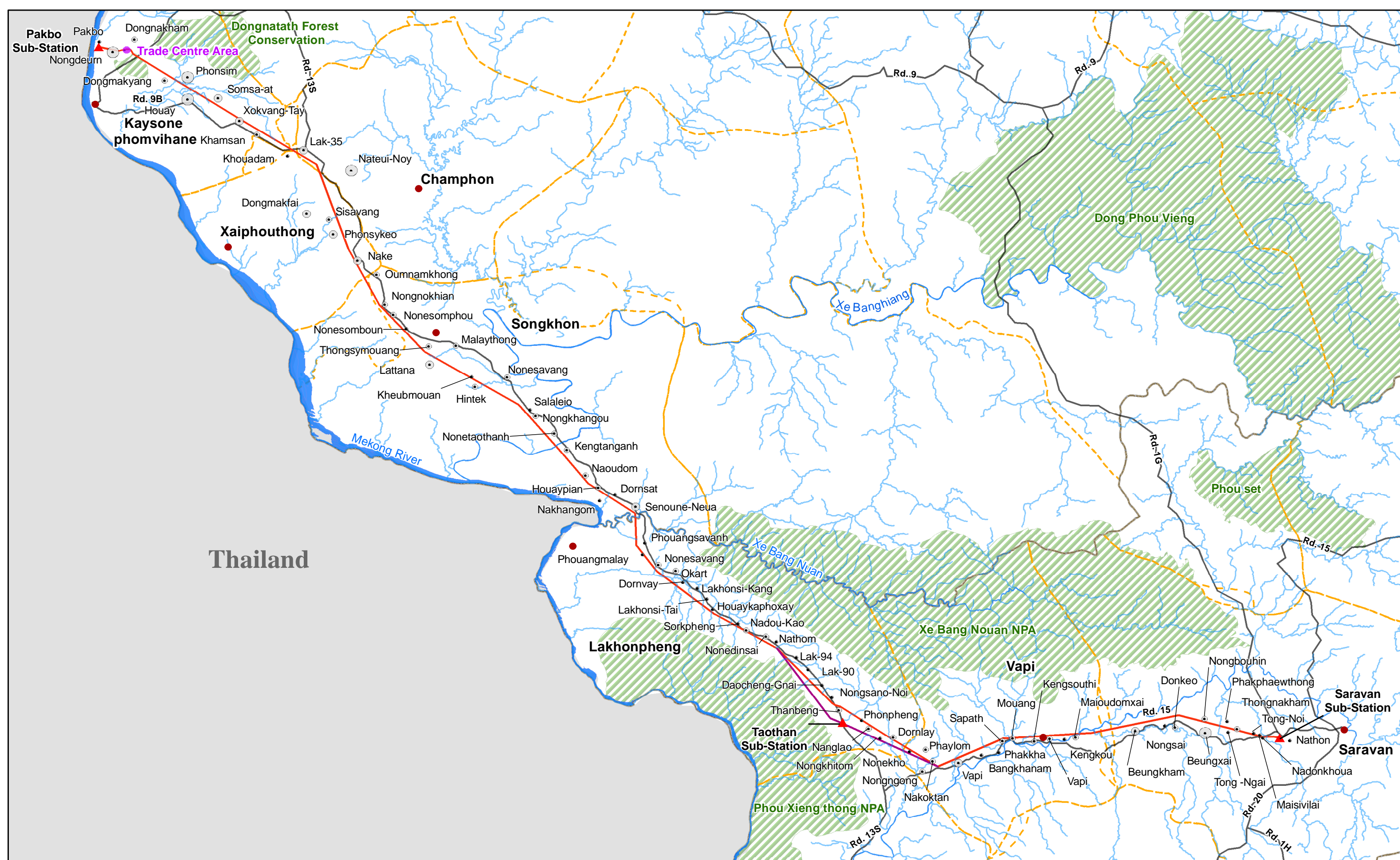


Figure 2.2 The Project Area


- Households
- < 110
 - 111 - 220
 - 221 - 350
 - > 351


- ▭ Province Boundary
- ▭ District Focus
- ▭ District Boundary
- ▨ National Protected Area

- Main Road
- Streams
- ▭ Main River
- Jica Transmission Line 115 KV

- District Centre Point
- Trade Centre Area
- ▲ Sub-Station
- Realignment (due to new sub-station location)




 EARTH SYSTEMS LAO
 Environment - Water - Sustainability


 0 5 10 20 km
 Scale: 500,000 (A3)
 Projection: Wgs 84, UTM Zone 48 North

Sub-station design

The project will upgrade the existing station at Pakbo, utilise a planned sub-station in Saravan, and construct one new sub-station at Taothan. The new sub-station will be an open air design on an area of approximately 1 hectare. It will consist of main transformers, switchgear instruments and will take into consideration impacts of noise, vibration and other impacts on the surrounding environment.

The original sub-station site near Ban Nongnou was changed to a location near Ban Taothan after the field surveys had been completed. According to the EDL this land is owned by the Government. The site is approximately 300 metres from the settlement area of Ban Taothan.

Tower design

It is estimated that a total of 544 towers will be needed for this project including a mixture of tension towers and angle towers. Table 2-2 and Table 2-3 provide an overview of tower design features. The proposed type of tower is 'self-supporting and broad base lattice galvanized steel' towers with concrete foundations. Tower height is 34 – 40 m and average footprint of each tower is 52.99 m².

Table 2-2 Line Design Features

Line design features	Savannakhet – Saravan 115kv line
Line length	217.7 km
Type	Galvanized steel towers with concrete foundations
Number of towers	544
Average span between towers	400 metres
Tower height	34 – 40 m
Tower land area	51.84 - 90.25 m ²
Right of way (RoW)	25 metres (12.5m either side of line)
Existing Sub-stations	Pakbo
Planned sub-station	Saravan
New sub-station	Taothan (1ha)

Table 2-3 Type, Weight and Number of Transmission Tower to be used for the Project

Type of Steel Tower	Number of Tower	Land Required per Tower (m2)	Total Area Required (m2)	Total Area Required (ha)
Pakbo - Taothan				
A 1	317	51.84	16,433.28	1.64
A 2	14	56.25	787.5	0.08
B 1	28	60.84	1,703.52	0.17
C 1	6	60.84	365.04	0.04
D-I	2	60.84	121.68	0.01
D 2	1	90.25	90.25	0.01
DE-I	2	60.84	121.68	0.01
<i>Sub-total</i>	<i>370</i>		<i>19,622.95</i>	<i>1.96</i>
Taothan - Saravan				
A 1	151	51.84	7,827.84	0.78
A 2	4	56.25	225	0.02
B 1	14	60.84	851.76	0.09
C 1	2	60.84	121.68	0.01
D 1	1	60.84	60.84	0.01
D 2	0	90.25	0	0
DE	2	60.84	121.68	0.01
<i>Sub-total</i>	<i>174</i>		<i>9,208.8</i>	<i>0.92</i>
TOTAL	544		28,831.75	2.88

Right of way

Right of Way (ROW) for the transmission line is twenty five (25) metres (12.5 metres from the centre line (see Figure 2.2). The total area for the 217.7 km line is 5.5km². According to Lao Electrical Power Technical Standards (MIH 2004) for safe clearance to a live conductor for a 115 kV transmission line the following clearances will be maintained:

- Common place ground clearance: 5.98 metres
- Mountainous area: 5.48
- Navigable river: 2.48 metres (above mast height)

- Un navigable river: 5.48 metres
- Road crossing: 6.48 metres
- Building: not permitted

Tall trees within 12.5 m on both sides of the centre line must be cut to ground level. Trees beyond the 12.5 m are on both sides will be trimmed and pruned at or below 2.48 metres to maintain a clearance of 2.48 metres

This project will follow common EDL clearance practice. On government land, any trees that have the potential to grow above 3m will be cleared. On private land, trees that can survive at less than 3m will be pruned and maintained below this height.

Access road

As the line runs close to national roads 13 and 15 at this stage access to the line is considered good. The proponent has not planned any additional access tracks at this stage.

2.4.3 Quantity and Quality of Raw Material to be Used

All electrical components and other materials required for project construction were estimated by TEPCO and Nippon Koei Co., Ltd. in collaboration with project owner (EdL). They may include transformers, conductor wires, insulators, steel towers, concrete for tower bases, and others. The estimated quantities of materials for the construction of transmission lines and sub-stations are as follows:

a) Transmission Lines

Items	Unit	Q'ty
Tower	Ton	3,500
Conductor	Km	1,300
OPGW 60mm ²	Km	250
OH G.W.	Km	250
Insulator	Unit	40,000
Insulator String Unit	Set	3,700
Dumper for Conductor, GW and OPGW	Unit	8,800
Sleeve for Conductor and GW	Unit	850
OPGW Joint Box	Unit	50

GW and OPGW Unit	Set	580
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b) Sub-stations

Items	Unit	Q'ty
Pakbo		
115 kV transmission line bays including protection & control	Set	2
Extension of 115kV busbar with structure	Lot	1
Steel structures (gantries)	Lot	1
Conductors, cables, accessories, connectors, hardware, etc	Lot	1
Taothan		
3 Phase 115/22 kV Transformer, 10 MVA	Set	2
Auxiliary Transformer, 22/0.4 kV, 200 kVA	Set	1
115 kV transformer bays including protection & control	Set	2
115 kV transmission line bays including protection & control	Set	4
115 kV transformer protection and control	Set	2
115 kV line feeder protection and control	Set	4
115 kV & 22 kV busbar with structure	Lot	1
115 kV & 22 kV steel structures (gantries)	Lot	1
22 kV transformer bays including protection & control	Set	2
22 kV line feeder bays including protection & control	Set	8
22 kV static capacitor banks including protection & control	Set	2
Conductors, cables, accessories, connectors, hardware, etc	Lot	1
Control building	Lot	1
Distributed Control System (DCS)	Lot	1
Optical fiber communications system including ODF, PABX, etc.	Lot	1
VHF radio telecommunications system	Lot	1
110 V & 48 V battery banks and chargers	Set	2
AC & DC distribution boards	Set	1
Earthing, lighting and lightning protection systems	Lot	1

Items	Unit	Q'ty
Saravan		
115 kV transmission line bays including protection & control	Set	2
Extension of 115kV busbar with structure	Lot	1
Steel structures (gantries)	Lot	1
Conductors, cables, accessories, connectors, hardware, etc	Lot	1

c) Transmission Towers

Total volume of concrete for tower foundations (m²) = 4,300 m².

2.4.4 Quantity and Quality of Waste Products Generated By the Project

The major waste created by the Project will be vegetation from the ROW clearance. Prior to disposal, local residents will be given access to this waste so that they can utilise it for firewood, raw materials, charcoal production, etc.

In the case where the alignment passes the natural forests (where commercial timbers are present), the trees with more than 15 cm diameter will be listed and logged by the Provincial Agriculture and Forestry Department (Provincial Forestry Section) and District Agriculture and Forestry Office (DAFO), and the Provincial Industry and Commerce Department will be responsible for the sale of this timber. Where the alignment passes to the plantation forests, all trees will be removed and sold by the owners.

In addition to vegetation waste, it is anticipated that between 10 m³ and 12 m³ of soil will be excavated from each tower base, resulting in a total of approximately 6,000 m³ of spoil. A part of these soils will be spread around the tower bases to facilitate natural re-vegetation and or use as fill in depressions nearby so as to minimize destruction to the tower bases. Most of the excavated soil, however, need to be taken away and disposed of the appropriate site in comply with the requirement of local authority. The dispose site of the excavated soil needs to be acquired before a commencement of any construction activities.

2.4.5 Project Costing

Total cost of the project is estimated at US\$ 37,773,700

- Transmission Line: \$24,247,000.00
- Sub-station facilities: \$8,014,300.00

- Other costs include Consultants fee and Contingency[†]: \$5,512,400.00

2.4.6 Project Activities and Schedule

The draft schedule post feasibility is provided in Table 2-4 below and includes:

- Detail Design and Preparation Stage: (7 months)
- Bid and Contract with Contractors: (6 months)
- Works for Transmission Lines and Sub-station Construction: (23 months).

[†] Land and R.O.W. compensation is included in Contingency

Table 2-4 Project Schedule

Work Items	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Detail Design Stage (by consultant)																																								
Contract signed with the Consultants	▲																																							
Preliminary route survey and soil boring		■	■	■	■																																			
Detail design				■	■	■	■																																	
Preparation of Bid Document						■	■	■																																
Bid and Contract with Contractors																																								
Bid announcement																																								
Preparation of Bid document by contractors												□	□																											
Bid opening and evaluation												■	■																											
Contract negotiation and signed with contractors													■																											
Works for Transmission lines																																								
Check survey and soil boring														■	■	■	■	■																						
Cleaning of right of way																		■	■	■	■	■																		
Construction of access road																		■	■	■	■	■																		
Facility design and approval														□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	
Manufacturing and transportation																																								
UXO survey																																								
UXO clearance, if any																																								
Foundation work																																								
Tower erection work																																								
Stringing work																																								
Test and commissioning																																								
Works for Substation Facilities																																								
Detail design, survey, and soil investigation																																								
Facility design and approval																																								
Manufacturing and transportation																																								
Civil work																																								
Erection work																																								
Test and commissioning																																								

■ : Works in Laos □ : Works outside of Laos

3 SOCIO-ECONOMIC SURVEY AND CHARACTERISTICS OF THE PROJECT AREA

The Project is the Savannakhet and Saravan provinces in Southern Lao PDR. Savannakhet has a total area of 21,774 km², and is bordered by Saravan Province in the south, Khammouane Province in the north, Vietnam to the east and Thailand to the west. Savannakhet is divided into 15 districts.

Saravan is about half the size of Savannakhet, with a total area of 10,691 km², which is divided into 8 districts and located to the south of Savannakhet and north of Sekong province (with Vietnam and Thailand on the east and west, respectively) (NSC, 2007).

The transmission line ROW will traverse through seven districts, four of which are in Savannakhet province (Kaysone, Champhone, Xaiphouthong and Songkhone) districts, and three in Saravan province (Lakhonphen, Vapi and Saravan) districts (see Figure 2 1 The Project area). The general terrain of these areas is flat and mainly used for agricultural practices (NSC, 2007).

3.1 Methodology for Field Survey, Community Consultation and Data Collection

Community consultations were conducted in three (3) phases during two field missions in June and July 2009:

- Phase 1 Identification study and initial impact data collection through village level meetings with the village committees of 19 affected project villages within 500 metres of the proposed transmission line;
- Phase 2 Village level meetings with the village committees and GPS identification of TL alignment and impact data collection of all affected land and structures and owner households in the ROW of the TL in the remaining 62 villages identified as affected project villages; and
- Phase 3 Village level meetings and socio-economic survey of 250 randomly selected households in 37 of the 81 villages affected by the transmission line project.

Phase 1 and Phase 2 surveys were mainly addressed to identifying and collecting data on the impact of the TL and of one sub-station on the land, structures and other fixed assets of PAPs and communities.

The Phase 3 Socio-economic survey was designed as a random sample survey of PAP households. The sample selection was also directed to achieving a representative sample which would both provide a socio-economic profile of the project area, specifically in or adjoining the TL ROW, identify the likely impact on livelihoods, especially of vulnerable households, and provide an opportunity for PAPs

to indicate their attitudes to the project and their preferences for any action to restore or improve impacted assets and livelihoods.

For that purpose, and to provide a feasible basis of survey within a restricted timetable and resources, the sample was based on selecting all villages with 10 or more households whose land or other assets are expected to be impacted by the TL. Out of these a 40% random sample provided a total of 240 households which were surveyed in 37 villages.

During each village meeting and in household interviews, a brief description of the project was provided, and the IEE process was explained using the project information brochure. Participants were given an opportunity to provide comments, advice and information relevant to the project. Standard survey questionnaires were used to record discussions. Photos were taken of village level meetings.

Primary data obtained through the consultation process was supplemented by secondary sources of data/information including extensive district annual reports; demographic and other data collected directly from district and village authorities in the Project area; and, numerous studies, reports and other documents related to the Project.

A summary of survey data is provided in Annex 2. Forms and tools used throughout the consultation exercise are presented in Annex 3.

3.2 Population of the Project Area

Savannakhet has the second largest population in Lao PDR with 825,902 people (NSC, 2005). The province is divided into 15 districts and has a total of 1,543 villages and 131,216 households, with an average household size of 6.3 people. The average size of each village in Savannakhet is 14 km².

Saravan has a population of 324,327 people (NSC, 2005). Saravan is divided into 8 districts and has 724 villages and 53,013 households, with an average household size of 6.1 people. The average size of each village in Saravan is 15 km².

The transmission line ROW will traverse through seven districts, four of which are in Savannakhet province (Kaysone, Champhone, Xaiphouthong and Songkhone) districts, and three in Saravan province (Lakhonphen, Vapi and Saravan) districts (see Figure 2-2).

3.2.1 Affected population

The ROW traverses land within the village boundaries of 81 villages. Within these 81 villages, 904 households will be directly affected by the vegetation clearance and restrictions on land use within the ROW and the presence of the TL. Of these, approximately 540 households will be affected by the loss of land due to the construction of the transmission line towers.

As the site for the Taothan sub-station was selected after field work was completed, there was no ground survey of this site. Based on information provided by TEPCO and EDL, it is understood that the land for the sub-station is currently owned by the Saravan Province, and therefore there will be no households or agricultural land affected by the use of this site.

Because of the realignment of the TL in the eight sections where, as currently designed, it would pass village residential land, there is expected to be no loss of or relocation of houses or other substantial structures. One factory which would be impacted by the proposed TL alignment would also be avoided by realignment. There are, however, a small number of farm structures within the ROW, which would need to be dismantled or relocated.

Based on information provided by nineteen (19) villages, the average growth rate was 12 percent, with individual village growth rates ranging from 2% to 50%, primarily from in-migration.. The number of births over the last 12 months was more than double the number of deaths; and number of people migrating to these villages was about 30% higher than the number of people emigrating. The primary reasons for immigration were marriage and looking for new economic opportunities and land. The main reasons for emigration were marriage and moving closer to relatives.

Table 3-1 presents a summary of the geographic distribution of the affected population.

Table 3-1 Summary of households impacted by the proposed line

Provinces	Districts	No. of Villages	No. of HH with Land in ROW	No. of HH with Structures in the HH
2	7	81	904	33
Savannakhet	4	35	462	25
	Kaysone	8	101	2
	Champhone	2	22	-
	Xaiphouthong	6	96	-
	Songkhon	19	243	23
Saravan	3	46	442	8
	Lakhonpheng	21	211	8
	Vapi	13	137	-
	Saravan	12	94	-

Source: ESL Village-Level Surveys 2009

3.2.2 Demographic Structure

The sex ratio in surveyed villages was 1.1 females per 1 male with a total of 891 females to 811 males in the 251 households surveyed in the socio-economic survey.

The higher number of females to males throughout the population is considered normal for the population of rural Lao PDR.

The average household size for the Project affected villages is 7.8 persons per household, which is higher than the Savannakhet and Saravan provincial averages of 6.3 and 6.1 persons per household respectively (NSC, 2006), and mainly reflects the customary presence of more than one married couple or nuclear family in many households. On average each household has 1.6 married couples.

Based on information provided by nineteen (19) villages, the average growth rate was 12 percent, with individual village growth rates ranging from 2% to 50%, primarily from in-migration. The number of births over the last 12 months was more than double the number of deaths; and number of people migrating to these villages was about 30% higher than the number of people emigrating. The primary reasons for immigration were marriage and looking for new economic opportunities and land. The main reasons for emigration were marriage and moving closer to relatives.

3.2.3 Ethnicity, religion and cultural heritage

Lao PDR's population is characterised by significant ethnic diversity. The 2005 Population and Household Census identified 49 different ethnic groups (NSC 2006). In Savannakhet, the main ethnicity is the Tai Family consisting of Lao (62%), Phou Thai (15%), and Makong (9%). In Saravan, the main ethnicity is the same as in Savannakhet consisting of Lao (61%), Katang (13%) and Souay (8%) (NSC, 2007).

Ethnicity in the Project area is similar to the provincial wide statistics. The majority of people (92%) are from the Tai Family and practice Theravada Buddhism mixed with elements of animism (see Table 3 2). Other ethnic groups present in the Project Area include Katang, Ta-Oy and Xuay / Suiy which are all members of the Mon-Khmer language family. In the Project Area, these groups are almost entirely located in Saravan Province. The Saravan District of Saravan Province was the most diverse, with 52% Lao, 18% Xuay / Suiy, and 28% Ta-Oy.

The majority of people in the Project area are Buddhist (96%), followed by Christian (3%). Those practicing the Christian faith are located entirely within the Savannakhet Province in Xaiphouthong, Champhone and Songkhone Districts.

Village level surveying found all ethnic groups to have a long association with the local area and the minority groups have generally been absorbed into the mainstream Lao-speaking society. The following cultural related aspects that are relevant to the Project and the planning of social mitigation measures were observed:

- Buddhists practice cremation, and therefore, do not tend to have important burial sites. Most communities also practice elements of Animism and spirit forests exist in Project villages.
- The traditional Lao principle of the husband moving to live with and work for his wife's parents is still widely practiced in the Project area. The importance of the extended family unit is said to be increasing, reflected in the number of married couples per household recorded among impacted households

Table 3-2 Main Ethnicity and Main Religion by village in the Project Area.

Province	District	Ethnicity						Religion	
		Lao	Phouthai	Xuay/Suiy	Katang	Ta-Oi	Other	Buddhist	Christian
Savannakhet	Kaysone Phomvihane	84%	11%	0%	0%	0%	4%	100%	1%
	Xaiphouthong	100%	0%	0%	0%	0%	0%	89%	11%
	Champhone	96%	0%	0%	0%	0%	4%	96%	4%
	Songkhone	100%	0%	0%	0%	0%	0%	96%	5%
Saravan	Lakhonpheng	95%	0%	0%	5%	0%	0%	100%	0%
	Vapi	100%	0%	0%	0%	0%	0%	100%	0%
	Saravan	52%	0%	18%	1%	28%	2%	90%	0%
Average		90%	2%	3%	1%	4%	1%	96%	3%

Source: ESL surveying 2009

3.3 Economic overview of the Project area

3.3.1 Regional economy

Savannakhet province

According to the Savannakhet Socio-Economic Development Plan 2008 (Savannakhet Province, 2009), the economic growth rate for the province in 2007-2008 was 13.8%.

Agriculture is the largest sector in the economy. Rain-fed rice is by far the largest crop cultivated covering an area of 162,242 ha with an average production of 3.5 ton/ha and a total annual production of about 567,000 tonnes. Irrigated rice (28,256 ha) and dry season crops (19,115 ha) are also important.

The Province of Savannakhet and residents also have substantial income from seasonal or longer term wage migration across the border to Thailand. This is a well-regulated element of the labour market and of a rapidly growing diversification of household livelihoods, and has contributed in recent years to a comparatively prosperous population in the project area. As noted below, there is little evidence of severe poverty or landlessness.

The province has 29 companies investing in tree and crop plantations, such as, rubber, Eucalyptus, Acacia, sugar cane, and cassava. In 2008, across the province, a total of 30,000 ha of land were cleared for these plantations.

In 2008, there were 2,801 factories registered within the province including, 28 considered large, 50 medium, 2,195 small and 528 family sized factories. The numbers of factories has increased since 2007; however, the total value of production has decreased by 50% compared to last year. In 2008 the province imported more than \$200 million worth of goods, which was more than double the previous year.

Saravan province

According to the Saravan 2007-2008 Socio-Economic and Development Plan (Saravan Province 2008), the economic development objective of the province is to shift the economy from subsistence production toward market products. In 2008, the province recorded a 9% economic growth rate and a GDP of \$202 million.

Agriculture is the largest sector in the economy and is focused on crop cultivation and tree plantations. Rice is the key crop, and annual production in 2007-08 was recorded at 256,500 tonnes. Coffee is also an important crop that is grown in the southern parts of the province. Coffee production was reported at 16,474 tonnes in 2008. Crop and tree plantations include cassava, which has increased ten-fold in recent years – now covering an area of 2,119 ha and producing about 53,000 tonnes – and rubber and other tree plantations, which cover approximately 4,400 ha.

The services sector in the province is growing with a focus primarily on tourism. Tourism arrivals have increased three-fold – from about 8,000 people in 2005 to 24,000 people in 2008.

Industry in the province is focused on the development of energy and mineral resources (e.g. Xeset II Hydropower Project). In 2008, there were 74 licensed factories in the province, the majority of which process wood for exporting to other provinces and across the border to Thailand and Vietnam. Total export value for the province was about \$11 million in 2008. In addition to wood, other exports include energy and coffee and other agricultural products. Import value is about five times higher than export value at about \$49.4 million in 2008.

3.4 Economic Activity in the Project Area

3.4.1 Employment

As described above, the regional economy in both provinces is still predominately agriculture based. See Table 3-3 for information on the distribution of occupation in agriculture, fishery and non-farm activities at the national, provincial and district levels, but has seen substantial diversification of livelihoods in response to commercial and labour market opportunities, including wage migration to Thailand and investment from remittances.

According to the national census (NSC 2005), in the seven districts that comprise the Project Area, over 80% of the total active population work as farmers. With the exception of the Kaysone Phomvihane District in Savannakhet, where only 45% of workers are farmers, the other six districts reported at least 90% of residents engaged in farming activities. The Kaysone Phomvihane District has such a significant proportion of non-farming activity because it contains the provincial capital and trading centre of the province, Savannakhet City, but also because of the influence of cross-border trade and labour migration.

Results of village level surveying follow the general employment trends outlined above, i.e. all villages surveyed regard agriculture and agricultural trading as their top two important economic activities.

This is reflected also in National Statistical Centre statistics on employment in the two provinces.

Table 3-3 Distribution of employment in Savannakhet and Saravan Provinces.

Level		Total Active Population	Farmer	Fisher-man	Livestock farmer	Mixed farmer	Non-farm activity
			%				
Country	Lao PDR	2,738,892	63%	0.10%	0.20%	13%	24%
Province	Savannakhet	431,045	86%	0.00%	0.10%	1%	13%
District	Kaysone Phomvihane	49,466	45%	0.20%	0.20%	1%	54%

Level		Total Active Population	Farmer	Fisher-man	Livestock farmer	Mixed farmer	Non-farm activity
			%				
	Xaiphouthong	26,201	95%	0%	0%	0%	5%
	Champhone	52,144	91%	0%	0%	0.20%	9%
	Songkhon	46,163	94%	0%	0%	0%	6%
	Sub-Total	173,974	79%	0.10%	0.10%	1%	20%
Province	Saravan	167,166	80%	0.00%	0.00%	13%	7%
District	Lakhonpheng	21,140	93%	0%	0%	0.10%	7%
	Vapi	15,606	93%	0%	0%	0%	7%
	Saravan	42,667	90%	0%	0%	0.10%	10%
	Sub-Total	79,413	91%	0%	0%	0.10%	9%
Total Project Area Districts		253,387	83%	0%	0%	0%	17%

Source: NSC, 2005

3.4.2 Wealth and poverty in surveyed villages

During village level surveying in the Project Area, village chiefs were asked to group village households into three categories – wealthy, average and poor, and then estimate the average annual income of households in those categories. Table 3-4 summarizes the collective perceptions of wealth among the survey participants in the Project Area. Of the 81 affected villages, approximately 17% of families are considered very well off, 70% sufficiently well off and 13% considered not well off (or poor). Of the poor families, most are 'poor with some land', which generally means they have some means to grow food such as rice; and a very small percentage are 'poor with no land'. Kaysone Pomvihane District, Savannakhet Province and Saravan District, Saravan Province recorded higher percentages of poor families than the other districts. However, there is a significantly very low level of very poor households without land, reflecting both a relatively high level of available land in this and neighbouring districts and relative equality of wealth distribution. Respondents in Champhone District, Savannakhet did not consider any of the families in these villages as poor.

Table 3-4 Perceptions of wealth and Income of PAP Households (millions Kip)

District	Very well off *		Sufficiently well off		Poor with SOME land		Poor with NO land		Avg income p.a
	%	Avg income p.a	%	Avg income p.a	%	Avg income p.a	%	Avg income p.a	
Kaysone Phomvihane	13	15.0	67	9.4	19	4.1	2	5.0	20.8
Xaiphouthong	20	15.0	68	12.8	11	5.1	2	2.0	26.7
Champhone	18	20.0	82	10.0	0	0.0	0.0	0.0	20.0
Songkhone	12	30.3	75	13.4	11	4.3	2	1.2	39.1
Lakhonpheng	10	31.7	78	13.8	10	3.3	2	2.1	43.9
Vapi	27	24.8	66	10.9	6	2.9	1	0.7	39.2
Saravan	18	26.2	53	12.2	24	4.8	5	3.8	40.4
Average	17	23.3	70	11.8	11	3.5	2	2.1	32.9

Source: ESL surveying 2009

3.4.3 Vulnerable households in surveyed village

Village surveying in the 81 Project villages indicates that around 12.5% of households in the Project Area are considered vulnerable. The categories of vulnerability and the percentage of households within each category in each district are provided in Table 3-5. The two most common vulnerabilities are single female-headed households and landless households.

Table 3-5 Vulnerable households among PAP households.

Province	District	Single female-head	No labour	Infirm / elderly	Landless	Other	Total
Savannakhet	Kaysone	14.3%	0.8%	1.1%	9.6%	0.4%	26.2%
	Xaiphouthong	4.0%	1.3%	2.5%	1.5%	1.5%	10.7%
	Champhone	1.7%	0.2%	0.5%	0.2%	0.0%	2.5%
	Songkhone	10.8%	2.7%	0.8%	4.1%	0.4%	18.9%
Saravan	Lakhonpheng	5.7%	2.1%	0.7%	2.6%	0.0%	11.1%
	Vapi	3.6%	0.8%	0.6%	0.9%	0.0%	6.0%
	Saravan	4.4%	2.0%	0.1%	5.5%	0.0%	11.9%
Average		6.4%	1.4%	0.9%	3.5%	0.3%	12.5%

Source: ESL surveying 2009

3.4.4 Income and expenditure

The majority of families in the Project area source income from the sale of agricultural products. The estimated average yearly income for families in the Project area is 32.8 million kip ranging from 20.8 million kip in Kaysone Phomvihane District, Savannakhet to 43.9 million kip in Lakhongpheng District, Saravan (see Table 3-4). Village surveying indicates that this income is mainly spent on food. Other expenses include medical health care, education and other household items. For many villages, another significant expenditure is land tax.

3.4.5 Rice Sufficiency

Results of surveying in 19 of the Project villages indicate that 77% of households in the Project area have sufficient rice to feed their household year round, and a further 15% of households have sufficient rice for at least 9 months of the year. Approximately 9% of the households in Project villages do not have sufficient rice for greater than 4 months per year – 4% do not have sufficient rice for 4 – 6 months and 5% do not have sufficient rice for more than 6 months. Of those households with rice shortages, 50% are able to buy rice during times of shortage, 30% borrow and 15% trade or provide labour in exchange for rice.

Though the statistics indicate that households in urban areas of Kaysone Phomvihane District have the highest levels of rice deficiency, this is not seen as an issue as all households reported being able to buy the rice they need.

Table 3-6 Rice Sufficiency of PAP households.

District	Rice Sufficiency in a given year			
	12 Months	≥ 9 Months	≥ 6 months	< 6 months
Kaysone Phomvihane	60%	11%	7%	21%
Champhone	83%	17%	0%	0%
Xaiphoutong	69%	26%	6%	0%
Songkone	77%	12%	5%	6%
Lakongpheng	83%	15%	2%	0%
Vapo	95%	5%	0%	0%
Saravan	68%	21%	5%	5%
Total	77%	15%	4%	5%

Source: ESL surveying 2009

3.5 Agricultural Production and Livelihood Systems

The majority of Lao PDR's population, especially those living in rural areas, obtain their livelihoods from a diversity range of agricultural activities including rice production, cultivation of vegetables and fruit gardens, plantations, livestock production and harvesting of NTFPs and fishing. Livelihood diversification has been

aided by the general development of commerce and trade, and by cross-border wage migration and remittances.

In the Project area affected households consume the majority of their crops, to vary diets and, during rice shortages, to meet basic needs; or, they use them as animal feed. Surplus rice, vegetables and cash crops are sold in local markets. Because they tend to live nearer to markets and urban centers, 40% of lowland households sell some of their agricultural products (NSC, 2000).

3.5.1 Rice production

In Lao PDR the two dominant agricultural farming systems are paddy rice production and swidden cultivation. Agricultural and land use patterns in the Project area are dominated by traditional Lao Loum lowland sedentary agriculture practices of paddy production on gently sloping and terraced land developed over several decades. Swidden cultivation is not commonly practiced in the Project area and limited to only 4 villages, 3 of which were located in Saravan province and 1 in Savannakhet.

A majority of villages in the Project area rely on seasonal rain in the months of May to October as a source of water for their crops. Dry season irrigated agriculture development Project area is still limited as irrigation systems are lacking and electricity is required for pumping water from the River and most streams lack of water in the dry season.

Average yield of rainfed rice cultivation per district and in the Project affected villages is presented in Table 3-7. Average yield of rainfed rice in the Project area is lower than average provincial levels. Production per household varies from 3.3 tonnes per ha per year in Vapi District to as low as 2 tonnes per ha per year in Kaysone Phomvihane, Songkone and Saravan Districts.

Table 3-7 Average productivity of rainfed rice by district and villages in the Project area

District	Permanent Paddy Rice		Swidden Rice	
	Average Tonnes per Ha	Average Kip per Tonne	Average Tonnes per Ha	Average Kip per Tonne
Kaysone Phomvihane	1.96	1,584,000	n/a	n/a
Champhone	2.70	1,500,000	n/a	n/a
Xaiphoutong	1.90	1,732,000	0.50	n/r
Songkone	2.66	1,516,667	n/a	n/a
Lakongpheng	1.48	1,577,143	n/a	n/a
Vapo	3.03	7,287,000	n/a	n/a
Saravan	1.62	1,800,000	n/a	n/a
Total	66.64	91,474,000	0.50	n/r

*Source: agriculture production statistics

**Source: Phase 1 village level surveying (ESL June 2009)

3.5.2 Vegetable and Fruit gardens

Most lowland households in Lao PDR maintain permanent vegetable gardens near streams and springs where they grow a wide variety of vegetables and fruits for sales as well as household consumption. Swidden farmers also grow a wide diversity of crops during the rainy season, either intercropped with rice during the rainy season or in separate plots during both rainy and dry seasons. The majority of villages in the Project area produce fruits and vegetables. Some of the common vegetable grown are cucumber, leafy steam vegetables (lettuce, salad), chilly and banana etc. These vegetables are generally grown for household consumption rather than for trade. Other cash crops observed within the Project area include, coffee, bananas, orange, mango, jackfruit, tamarind, pineapple, sugar cane, peanuts, groundnuts, cardamom and vegetables.

3.5.3 Plantations

Over 60% of surveyed villages in the Project area have allocated land for tree plantations. Eucalypt plantations are the most common (present in 8 of the 19 villages) however these are relatively small ranging from 1 to 30 ha in size. Teak plantations are grown in 4 villages and range between 1 and 5 ha. Two villages have rubber plantations, both over 100 ha. These plantations are either collectively owned by the village or by private households. There is one Kapok plantation located near Nongduern Village, Kayson District which falls within the transmission line ROW. This plantation is owned by an individual resident, Mr. Bounlieng. The full plantation is 26 ha, and it was planted in 1999.

3.5.4 NTFPs harvesting and Fishing:

Generally, NTFPs play a central role in the economy of rural communities in Lao PDR particularly people who live in very remote areas. NTFPs provide a variety of products for local villages including: 1) animal protein, 2) calories, vitamins and dietary fiber, 3) materials for house construction and handicraft production, 4) traditional medicines and 5) cash income. It has been estimated that wild foods contribute 60-80% of non-rice food consumption, and provide an average of 4% of energy intake, 40% of calcium, 25% of iron, and 40% of vitamins A and C (Vongkhamsao, 2006). The importance of NTFP foods increases in times of emergency, when crops fail and villagers use tubers and other NTFPs as a substitute for rice especially in the remote areas.

In the Project area, village surveying found that 5 of the 19 villages did not have any forest resources. Of the remaining 14 villages 23 separate forest resources were identified including production forests, protection forests, spirit forest and degraded forests (see Table 3-8). Average land areas give an indication of the size of these forest by forest type, although individual forested areas were found to range significant between 1 ha and 400 ha.

Within surveyed villages, NTFPs collection was reported as being only for daily food and household utilization, not for sale.

Table 3-8 Total Forest resources of 19 villages in the Project Area.

Forest type	Percentage of villages with forest type	Average land (ha)
Village production forest	21%	16.3
Village protection forest	32%	86.7
Village spirit forest	47%	5.3
Village degraded forest	21%	66.3

Source: ESL surveying 2009

3.5.5 Livestock production

Nearly 90% of rural households in Lao PDR raise one or more kinds of livestock, the sale of which constitutes a major source of cash income especially for those who own limited agricultural land. Nearly all households are involved in this activity, for consumption as well as for sale. On average, each household raises one or more kinds of livestock that include buffaloes, cattle, goat and pigs. In general, buffalo are used as draught animals in rice paddies, but their place is being taken increasingly by mechanical buffaloes, two wheel tractors, which are also widely used with trailers for farm and general transportation of people, equipment and produce.

In the Project area, livestock are raised as a source of income for the villagers and during surveying this was ranked 3rd behind the sale of rice and labouring. On average, there are about 13 chickens/ducks, 1-2 pigs and 1-2 cattle per household.

3.6 Social conditions and services within the Project Area

In Savannakhet there are 15 hospitals and 105 village group health care centres and 854 medicine boxes covering about 97.93% of villages in the province.

In Saravan there are 8 hospitals and 43 village group health care centres and 456 medicine boxes covering about 67% of villages in the province.

There are a number of NGOs working specifically on health related issues in the project area including:

- Belgian Technical Co-operation (BTC): Strengthening National Water Supply and Sanitation Strategy
- Village Focus International (VFI): Health, Education and Leadership (HEAL)

All project villages recorded regular visits from the government vaccination programme.

Sick villagers within the project area generally first seek treatment from the closest district health care centre and travel to the provincial hospital only if the issue is severe. Villagers tend to travel to district health centres, instead of getting treated at

home or with the assistance of a village health volunteer, because district health centres are easily accessed via roads.

The main causes of death in the Project Area were reported to be liver disease (infection or cancer), followed by general cancers (unidentified), diabetes, malaria, lung infection and old age. Reported health issues in the past twelve month include malaria, dengue, diarrhea, infant mortality and HIV / AIDS. These were reported mainly in the villages in Saravan Province, but this is thought to be reflection of sampling error. Other evidence suggests that these are prevalent diseases throughout the project area. The likely risk of STDs and HIV/AIDS in the context of TL construction is discussed in Section 5.6.

3.6.1 Water Supply

Available water sources in the Project Area include tap water; deep and shallow wells; river or stream; and rain water. While the majority of the villages located in Savannakhet Province rely on wells for their water supply, in Saravan sources of water include a mixture of gravity fed water, well and river / stream (see Table 4 10).

Table 3-9 Sources of household water in affected villages

Province	Gravity-fed	Well (deep and shallow)	River/ stream	Rain
Savannakhet	0%	95%	0%	5%
Saravan	21%	62%	16%	0%

Source: ESL surveying 2009

3.6.2 Sanitation

Sanitation infrastructure in the project area is still relatively poor. High numbers of households in Savannakhet (54%) and Saravan (78%) were reported to still use the forest and or agricultural fields as their latrine – despite the majority of villages having permanent house structures. The use of bucket toilets is significantly higher in those villages located in Savannakhet (46%) than in Saravan Province (22%).

3.6.3 Education

According to the 2005 census, 73% of the Lao population aged 15 years and above were literate, with more men literate (83%) than women (63%). Literacy rates varied significantly across the country with Savannakhet and Saravan reporting literacy rates of 69% and 62%, respectively (NSC, 2006). Literacy levels in project area districts range from 88% in Kaysone Phomvihane District to 67% in Saravan district.

There are a number of NGOs working specifically on education and literacy in the project area including:

- Global Association for People and the Environment/Village Focus International (GAPE/VFI): VESL (Village Education in Southern Laos)
- Action with Lao Children (ALC): Reading Promotion Project

- Room to Read Laos (RtR): Enhancing the Education of Lao Children
- Shanti Volunteer Association (SVA): Improving Education Environment for Children

In terms of education infrastructure, all but one village surveyed had its own primary school, and for secondary school education, the majority of children travel to larger villages or the district centre. Tertiary and vocational education facilities are located in the provincial capitals of Savannakhet, Saravan and Pakse; and in Vientiane Capital.

High levels of school attendance among youth in the project area were recorded (see Table 3-10 with male and female primary school enrolment 89% and 74% respectively). The most common factors that restrict children from going to school include the need to assist the family with livelihood / income generating activities and household work and insufficient numbers of schools, teacher and teaching material.

Table 3-10 School Enrolment in affected villages (ages 5-16)

Province	District	None	Primary	Lower Secondary	Higher Secondary	Total
Savannakhet	Kaysone	9	21	12	4	46
	Champhone	1	1	1	1	4
	Xaiphouthong	21	35	7	2	65
	Songkhon	39	56	5	6	106
Saravan	Lakhonpheng	20	45	9	3	77
	Vapi	14	19	14	3	50
	Saravan	11	21	7	1	40
	Total	115	198	55	20	388
	Percentage	29.6%	51.0%	14.2%	5.2%	

Source: ESL surveying 2009

Language is not seen as a major barrier to the environmental and social assessment process. The vast majority of people in the project area speak Lao Tai as their first language. The few villages where Mong-Khmer is spoken were found to also have excellent Lao Tai language skills, with the exception of some women of minority ethnic sub-groups. This was reflected in stated preferences for project community assistance, in which literacy and Lao language training were linked to agricultural and mother-child health care training for women.

3.6.4 Gender Considerations

Field surveying included consideration of gender-specific issues, and where possible, collected data was disaggregated by sex. Key gender-specific findings of the Project Area include:

- Approximately 6% of households in the Project Area are single woman-headed households;

- There are pockets of the Project Area, particularly in Saravan province, where enrolment is very low, particularly among women.
- Women in the project area are less likely to have the ability to understand complex language, particularly in written documents.
- HIV / AIDS cases were reported in both Provinces.

3.6.5 Energy consumption, generation and electrification

According to the National Census (NSC 2005) 53% and 42% of households in Savannakhet and Saravan, respectively, have access to grid electricity. The survey found levels of connection in the project villages to be well above these census figures.

All villages surveyed are connected to the electricity grid. Individual household connection varies from 90% connection in villages in Savannakhet Province to 73% connection in villages in Saravan Province. Perhaps due to the high levels of connection, alternative sources of electricity in the project area are not common.

Electricity is mainly used for lighting and household appliances (eg TV and radio). Very few households use electricity for cooking purposes, the majority relying on fuel wood (59%) or charcoal (31%) as their main source of energy.

3.6.6 Road access

Road access in the Project Area is generally good. Villages in Savannakhet Province and Lakhongpheng District, Saravan Province are all close to the National Highway No. 13 – a paved road with all season access. Village roads leading off this main highway are unsealed and therefore may prove to be difficult during the wet season.

Villages in the Vapi and Saravan Districts, Saravan Province are located on or close to National Road 15. This road is unsealed and has a number of ferry river crossings. During the peak of the rainy season access to these villages along this road becomes extremely difficult.

3.7 Unexploded Ordinance

Lao PDR is one of the most heavily bombed countries in the world with over 2 million tonnes of bombs and weaponry deployed over the country as a result of an estimated 500,000 bombing missions launched over Lao PDR during the Indo China War between 1963 and 1974. Almost 30 percent of UXOs (Unexploded Ordnance) failed to explode as designed. Since that time and event after the war ended in 1975, the country remains littered with UXO's includes big bombs, mortar, cluster munitions and sub munitions, and landmines).

In addition to the human suffering and loss of life resulting from UXO contamination, the widespread presence of UXO across Lao PDR blocks development in large areas of the country by denying access to much needed land, deterring the planting of crops and grazing of livestock, and hindering collecting fuel and water. The presence

of UXO also discourages movement between villages and slows transport and communication works, and generally undermines social and development activities.

Parts of the Project Area may still be contaminated; however generally, UXOs were not recorded as a significant issue during village surveying. More than half of the surveyed villages reported that no land within the village boundaries was affected by UXO. Those villages that did report UXOs were mainly in Saravan and Vapi districts. These villages also reported that land mine clearance teams had completed work in their villages and that over the last five years, few UXO incidents had occurred.

4 RESETTLEMENT IMPACTS

The total area of the ROW for the length of the proposed transmission line is 5.5 km². The ROW travels through the land of 904 households within 81 villages. The key socio-economic impacts of the transmission line will be the loss to about 550 households of small areas productive land (forests and agricultural land) within the footprint of the sub-station and the towers and the clearance of valuable timber and fruit trees within the ROW.

4.1 Dislocation and land acquisition (TOR alignment)

As proposed in the Project TOR, of the 81 villages with land within the ROW, 8 will have settlement land (i.e. land with residential and / or commercial structures) affected, 27 will have village forest land impacted and 80 may have agriculture land affected. The affected Districts and villages are shown in the Table 4-1 below.

Land acquisition - Permanent structures including the transmission line towers and sub-station at Taothan in Lakhongpheng District will require the acquisition of land. At this stage it is estimated that 544 towers each with a footprint of 52.99 m² will require approximately 2.88 ha across the ROW. Land required for the sub-station totals approximately 1 ha.

Land impacted by acquisition for the project towers includes agricultural land (consisting of rice paddy land and land for other agricultural crops (approximately 1.59 ha permanently loss); plantations (approximately 0.01 ha), non-rice paddy land (consisting of gardens, Dry Dipterocarp and Unstock forest approximately 1 ha permanently loss); mixed deciduous forest (approximately 0.29 ha); and residential (approximately 0.02 ha). The Project will also acquire 1 ha of degraded, cleared land for the Taothan sub-station.

Loss of forested areas – Forest resources within the ROW, either privately or communally owned such as village use and spirit forest will be removed. Land within the ROW that is not used for construction of the transmission towers may be converted to other uses, such as planting of crops. Surveying has identified 27 villages which will experience some loss – impact on - of village forest assets as a result of the proposed transmission line. Surveying indicated that a majority of the forests within the ROW are privately owned. Table 4-2 provides information on forest and plantation land impacted by the project. Compensation for permanent land losses along the ROW are detailed in Section 5.4.

Table 4-1 Impact on Land and Houses by District and Province

Province / District	No. of Villages	Line distance on village land (km)	Estimated Land Lost to Towers (ha)						Estimated Land Lost to Substation (ha)^	No. of Villages with HH in ROW^*	No. of Villages with other Structures in ROW
			Total*	Forest#		Agricultural		Residential			
				Mixed Deciduous	Unstocked	Rice Paddy	Plantation				
Savannakhet	35	108.15	1.44	0.19	0.45	0.75	0.01	0.01	0	4	2
<i>Kaysone</i>	8	25.38	0.34	0.12	0.05	0.14	0.01	0	0	1	1
<i>Champhone</i>	2	4.65	0.06	0	0.05	0.01	0	0	0	0	0
<i>Xaiphouthong</i>	6	23.79	0.32	0.05	0.12	0.14	0	0	0	0	0
<i>Songkhone</i>	19	54.33	0.72	0.02	0.23	0.46	0	0.01	0	3	1
Saravan	46	109.56	1.45	0.09	0.54	0.84	0	0	0.01	2	0
<i>Lakhonpheng</i>	21	52.8	0.7	0.06	0.33	0.3	0	0	0.01	2	0
<i>Vapi</i>	13	31.95	0.42	0.03	0.09	0.33	0	0	0	0	0
<i>Salavan</i>	12	24.81	0.33	0	0.12	0.21	0	0	0	0	0
TOTAL	81	217.71	2.89	0.28	0.99	1.59	0.01	0.01	0.01	6	2

* assumes average footprint of 52.99 m² and tower spacing of 400 m

land use breakdown calculated by village using GoL FIDP data

^ Taothan sub-station is on government land and will not require compensation

^* After receiving this information EDL completed realignment of the transmission line to avoid these residential areas

Table 4-2 Impact on forest and plantation within the ROW by district and province

Province / District	No. of Villages	Line distance on village land (km)	Total Impact area of ROW (m ²)	Estimated Land within ROW		
				Forest		Agricultural Plantation
				Mixed Deciduous	Unstocked	
Savannakhet	35	108.15	270.39	36.96	86.82	2.27
<i>Kaysone</i>	8	25.38	63.46	22.76	10.25	2.27
<i>Champhone</i>	2	4.65	11.64	0	10.01	0
<i>Xaiphouthong</i>	6	23.79	59.47	10.1	23.41	0
<i>Songkhone</i>	19	54.33	135.82	4.1	43.15	0
Saravan	46	109.56	273.93	12.45	101.88	0
<i>Lakhonpheng</i>	21	52.8	132.01	11.55	62.95	0
<i>Vapi</i>	13	31.95	79.88	0.9	16.97	0
<i>Salavan</i>	12	24.81	62.04	0	21.96	0
TOTAL	81	217.71	544.32	49.41	188.7	2.27

(source: FIPD 2002)

4.2 Land use restrictions and loss of commercial trees

Land use restrictions will be placed on all land within the ROW. Trees and vegetation in the ROW will be removed or restricted to a height of 3 m and no structures will be permitted within the easement.

Specific potential impacts include:

- Loss of commercial tree species – As mentioned in the previous section, tall trees within 12.5 m on both sides of the centre line will be cut to ground level or maintained below a height of 3m to maintain the required clearance of 2.98m. This may lead to the loss of economic trees, including valuable commercial tree species such as eucalypt, teak plantations and rubber plantations.

Within the ROW it is estimated that a total of 15,700 economic trees will be removed (including approximately 200 fruit trees, 500 high value timber trees, 10,000 mid-value timber trees and 5,000 low value timber trees). These estimates are based on the preliminary data collected combined with experience from similar projects in the region.

- Loss of land capability - tree species: While rice and other crops will generally be able to grow in the ROW area, the 3 metre restriction will reduce the agricultural capability of land by denying the growing of most trees.
- Loss of land capability - urban or industrial land: The easement will reduce land use capability by restricting the construction of structures. No structures are permitted within the ROW.

4.3 Crop and land disturbance

Disruption of farming activities and disturbance to crops, paddy bunds, canals, drains and other farming infrastructure will mainly occur during the construction period. The main cause of disturbance during construction will be the construction of the Taothan sub-station, establishment of temporary access roads to each tower site; construction of each tower; and conductor stringing.

A key issue of tower construction will be the spoil created from excavation of tower footings. Spoil disposal areas have not been identified. The IEE proposes that these areas be located away from agricultural and ecologically sensitive areas.

Regular line and tower maintenance works during the operation period are likely to cause similar disturbances, however these works will be site specific and occur only during the dry season months when agriculture activity along the ROW is at its minimal.

5 RESETTLEMENT PRINCIPLES AND INSTITUTIONAL STRUCTURE

5.1 Definitions

The following technical terms have been used in the document:

“Compensation” means payment in cash or in kind for an asset to be acquired or affected by a Project at replacement cost.

“Cut-off Date” is the date prior to which the occupation or use of the Project area makes residents/users of the Project area eligible to be categorized as affected persons. The cut-off date coincides with the date of the census of affected persons within the Project area boundaries, which will be conducted at the time of a Detailed Measurement Survey to determine detailed impact. Persons not covered in the census, because they were not normally resident, having assets, or deriving an income from the Project area, are not eligible for compensation and other entitlements.

“Entitlement” means a range of measures comprising compensation, income restoration support, transfer assistance, income substitution, and relocation support which are due to affected people, depending on the nature of their losses, to restore their economic and social base.

“Project Authorities” refer to both Electricite du Laos (EdL) and Ministry Energy and Mines (MEM), with EdL in charge of grid extension.

“Project Affected People (PAP)” includes any person or persons, households, a firm, or private or public institution who, in the context of acquisition of assets and change in land usage, as of the cut-off date, on account of the execution of the Project, or any of its subcomponents or part, would have their: Standard of living adversely affected; Right, title, or interest in any house, land (including residential, commercial, agricultural and grazing land) or any other moveable or fixed assets acquired or possessed, in full or in part, permanently or temporarily adversely affected; or business, occupation, places of work or residence or habitat adversely affected, with or without displacement. PAPs include persons or affected household and consist of all members of a household residing under one roof and operating as a single economic unit, who are adversely affected by a Project or any of its components. For resettlement purposes, PAPs will be considered as members of affected households.

“Rehabilitation” means assistance provided to PAPs seriously affected due to the loss of productive assets, incomes, employment or sources of living, to supplement payment of compensation for acquired assets, in order to improve, or at least achieve full restoration of living standards and quality of life to pre-Project level.

“**Relocation**” means the physical shifting of a PAP from his/her pre-Project place of residence, place of work or business premises.

“**Replacement Cost**” is the amount needed to replace an asset and is the value determined as compensation for:

- Agricultural land the pre-Project or pre-displacement, whichever is higher, market value of land of equal productive potential or use located in the vicinity of the affected land, plus the cost of preparing the land to levels similar to those of the affected land, plus the cost of any registration and transfer taxes;
- Land in urban areas, it is the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes;
- Houses and other related structures based on current market prices of materials, transportation of material to construction site, cost of labour and contractor’s fee, and cost of any registration and transfer taxes. In determining replacement cost, depreciation of the assets and value of salvaged building materials are not taken into account and no deductions are made for the value of benefits to be derived from the Project;
- Crops, trees and other perennials based on current market value; and Other assets (i.e. income, cultural, aesthetic) based on replacement cost or cost of mitigating measures.

“**Resettlement**” means all measures taken to mitigate any and all adverse impacts of a Project on PAPs property and/or livelihoods, including compensation, relocation (where relevant) and rehabilitation as needed.

“**Vulnerable Group**” are distinct groups of people who might suffer disproportionately or face the risk of being marginalized from the effects of resettlement and specifically include:

- Female headed households with dependents,
- Disabled household heads,
- Households falling under the generally accepted indicator for poverty,
- Elderly households with no means of support and landlessness, and
- Indigenous minorities.

These terms and definitions are further clarified in section 5.2 below on the principles of resettlement and related policy and regulatory systems.

5.2 Principles of Resettlement

The principles of the Resettlement Action Plan (RAP) will include the following:

- a. Involuntary resettlement will be avoided or minimized through design efforts.

- b. Where involuntary resettlement is unavoidable, resettlement activities should be conceived and executed as sustainable development programs which provide sufficient compensation, assistance and rehabilitation to the Project Affected People (PAPs) so that they would be at least as well off as they would have been in the absence of the Project. Project stakeholders (including PAPs) are consulted and given the opportunity to participate, as practicable, in the design, implementation, and operation of the Project.
- c. PAPs should be assisted in their efforts to improve their livelihoods and standard of living or at least to restore them, in real terms, to pre-displacement levels.
- d. The Project's compensation and entitlement policy should apply to all displaced persons regardless of the total number affected or the severity of impact. Particular attention should be paid to the needs of vulnerable groups among those displaced: especially those below the poverty line, the elderly, women and children, and ethnic minorities.

5.3 POLICY FRAMEWORK AND ENTITLEMENTS

5.3.1 Objectives of the Resettlement Action Plan (RAP)

The main objective of this RAP is to provide an effective guideline for the GoL and the Project Environmental Management Committee (PEMC) to use for acquisition of land and entitlements to implement the Project and ensure that the people and households affected by land acquisition are compensated under the prevailing legal norms of GoL and in compliance with the policies of the GoL as well as WREA.

The RAP has been prepared taking into account the general findings of the socio-economic survey data, field visits, census data and meetings with stakeholders in the project area. The RAP identifies (i) the impacts and extent of losses; (ii) principles and legal framework applicable for mitigation of losses; (iii) provisions restoration of income / livelihood; and (iv) responsibilities for delivery and monitoring of the RAP process.

The resettlement policy framework will include the following elements:

- a. Involuntary resettlement should be avoided or minimized through design efforts.
- b. Where involuntary resettlement is unavoidable, resettlement activities should be conceived and executed as sustainable development programs, providing sufficient compensation, assistance and rehabilitation to the Affected Persons (APs) so that they would be at least as well off as they would have been in the absence of the project.
- c. APs will benefit from the project.
- d. Project stakeholders (including APs) are consulted and given the opportunity to participate, as practicable, in the design, implementation, and operation of the project, and

- e. APs should be assisted in their efforts to improve their livelihoods and standard of living or at least to restore them, in real terms, to pre-displacement levels.

The proposed resettlement policy should apply to all components under the project funded by JICA/EDL and directly related projects funded by other sources. The compensation and entitlement policy should apply to all displaced persons regardless of the total number affected or the severity of impact. Particular attention is paid to the needs of vulnerable groups among those displaced: especially those below the poverty line, the elderly, women and children, and ethnic minorities.

5.3.2 Legal Framework for Land Acquisition and Resettlement

The Resettlement Action Plan's policy and legal framework, and entitlement matrix are based on the Decree 192/PM on Compensation and Resettlement of People Affected by Development Projects, (Government of the Lao PDR, 2005), plus the associated Lao policies, practices and technical guidelines in the Regulation on Resettlement and Compensation (2005). Also relevant are the Lao PDR Land Law (2003), the Forestry Law (2007), the Electricity Law (2008). Provisions and principles adopted in this Resettlement Plan for the project supersede the provisions of relevant decrees currently in force in Lao PDR wherever a gap exists.

Environmental Protection Law No.02/99/NA, (1999) does the following:

- Assigns the Science, Technology and Environmental Agency¹ (STEA) the right and primary responsibilities for protection, mitigation and restoration of the environment in Lao PDR.
- Defines the environmental conservation responsibilities of other GOL agencies such as the Department of Electricity, Department of Forestry, etc.
- States that environmental conservation comes before mitigation and restoration
- Stipulates that those who generate an environmental impact are responsible for the resulting damage caused.
- Directs that environmental management and monitoring units (EMMUs) be established at all levels of government, with responsibilities to include such things as: establishing and enforcing sector environmental plans; taking action to mitigate environmental damage; issuing orders to adjust, suspend, remove or close down activities that cause negative impacts

The Electricity Law (2008)

Requires that “the licensee (JICA/EDL) is responsible for ensuring that environment is protected, and that residents are compensated in cash or in kind for lost property, diminished living conditions, relocation and resettlement.”

The Land Law (1997)

Created by Decree No. 63/PM, which was superseded by Decree No. 68/PM in 1999, the land law stipulates that in case of the public infrastructure development projects cause damage to the trees, crops or buildings of the private owner, the land and

structure owners have the right to be compensated for the loss of or damage to such assets.

Forestry Law (2007)

The forestry law stipulates that forest land can be converted to other uses when necessary and if in the public interest, and subject to approval from responsible authorities. An individual or organization given permission to convert forest to another use is responsible for payment of a conversion fee, land reclamation, tree planting, and other requirement.

Environmental Management Standard

In addition to the above laws, Department of Electricity, Ministry of Energy and Mines also issued Environmental Management Standard Documents, which provide more details guidance on how to prepare power sector projects, which requires the project owner to prepare IEE to be approved by Ministry of Energy and Mines (MEM) and Science, Technology and Environment Agency (STEA).

Prime minister Decree No 192 on Resettlement and Compensation (2005) and revision to the Decree, 2009.

The decree which was adopted in 2005, and the draft revision formulated in 2009 and awaiting enactment, becomes an important instrument in guiding resettlement and land acquisition activities in Lao PDR at the present time and in the future. The key compensation and resettlement principles of this decree are listed below, which are in general agreement with the requirements of ADB and the World Bank, and these have been further elaboration in WREA Guidelines on Involuntary Resettlement:

- Project Affected Persons will be provided compensation for their lost assets affected in full or in part, at full replacement cost.
- In case of compensation for the affected to type of land (agriculture, residential or commercial) will be through provision of “land to land” arrangement of equivalent size or productivity and at the location acceptable to the Affected Persons. If the land not available, cash compensation at full replacement cost is applied.
- If the house or structure is partially being affected by the project but the remaining structure is rendered unviable or area less than the minimum house size. Affected Persons will be entitled to compensation.
- In case of the Affected Persons affected by partial loss of structure and remaining still viable. The assistance in a form of cash or material to restore the structure is applied.
- In case of the temporary affected by the projects, there will be full compensated of the net loss of income. If the temporary use (affected) of the assets less than 6 months there will be compensated of 10% of the replacement cost of the affected assets. But if more than 6 months compensation should be negotiated with the owner of the assets.

- In case of the Persons have leased the house, structure or the form, compensation equivalent of 3 months rental allowance is applied.
- The affected persons without any legal title or ownership right to affected land or assets they occupy should be compensated and provided assistance to ensure they are not worse-off due to project.
- All previous claims and unresolved issues related to tenure status and ownership of land and other assets on each sub-project or components will be resolved before land acquisition.
- Resettlement process should be carry out in a participatory manner following the General guidelines for Public Involvement.

5.4 Compensation Standards and Estimation of Compensation Costs

Based on the above laws, regulations, and compensation principles, and based on successful implementation experience of previous projects, a set of compensation standards and valuation methods have been developed for the proposed Project as follows.

The methods used to estimate indicative compensation costs for this project were broadly applied in other similar previous power projects and have been satisfactory for both sides (project owner and affected villagers). However, for this project, the methods and rates will need to be refined closer to actual period of compensation and especially when it is clearly understood what type of compensation package, the affected Persons (PAPs) want and what is actually available.

Land losses in the TL ROW, which are mainly of the small areas of land in 544 tower footprints, each of about 53 m², and about 3 ha of land at the new sub-station at Taothan, will be compensated in cash. This is because the Provincial Government cannot identify or procure replacement land within farming reach of the concerned families, while the concerned families can adjust their land use, purchasing or clearing with community approval, in a more or less traditional pattern. Agricultural extension and land officers should be assisted to undertake support and monitoring to ensure that viable farming systems are maintained as a result of this measure. This assumption will also be tested and examined in detail during the IOL and RP preparation.

5.4.1 Permanent Land Acquisition

For permanent land acquisition, different compensation will be paid based on different types of land areas. It is proposed that for productive farmland, mainly paddy land, the basic compensation will be based on a calculation of 10 times of annual output value for lost farmland, but that the rate paid will reflect market value at different locations along the TL ROW.

Given the different yield of paddy and market price in different towns and provinces, the actual compensation rate will vary from province to province. For example, in

some paddy fields near the town, with good irrigation, crops could be harvested twice a year. As a result, the annual yield and output value of such paddy land will be much more than those areas with only one time harvest each year. The price of land close to Savannakhet, for example, reflects its semi-urban location.

For acquired scrub land and garden land, the proposed compensation rate is one third of compensation rate for paddy land.

Based on the previous project experience, such compensation is likely to be well received among affected people. With limited land loss and adequate compensation, no significant negative impacts are expected.

5.4.2 Temporary Land Occupation

In addition to the income losses from permanent land acquisition, there will be income losses from temporary land occupation or disturbances during project construction. For such losses, compensation of lost crops at replacement value and cost of restoring land into original conditions is proposed.

Depending on length of such occupation, most of impacts will be limited to one crop loss, but for some cases, such occupation might take up more than one year with multiple crop losses. The compensation will be based on average yield and market price of lost crops. Efforts will be made by the project owner to minimize the impacts of temporary land occupation by timing the construction after planting season. Under JICA's construction contract requirement for temporary land occupation such as "access road" is to use existing or developing existing track, rather than construction of new one.

5.4.3 Structures and Assets

In Lao PDR there are no unified compensation standards for lost structures and assets. Based on relevant laws and regulations, the basic compensation principle is to provide compensation at replacement value, which will include (i) cash for lost structures sufficient to replace materials and labour to build replacement structures to an equivalent size and standard; (ii) housing plot to build the replacement structure; and (iii) allowance for the expense of relocation and lost of income during transfer.

For this transmission line project, it is proposed that all impact on houses and village residential areas should be avoided by realigning the TL. In the event that this does not prove feasible in any specific situation, houses and related structures will be quantity surveyed to determine the size and quality of materials and the type of housing, and will be photographed during the IOL as a record of impact or loss. Farm structures in the TL will be nudged back beyond the ROW rather than relocated at any distance. In all compensation for loss of structures, PAPs will be permitted to retain salvaged materials as well as being compensated and otherwise assisted with relocation and reconstruction.

5.4.4 Economic Trees and Cash Crops

In terms of planted fruit trees and industrial trees, or natural trees the following methods have been broadly applied as a base for tree compensation calculation for similar previous projects. For this project tree compensation unit cost was based on similar previous project carried out with Saravan and Champasack provinces and draft recommendation on compensation of the transmission line project by Department of Environment, Ministry of Energy and Mines.

For Planted Industry Trees

Compensation Cost = [Land Clearing Cost + Cost of Seedling] + [(Maintenance Cost) x (Year of Maintenance)]

For Planted Fruit Trees

Compensation Cost = [Land Clearing Cost + Cost of Seedling] + [(Maintenance Cost) x (Year of Maintenance)] + [(Average Harvesting Value/year) x (Years of Harvesting)]

Note: Years of Harvesting for Fruit Trees may range from 1 to 7 years depending on Fruit Tree Species.

The Regulation of Ministry of Agriculture and Forestry No. 0196/MAF.2000, dated 15 August 2000, Article 23 identified the formula for compensation for the loss of plantation tree as follow:

Cost of Tree Plantation Farm = Land Use Cost + Land Development Cost + Cost of Existing Planted Tree + Cost of Agricultural Produces (if any)

In order to ensure that the compensation rates for economic trees are adequate for providing replacement value and restoring income and livelihood for the affected people, during resettlement preparation, each province will develop a detail list of compensation rates for various trees, which will be based on agreed formula and current yield, and market prices of different crops. Such list of compensation rates will be consulted with local government and affected people prior to project implementation, and will be included in the resettlement action plan. Other Compensation and Assistance

For any loss of infrastructure facilities, community services and other community assets, such as roads, bridges, schools, electricity, water, village forest and so on EDL will provide in-kind compensation or by rebuilding these facilities to their original status. Such replacement will be completed prior to the construction of transmission projects, so that the daily life of concerned communities will not be affected.

In case of the transmission line passing the cultural area of the villages like “spirit forest” area and cemetery area, PEMC EDL will consult with villages to arrange a traditional moving ceremony according to village practice. No spirit forests or cemeteries have been identified within the ROW.

Land impacted in the ROW will be measured and photographed household by household as part of the IOL, and a socio-economic questionnaire survey conducted

with the household concerned to determine their level of land-holding, other livelihood sources and income levels, to determine the severity of impacts.

A land market price survey will be conducted by the Provincial Resettlement Committee at the time of the IOL, with assistance from the Consultant and EDL Environmental Management Unit, to determine the market prices of land area by area.

5.5 Community Assistance

5.5.1 Information and Consultation

Meetings have been held in all affected areas, both with APs and with others in the local population, to inform them of the TL construction and its likely impact, and of measures for compensation and other assistance proposals and entitlements. Meetings and other publicity and information campaigns will be repeated in greater detail during the IOL and DMS, to ensure that the population as a whole are aware for the measures to be undertaken to mitigate the impact of the TL and ensure that the affected communities receive its full benefits.

These will include individual village meetings (a) with the people in general, and (b) with women. Among ethnic minorities the local languages will be used.

5.5.2 Community Assistance – General

Where the Project results in the loss of community infrastructure, community services and other community assets including roads, bridges, schools, electricity, water supply, EDL will provide in-kind compensation or rebuild these facilities to their original status. Such replacement infrastructure will be completed prior to the construction of the Project to minimise Project impacts on communities.

In the event that the transmission line passes through areas of cultural significance such as “spirit forest” areas and cemetery area, (although none has been identified on the basis of surveys conducted of the land and communities affected by the initial alignment) EDL will consult with villages to arrange a traditional moving ceremony according to village practice. Any costs related to the relocation will be paid for by EDL.

5.5.3 Community Assistance – Proposed Activities and Funding

A community assistance budget of \$4,000 is proposed to be provided to affected districts throughout the length of the alignment. In general, the District Administration Office will be responsible for coordinating community assistance activities. These activities will be jointly funded by EDL (as part of the transmission line project), the Government of Lao PDR (as part of normal disbursement to Districts) and any external funding available (NGOs, Poverty Reduction Fund).

Each year, Districts prepare a Socio-Economic Development Plan that prioritises means of community assistance based on needs in the District – for example: agriculture, health and education etc.

EDL will consult with the District Administration Office regarding planned assistance in project area. The identified community assistance budget (US\$4,000) will then be allocated to supplement the community assistance projects in the district where TL project is located.

Figure 5-1 below outlines the community assistance process coordinated by the district government.

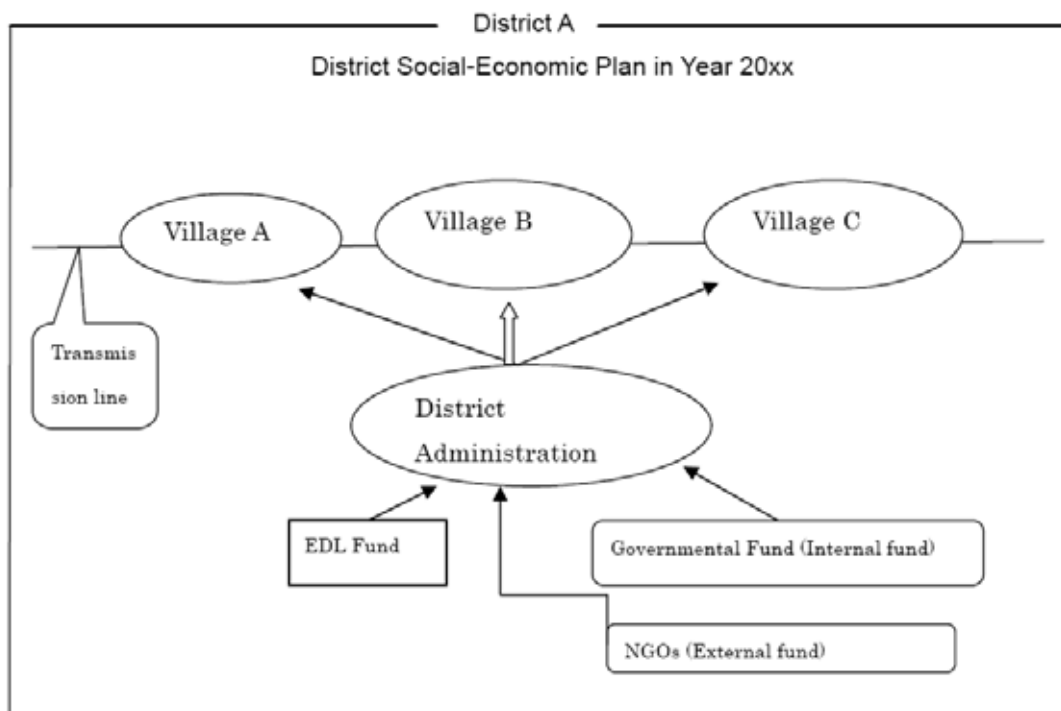


Figure 5-1: The Community Assistance Process

5.7 Finalising Compensation Costs

The formulas provided above were used for the calculation of Permanent loss and Temporary loss of land in other similar previous EDL power projects in Southern Lao PDR, and specifically used in the calculation of compensation rates for rice paddy field and other farmland or garden which have been satisfactory for both sides (Project owner and affected villagers).

For the current Project, the actual methodology for calculating compensation estimates needs to be agreed upon and finalized by EDL in consultation with the concerned local authorities and villagers as well as PAPs. A final compensation agreement will be established well before the construction takes place.

6 INSTITUTIONAL ARRANGEMENTS

The institutional arrangements for the Project have been discussed with EDL, particularly with respect to the alternatives of a single management structure for the two Provinces or a separate but coordinated structure in each Province. The latter arrangement is preferred, because of the strength of existing administrative and legal responsibilities of the two Provincial Governments, and the capability of EDL to coordinate actions through its Department in each Province. The arrangement would also make effective use of the separate technical and administrative departments in each Province, including WREO and Departments of Health and Education, and of the administrative and coordinating capacities of Provincial Governors' Offices.

Institutional arrangements for the implementation of the Project's Resettlement Action Plan (RAP) will be established at three administrative levels.

1. Project Environmental Management Committees (PEMC) in each of the two Provinces, consisting of officials from relevant Government agencies in Saravan and Savannakhet and relevant districts.
2. The Environment Office (EO) of EDL, located at EDL's headquarters in Vientiane. The EO will be responsible for overall planning and implementation of environmental management and resettlement for the Project.
3. The Environmental Management Unit (EMU) and Project Management Office (PMO) established within the EDL branch offices in Saravan and Savannakhet provinces. The EMUs will be responsible for actual Project implementation and coordination with local authorities as well as the affected households.

These organizations will form the institutional framework to ensure smooth implementation of resettlement activities in accordance with this Resettlement Action Plan.

The detailed roles and responsibilities of each organisation are detailed below.

6.1 Project Environmental Management Committee (PEMC)

A Project Environmental Management Committee (PEMC) will be established to decide compensation conditions, and monitor the social and environmental aspects for the Project. The PEMC will consist of at least 10 representatives from the different concerned agencies from Savannakhet and Saravan including Provincial EDL Branches, Provincial WREA, Provincial Energy and Mines Department, Provincial Land Office, Provincial Agriculture and Forestry Department (Provincial Forestry Section), Provincial and District Cabinets and other related officials.

The PEMC will form subcommittees to focus on particular aspects of the Project such as Environmental management, Forest Clearing, Grievance management and Compensation.

PEMC role in RAP implementation will include negotiating with PAPs and local authorities to determining the compensation costs for all affected assets.

6.2 Environmental Office (EO)

The Environmental Office (EO) located within EDL’s Headquarters will be responsible for environmental and social aspects on the Project in coordination with Provincial EDL Branch Offices.

The EO will prepare all required documentation concerning the environmental and social aspects following Lao national regulations, and monitor and supervise resettlement implementation by the PEMC and provincial EMU in order to ensure that the resettlement is complied with this Resettlement Action Plan.

The EO is also responsible for conducting internal resettlement monitoring and preparing resettlement progress reports, which will be submitted to DOE, WREA and the financier and well as EDL management each quarter during the Project implementation period.

6.3 Environmental Management Units (EMUs)

The day to day implementation of the Resettlement Action Plan will be managed by Environmental Monitoring Units (EMUs) established by Savannakhet and Saravan Provincial EDL Branch Offices. The EMU which will be established in the branch office for Project monitoring and coordinating purposes. At least one EdL official will be assigned to the EMU.

The EMUs will be responsible for implementation and monitoring of the RAP as well as coordination with local authorities and the affected persons. The EMUs will also act as the first contact on the ground directly for the EO and indirectly for the PEMC. In addition, the EMU will receive all complaints and grievances which arise in the course of the implementation of the RAP.

Table 6-1 Institutional Set-Up and Responsibilities for Environmental and Social Tasks

Institution/Organisation	Participants	Tasks
Project Environmental Management Committee (PEMC)	<ul style="list-style-type: none"> ▪ EDL Saravan and Savannakhet Provincial Cabinet Office(Saravan and Savannakhet) ▪ District Cabinet Office (Saravan and Savannakhet) ▪ Provincial Industry & Handicraft Dept. ▪ Provincial WREAs, ▪ Provincial Agriculture & 	<ul style="list-style-type: none"> ▪ Project consultation meetings ▪ Monitoring, evaluate review environmental plan and implementation work ▪ Negotiating compensation unit costs, supervision and authorization of compensation payment

Institution/Organisation	Participants	Tasks
	Forestry Dept <ul style="list-style-type: none"> ▪ Provincial Health Dept ▪ Provincial Lands & Asset Dept ▪ Provincial Communication Transport Post & Construction (PCTPC) 	
EDL Environment Office (EO)	EDL Environment Office (EO)	<ul style="list-style-type: none"> ▪ Co-ordination of project, the financier and other stakeholders
EDL Environmental Management Unit (EMU)	Saravan and Savannakhet Provincial EDL Branch (EMU)	<ul style="list-style-type: none"> ▪ Implementation of RAP ▪ Supervision of environmental activities ▪ Co-ordination with local authorities and affected persons, data collection and reporting
Forest Clearing Committee(Sub PEMC)	<ul style="list-style-type: none"> ▪ EDL VTE (EO) and (EMU) ▪ Provincial/District Cabinets ▪ Provincial Energy and Mines Dept. ▪ Provincial WREOs ▪ Provincial/District Forestry Officer 	<ul style="list-style-type: none"> ▪ Determination of timber value ▪ Monitoring of clearing process ▪ Provide guidance and authorization of timber sale and or relocation, appoint contractor in timber handling activities
Compensation Committee(Sub PEMC)	<ul style="list-style-type: none"> ▪ EDL VTE (EO) and (EMU) ▪ Provincial/District Cabinets ▪ Provincial Energy and Mines Dept. ▪ Provincial Land Officer 	<ul style="list-style-type: none"> ▪ Determination, negotiation of value of land ▪ Preparation of compensation guidelines ▪ Monitoring of disbursement of compensation payments ▪ Participation in Compensation Committee ▪ Certification of transfer of land ownership ▪ Payment of compensation (with EDL)
Grievance Committee(Sub PEMC)	<ul style="list-style-type: none"> ▪ EDL VTE (EO) and (EMU) ▪ Provincial/District Cabinets ▪ Provincial Energy and Mines Dept. ▪ Village Authority 	<ul style="list-style-type: none"> ▪ Settlement of complaints about compensation payments, as well others arise from the Project implementation discrepancies and conflicts

7 IMPLEMENTATION PROCESS

Implementation of the provisional RAP will involve the following five (5) steps.

7.1 Detailed Measurement Survey (DMS)

Although the Project will generate only minor impacts according to the results of the site investigation during the IEE study, a DMS must be undertaken prior to starting Project construction. The DMS should be undertaken once the final alignment for the transmission line and the location of the towers and the sub-station are confirmed.

The DMS will be conducted by externally hired contractors under the supervision and guidance of the PEMC. The objective of the DMS will be a) to identify land, structures and other assets to be compensated and to collect detailed data of all PAPs concerning the loss of assets and compensation cost, in collaboration with PAPs and with local authorities, and b) to collect socio-economic data of all affected households with a view to identifying any losses of livelihoods and specific needs for livelihoods restoration, especially of vulnerable households.

A summary of field data of affected households is given in (Annex 2). This data will be reviewed and (if necessary) corrected, and completed for all PAPs in the DMS to provide accurate base line information and individual dossiers of PAPs as the basis of agreements for compensation.

7.2 Preparation of a revised draft RAP

The outcome of the DMS will be a revised draft of the RAP, prepared on the basis of 100% land survey and measurement of any affected structures of PAPs, and on a socio-economic survey of PAP households. It will include a detailed data sheet with three basic sections (i) the scope of impacts (name and quantities of affected assets) (ii) detailed compensation rates and rehabilitation measures for affected assets, and (iii) total amount to be paid to the affected people.

7.3 Consultation with Affected People

The revised draft RAP and detailed data sheets produced during the DMS will be used as the basis for consultation between the PEMC, local governments, affected villages and Project affected people. The EMU will prepare all datasheets and records of consultations with Project-affected people and forward to the EO to consolidate and review with the assistance of the contractor as the basis of a revised draft RAP.

7.4 Review of Resettlement Action Plan

Based on the data and information collected during the DMS and results of consultations with affected people, the revised draft will be submitted for approval to WREA.

7.5 Disclosure of the draft RAP to the Affected People

After finalization of the RAP and datasheet with detailed compensation standards and rehabilitation measures, those documents will be disclosed to the affected people and villages. The public disclosure of RAP will be carried out by holding public meeting, putting up notice in the affected villages, or distributing a resettlement information booklet to the affected people.

The draft RAP will be translated in to Lao language and opened in public for further public consultation as soon as the government and JICA have approved the draft documents.

Activities required for disclosure of the draft RAP include:

- EDL to translate the draft RAP into Lao Language;
- EDL to send the draft RAP to Provincial and District offices;
- Display the draft RAP at EDL, Provincial and District offices for 15 days. If EDL holds workshops instead of displaying the draft RAP, Public disclosure period will be shortened;
- If there are no comments, the draft RAP will be submitted to WREA for approval. If there are some comments, the draft RAP will be reviewed.

7.6 Signing of Compensation Contracts and Payment of Compensation to Project Affected People

The final step in the resettlement implementation process is the signing of compensation contracts and delivery of payments to Project affected people. This step should usually be completed prior to Project implementation.

In the event that house relocation is required or a substantial amount of land will be acquired by the Project, which is not expected, compensation payments should be completed at least three months prior to construction. This will allow affected people reasonable time to construct their new houses and move their belongings.

During implementation, EDL will pay compensation directly to each Project affected household in the presence of local government representatives.

8 RESETTLEMENT AND MONITORING COST ESTIMATES

8.1 Resettlement cost estimates

This chapter of the RAP provides compensation estimates for permanent land losses (Table 8-1), permanent loss of trees (Table 8-2) and estimates of compensation costs required for temporary losses (Table 8-3). Compensation estimates have been derived from compensation formulae and unit costs detailed in Chapter 6.

During the detailed measurement survey initiated prior to commencement of construction work, additional requirements for compensation may be identified. To allow for this eventuality, a contingency allocation has also been made.

Table 8-1 Estimation of Compensation Cost (for the Rice Paddy Land and Non- Paddy Land losses).

Description	Unit	Quantity	Unit Price (Kip)	Total Compensation Cost (Kip)
Rice paddy land	m2	15,900	400	6,360,000
Non rice paddy land	m2	3,000	150	450,000
Cemeteries	l.s.	2	5,000,000	10,000,000
Total				16,810,000

Table 8-2 Estimation of Compensation Cost (for losses of trees).

Asset	Unit	Unit price (kip)	Quantity	Compensation cost (Kip)
Mango	tree	100000	50	5,000,000
Tamarind	tree	75,000	50	3,750,000
Coconut and othe	tree	25,000	100	2,500,000
High value timber	tree	100,000	500	50,000,000
Mid value timber	tree	25,000	10,000	250,000,000
Low value timber	tree	6,000	5,000	30,000,000
Total			15,700	341,250,000

Table 8-3 Estimation of Compensation Cost (for Temporary loss).

Description	Unit	Quantity	Unit Price (Kip)	Total Comp. Cost (Kip)
1. Rental Land				20,640,000

Description	Unit	Quantity	Unit Price (Kip)	Total Comp. Cost (Kip)
Paddy	m2	233,000	80	18,640,000
Garden	m2	10,000	60	600,000
Swidden	m2	10,000	50	500,000
Non productive land	m2	30,000	30	900,000
2. Crop Damage				30000000
Dry season crop	-	lump sum	-	30000000
3. Rehabilitation				45000000
Rehabilitation / restoration	-	lump sum	-	45000000
TOTAL				95,640,000

8.2 Monitoring and evaluation costs estimates

In addition to funding for compensation of PAPs, an estimate has also been provided of the costs for EDL's implementation of the detailed measurement survey and implementation of the RAP monitoring (Table 8-4); and the evaluation of RAP implementation and: the costs associated with fieldwork of the PEMC (Table 8-5 and Table 8-6). The final table (Table 8-7), provides a summary of Total Budget Estimate for RAP implementation.

Table 8-4 Budget for Implementation of the DMS and RAP

Item	Unit	Quantity	Day	Unit Cost (USD)	Total Cost (USD)
DMS					
DMS Staff	Pers.	20	40	50	40,000
DMS Expenses	Lump sum				20,000
RAP					
RAP Imp. Staff	Pers.	3	162	50	24,300
Expenses	Lump sum				10,000
Total					94,300

Notes:

- Adequate budget for the DMS has been allocated in the PEMC budget below, based on a 40 day field survey with 20 staff (including technical oversight)
- RAP implementation will require 3 staff and 2 days for each village

Table 8-5 Budget for Monitoring and Evaluation of RAP implementation.

Monitoring	Ps/Unit	Day	Unit Price (USD)	Total (USD)
Monthly				8,700
EDL Environment Office	1	60 (20 months x 3 days*)	30	1,800
Driver	1	60 (20 months x 3 days*)	15	900
Transportation/Petrol	1	60 (20 months x 3 days*)	100	6000
3 month				3150
EMO & SEU of DOE	2	18 (6 times in 20 months x 3 days*)	30	1080
Driver	1	18 (6 times in 20 months x 3 days*)	15	270
Transportation	1	18 (6 times in 20 months x 3 days*)	100	1800
6 month				1845
WREA, EDL & DOE	3	9 (3 times in 20 months x 3 days*)	30	810
Driver	1	9 (3 times in 20 months x 3 days*)	15	135
Transportation/Petrol	1	9 (3 times in 20 months x 3 days*)	100	900
Independent Monitoring				6,300
Social Specialist	1	20	200	4000
Driver	1	20	15	300
Transport and others	1	20	100	2000
GRAND TOTAL				19,995

*One monitoring mission requires 3 days to cover the Project Area

Notes:

- Based on the implementation schedule of the project (see Table 2-4), the total month for implementing RAP is 20 months[‡].
- The Budget Estimation is only of basic requirement, the actual practice is largely dependence on the real implementation in the field, the monitoring schedule's frequency may be reduced or increased in order to meet the RAP requirement at the time. EMU of EDL will make a detail action plan for field monitoring.

Table 8-6 Budget Estimation for fieldwork of PEMC

Item	Unit	Quantity	Day	Unit Cost (USD)	Total Cost (USD)
PEMC	Pers.	4*	60**	30	7,200
Driver	Pers.	2	60	15	1,800
Transportation / Petrol	Vehicle	2	60	100	12,000
Miscellaneous (10%)					2,100
Total					23,100

* 2 Staff per Province

** 60 days for each

[‡] The assumption of time frame for the RAP "20 month" here covers until the end of construction phase. In practice most of the RAP requirement is completed before the commencement of construction phase. However, it is difficult to assume exact period of RAP at this stage, 20 month period is used just for the estimation. Thus, the total period to complete the RAP requirement is most likely to be shorten.

The monitoring requirement of RAP is overlapped with EMP up to the commencement of construction activities. However, the monitoring activities based on EMP are continued until end of operation phase.

Table 8-7 Summary of Total Budget Estimation

Items	Total Cost (Kip)	Total Cost (USD)
1 Permanent Loss	16,810,000	1977.64
Paddy Rice	22,120,000	
Land Other Than Rice Paddy-	450,000	
Cemeteries	10,000,000	
2 Loss of Trees	341,250,000	40,147.06
3 Temporary Loss	95,640,000	11,251.77
Land Rental	20,640,000	
Crop Damage	30,000,000	
Rehabilitation	45,000,000	
4 DMS		94,300
5 Field Work of PEMC		23,100*
6 Monitoring and Evaluation		19,995
7 Community Assistance		4000
8 Estimation for Consultation & Workshop		3000
9 General Administration		5000
Contingency 10%		20,277.18
Grand Total		209,981.01

Exchange rate: 1\$ = 8,500 Kip

9 RESETTLEMENT MONITORING AND EVALUATION ARRANGEMENTS

During implementation of the RAP, EDL will implement a comprehensive monitoring and evaluation program to oversee the RAP implementation process and ensure that all Project Affected People are compensated adequately and effectively and that the incomes and livelihoods of PAPS have been restored (at minimum) to their previous levels. The monitoring and evaluation program will include both internal monitoring activities, implemented by EDL and external monitoring carried out by independent third parties.

9.1 Internal Monitoring

Internal monitoring will be carried out by EMU, EO and PEMC periodically during implementation of the RAP. Internal monitoring will take place on a monthly, three monthly and six monthly bases as described below.

9.1.1 *Monthly monitoring:*

EDL's EO will send their staff to the Project site once a month to consult with the EMU and PEMC, participate in field work and conduct interview with the Project affected villagers.

9.1.2 *Three month monitoring:*

A joint monitoring and evaluation between EDL's EO and the Social Environmental Unit (SEU) of Department of Electricity (DOE) of Ministry of Energy and Mines (MEM) will be conducted at the Project site once every three months. The purpose of the monitoring is to work with the EMU and PEMC to review the progress of EMP work, to adjust the EMP effectiveness and to consult with village representatives and Project affected villagers.

9.1.3 *Six month monitoring:*

A joint monitoring and evaluation mission comprised of Provincial WREA, DOE, EDL representatives will be conducted once every six months. The purpose of the monitoring is to review the entire recommendation made by the monthly and three month monitoring and evaluation reports, to consult with the EMU and PEMC, to consult with the Project affected villagers, to evaluate, review and modify if required the EMP and RAP implementation plan.

9.2 External (Independent) Monitoring and Evaluation

Base on the WREA's guidelines for independent review (or third party review) and the requirements of JICA, external monitoring and evaluation will be conducted by an independent third party. EDL will select an independent institution with expertise in resettlement planning and social assessment in Lao PDR with approval of financier as appropriate..

The main objective of the External (independent) monitoring program is to provide independent monitoring and evaluation of the resettlement implementation program, to determine whether the work carried out by EMU, and PEMC and others reflects the intent of the resettlement action plan and whether the objective of the RAP has been achieved.

As it is recommended in section 13.4 External Monitoring, Resettlement Technical Guidelines (2005 WREA), "Regular external monitoring should begin along with implementation activities and continue until the end of the project", it is preferable to conduct periodical external monitoring through implementation period of RAP. However, under the limited condition of the budget, it is recommended to conduct external monitoring after the completion of RAP as a mean for evaluating implementation process of RAP. In this case, the terms of reference of the monitoring needs to be included; the overall evaluation of the RAP implementation, recommendation for the future improvement of RAP planning, the planning of monitoring program for operational and maintenance phase and estimation of budget for the monitoring program. In practice, the responsibility on environmental and social issues of the project in design and construction phase is taken preliminary by Environmental Office in EDL headquarter. The EDL Branch Office in the Province where the Project is located is responsible for management in the operation and maintenance phase.

9.3 Post Implementation Monitoring and Evaluation

Six months to one year after the end of resettlement activities, the Independent Monitoring Body shall conduct an evaluation study of severely affected PAPs and the vulnerable groups among the affected population to determine whether or not the objectives of the Resettlement Plan, in terms of restoration of incomes and living standards have been achieved. The methodology for the evaluation study will be based on the follow up socio-economic survey to determine the impact of the Project on PAP income levels and living standards of those severely affected by the Project. Survey data obtained at the post evaluation stage will be compared with the data from the baseline survey derived from the DMS at the RAP preparation stage. An outcome of the Post Implementation Evaluation Study may be proposals for additional assistance to severely affected persons if resettlement measures were not adequate as well as recommendations for future resettlement planning.

9.4 Grievance Redress Mechanism

The affected people will be given many opportunities to review the survey results and compensation policies during the process of resettlement planning and implementation. However, during implementation, various issues might be encountered by the affected people. In order to resolve these concerns effectively and timely, a grievance redress mechanism shall be set up. The affected people will be notified about such mechanism before the resettlement implementation.

If a person is not satisfied with his or her compensation or rehabilitation measure, he could voice his complaint to the affected village head or directly to the EMU. The village head or the EMU will give the affected person an answer within two weeks. If he or she still does not agree with the solution, he or she could appeal to the PEMC where a PEMC subcommittee called “Grievance Committee” will be established to address these issues.

The Grievance Committee will make a final decision within two weeks. If he or she still does not agree with the decision, he could go the court for settling the matter. Depending on Project, and from previous similar Project, there was a case where it was settled in the parliament. The majority of cases however could usually be settled at PEMC sub-committee level.

10 REFERENCES

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Annex 1 – Summary of Villages with Land in the Right of Way

Province / District	Village Name	No. of Affected HHs	% of Village HH affected	Total Village land area (ha)	Line Distance on village land (km)	Area of Land within the ROW (ha)	Settlement within ROW?	Forest within ROW?	Agricultural Land within ROW?	% of Total Village land area within ROW
Savannakhet	35	462		25,324	108.2	270.35	6	12	34	
Kaysone	8	101		4,627	25.4	63.44	2	8	8	
	Ban Pakbor	5	3%	152	1.6	3.9	No	Yes	Yes	3%
	Ban Nongduern	29	5%	n/a	3.9	9.84	No	Yes	Yes	n/a
	Ban Dongnakham	6	1%	1,158	2.5	6.34	Yes	Yes	Yes	1%
	Ban Phonsim	16	8%	607	3.5	8.68	No	Yes	Yes	1%
	Ban Dongmakyang	7	2%	240	4.3	10.85	Yes	Yes	Yes	5%
	Ban Houay	25	25%	751	2.1	5.22	No	Yes	Yes	1%
	Ban Somsa-at	4	2%	1,400	3	7.45	No	Yes	Yes	1%
	Ban Xokvang-Tai	9	4%	319	4.5	11.16	No	Yes	Yes	4%
Champhone	2	22		3,034	4.6	11.64	--	1	2	
	Ban Lak 35	9	3%	1,434	3	7.59	No	No	Yes	1%
	Ban Nateuy	13	3%	1,600	1.6	4.05	No	Yes	Yes	0%
Xaiphouthong	6	96		5,655	23.9	59.46	--	2	5	
	Bna Khamxan	4	2%	826	2.2	5.45	No	Yes	No	1%
	Ban Khasavang+Khoua	12	14%	1,103	5.5	13.72	No	No	Yes	1%
	Ban Sisavang	14	8%	n/a	3.6	8.96	No	No	Yes	n/a
	Ban Dongmakfai	10	3%	1,386	4.3	10.68	No	No	Yes	1%
	Ban Phonsikeo	15	6%	353	3.3	8.2	No	Yes	Yes	2%
	Ban Nakae	41	21%	1,987	5	12.45	No	No	Yes	1%
Songkhone	19	243		12,008	54.3	135.81	4	1	19	
	Ban Oumnamkhong	13	10%	455	2.7	6.77	No	No	Yes	2%
	Ban Nongnokkhan	10	7%	874	3.5	8.79	Yes	No	Yes	1%
	Ban Nonesomphou	15	9%	465	1.8	4.51	No	No	Yes	1%

Province / District	Village Name	No. of Affected HHs	% of Village HH affected	Total Village land area (ha)	Line Distance on village land (km)	Area of Land within the ROW (ha)	Settlement within ROW?	Forest within ROW?	Agricultural Land within ROW?	% of Total Village land area within ROW
	Ban Nonesomboune	34	31%	771	3.1	7.65	No	No	Yes	1%
	Ban Lattana	5	2%	560	3.2	7.98	No	Yes	Yes	1%
	Ban Thongsymouang	9	4%	610	5.5	13.72	Yes	no	Yes	2%
	Ban Malaythong	4	3%	650	2.3	5.65	No	No	Yes	1%
	Ban Khummouan	15	23%	486	1.5	3.85	Yes	No	Yes	1%
	Ban Hintek	4	3%	1,700	2	4.98	No	No	Yes	0%
	Ban Nonesavang	7	3%	884	2.4	5.91	No	No	Yes	1%
	Ban Salaleio	15	24%	542	4.7	11.85	No	No	Yes	2%
	Ban Nongkhangou	10	6%	470	4.4	11.07	No	No	Yes	2%
	Ban Nontaothan	7	6%	675	1.5	3.66	No	No	Yes	1%
	Ban Kengtangan	14	10%	770	4.8	12.08	No	No	Yes	2%
	Ban Naoudom	30	19%	420	2.5	6.37	No	No	Yes	2%
	Ban Houaypian	18	12%	330	1.9	4.77	No	No	Yes	1%
	Ban Nakhanhom	10	14%	517	1.2	2.97	Yes	No	Yes	1%
	Ban Donxat	9	11%	n/a	2.7	6.75	No	No	Yes	n/a
	Ban Senouan Nuea	14	56%	829	2.6	6.48	No	No	Yes	1%
Saravan	46	442		35,588	110	273.88	2	15	46	
Lakhonpheng	21	211		15,358	53	131.99	2	8	21	
	Ban Phouangsavanh	5	9%	n/a	4.4	11.03	Yes	Yes	Yes	n/a
	Ban Phouangmalay	6	12%	136	3.6	8.97	Yes	No	Yes	7%
	Ban Okart	5	4%	323	3.5	8.78	No	No	Yes	3%
	Ban Nonsavang	15	13%	628	0.9	2.31	No	No	Yes	0%
	Ban Nongkhitom	8	33%	n/a	1.3	3.18	No	No	Yes	n/a
	Ban Donvay	12	25%	88	1.7	4.25	No	Yes	Yes	5%
	Ban Nathom	1	2%	484	0.6	1.37	No	Yes	Yes	0%

Province / District	Village Name	No. of Affected HHs	% of Village HH affected	Total Village land area (ha)	Line Distance on village land (km)	Area of Land within the ROW (ha)	Settlement within ROW?	Forest within ROW?	Agricultural Land within ROW?	% of Total Village land area within ROW
	Ban Lakhonsy-Tai	5	8%	n/a	1.5	3.7	No	No	Yes	n/a
	Ban Houaykaphoxay	8	6%	402	3.2	8.09	No	No	Yes	2%
	Ban Xokpheng	28	56%	95	1.8	4.51	No	Yes	Yes	5%
	Ban Nadoukao	15	9%	362	2	5.11	No	No	Yes	1%
	Ban Nonedinsai	17	12%	8,100	3.3	8.15	No	No	Yes	0%
	Ban Lak 94	9	24%	250	4.2	10.42	No	Yes	Yes	4%
	Ban Lak 90	8	10%	505	2.5	6.24	No	Yes	Yes	1%
	Ban Phoudaochang	3	3%	780	2.5	6.2	No	Yes	Yes	1%
	Ban Nongsano	7	12%	246	2.5	6.18	No	No	Yes	3%
	Ban Tangbeng	8	4%	1,899	3.6	8.95	No	No	Yes	1%
	Ban Phonepheng	19	9%	n/a	2.3	5.63	No	No	Yes	n/a
	Ban Nanglao	12	6%	686	1.9	4.75	No	No	Yes	1%
	Ban Lakhonsy-Kang	14	13%	n/a	3.1	7.66	No	No	Yes	n/a
	Ban Donelay	6	5%	374	2.6	6.51	No	Yes	Yes	2%
Vapi	13	137		4,428	32	79.88	--	3	13	
	Ban Vapi	8	3%	n/a	4.8	11.99	No	No	Yes	n/a
	Ban Phaylom	8	4%	568	0.4	1.08	No	No	Yes	0%
	Ban Nonkho	14	18%	161	2.7	6.78	No	Yes	Yes	4%
	Ban Nakoktan	12	9%	502	2.6	6.47	No	No	Yes	1%
	Ban Nongngong	7	4%	602	0.3	0.65	No	No	Yes	0%
	Ban Bangkhanam	11	13%	n/a	2.5	6.3	No	No	Yes	n/a
	Ban Phakha	4	5%	182	1.7	4.24	No	No	Yes	2%
	Ban Sapath	25	14%	341	2.3	5.81	No	Yes	Yes	2%
	Ban Mouang	15	8%	546	2	5.08	No	Yes	Yes	1%
	Ban Kengsouthi	15	8%	452	2.6	6.41	No	No	Yes	1%

Province / District	Village Name	No. of Affected HHs	% of Village HH affected	Total Village land area (ha)	Line Distance on village land (km)	Area of Land within the ROW (ha)	Settlement within ROW?	Forest within ROW?	Agricultural Land within ROW?	% of Total Village land area within ROW
	Ban Lao	9	7%	216	2.6	6.38	No	No	Yes	3%
	Ban Kengkou	8	8%	310	2.8	6.88	No	No	Yes	2%
69	Ban Mai oudomxai	1	1%	548	4.7	11.81	No	No	Yes	2%
Salavan	12	94		15,802	25	62.01	--	4	12	
	Ban Bungkham	33	10%	4190	5.7	14.14	No	Yes	Yes	0%
	Ban Nongsai	4	3%	1530	3.7	9.28	No	Yes	Yes	1%
	Ban Bungxai	12	3%	1407	1.6	4.02	No	No	Yes	0%
	Ban Donekeo	5	3%	n/a	3.3	8.17	No	No	Yes	n/a
	Ban Thongnakham	4	2%	n/a	2.3	5.71	No	No	Yes	n/a
	Ban Nonbouhin	7	5%	3953	1.1	2.65	No	No	Yes	0%
	Ban Phakphaewthong	3	6%	100	1.1	2.64	No	No	Yes	3%
	Ban Nadonkoua	7	12%	140	1.3	3.27	No	No	Yes	2%
	Ban Tong-noi	7	23%	51	1.9	4.72	No	Yes	Yes	9%
	Ban Maisivilay	4	14%	56	1.3	3.3	No	Yes	Yes	6%
	Ban Nathon	1	2%	4375	0.6	1.4	No	No	Yes	0%
	Ban Tong-Ngai	7	28%	n/a	1.1	2.71	No	No	Yes	n/a
TOTAL	81	904		60,912	218.2	544.23	8	27	80	

Note:

- This table does not include potential impacts on Ban Taothan, which will now be affected by the selection of the new sub-station site (end of July 2009) and the subsequent realignment of the transmission line.
- The assessment of the presence of settlement land within the ROW was based on the original alignment provided in the Project TOR. Following the field surveys, the transmission line alignment was altered to avoid impact on settlement areas.

Annex 2 – Field Survey Result Summary

Table 1: Affected Villages, Village Heads & Contact Info, Impacted Households
(Source: ESL Village Level Surveying 2009)

Province	District		Village Name	Village Chief	Phone number	Total No. HH	No. impact HH	No. Affected People	No. of HH surveyed
SVK	Kaysone	1	Ban Pakbor	Mr. Boualai Saiyalat	5964509	166	5	34	-
		2	Ban Nongduern	Mr. Khamwan Thongsamlit	5861619	589	29	197	11
		3	Ban Dongnakham	Mr. Thongphoun Bounmixay	6823670	515	6	41	-
		4	Ban Phonsim	Mr Panya Keovilayvong	5741107	190	16	109	7
		5	Ban Dongmakyang	Mr Nouphone Saykosi	5057056	355	7	48	-
		6	Ban Houay	Mr Bounthieng Yothmalakham	5960287	101	25	170	10
		7	Ban Somsa-at	Mr. Bouavanh	5891459	222	4	27	-
		8	Ban Xokvang-Tai	Mr. Khanha	2625679	241	9	61	-
				Sub-Total		2,379	101	687	28
	Champhone	9	Ban Lak 35	Mr. Khamphan Thepkaisone	2694184	285	9	61	-
		10	Ban Nateuy	Mr. Nounsine	2317563	439	13	88	6
				Sub-Total		724	22	150	6
	Xaiphouthong	11	Bna Khamxan	Mr BounthiengSibouaphan	5155149	193	4	27	-
		12	Ban Khasavang+Khousa	Mr.Kham Phanthavong	5865279	88	12	82	5
		13	Ban Sisavang	Mr Khounxay Khammixay	2798101	178	14	95	6
		14	Ban Dongmakfai	Mr.Phoukeo Duangdy	5621110	394	10	68	4
		15	Ban Phonsikeo	Mr. Daosadeth Sonesuvamasee	5745001	252	15	102	6
		16	Ban Nakae+++	Mr. Chantha	5861035, 6744886	193	41	279	14
				Sub-Total		1,298	96	653	34
	Songkhone	17	Oumnamkhong	Mr. Bounlurn	5966104	126	13	88	6
		18	Nongnokkhan	Mr.Thong	4705310-5156503	150	10	68	5
		19	Nonesomphou	Mr. Jonh	5966139, 5259964	168	15	102	6
		20	Nonesomboun	Mr. Khamdee	5863295, 6552015	110	34	231	14
		21	Ban Lattana	Mr.Vongphachan(keang)	5440856	298	5	34	-
		22	Ban Thongsymouang	Mr Bounthomsiphoxay	2318944-3033286	224	9	61	-
		23	Ban Malaythong	Mr Sathien Thongsob	5954182	132	4	27	-
		24	Ban Khummouan	Mr Somchai Somsit	6492745	65	15	102	6
		25	Ban Hintek	Mr. Ampha	5241033	133	4	27	-
		26	Ban Nonesavang	Mr. Keokhamphat	5456081	210	7	48	-
		27	Ban Salaleio	Mr Laothong	5230672	63	15	102	6
		28	Ban Nongkhangou	Mr Khamphai	5959932	182	10	68	4
		29	Ban Nontaothan	Mr vaen	4107386	128	7	48	-
		30	Ban Kengtangan	Mr. Southavi	5248626	145	14	95	6
		31	Ban Naoudom	Mr Phu kam	5230201	159	30	204	11
		32	Ban Houaypian	Mr. Loun	6156907, 5863533	150	18	122	7
33		Ban Nakhahom	Mr Suli keoboun heung	3037793	72	10	68	5	
34		Ban Donxat	Mr. Loun	6156907, 5863533	85	9	61	-	
35		Ban Senouan Nuea	Mr Kammone	5239385	25	14	95	6	
			Sub-Total		2,625	243	1,652	81	
SRV	Lakhongeng	36	Ban Phouangsavanh	Mr. Hong	N/A		5	34	-
		37	Ban Phouangmalay	Mr. Noum	2631599, 2601530		6	41	-
		38	Ban Okart	Mr. Ko	2288648, 2276721		5	34	-
		39	Ban Nonsavang	Mr Boun Leun	2310063	56	15	102	6
		40	Ban Nongkhitom	Mr. Kham	N/A	50	8	54	-

		41	Ban Donvay	Mr kian ketsone	2721349	141	12	82	5
		42	Ban Nathom	Mr Sam Lan	2619640	120	1	7	-
		43	Ban Lakhonsy-Tai	Mr. Somesack	N/A	24	5	34	-
		44	Ban Houaykaphoxay	Mr. Phomsalit	5843304, 4070642	48	12	82	4
		45	Ban Xokpheng	Mr. Khamsen	6671481	46	6	41	-
		46	Ban Nadoukao	Mr. Chit	5458775, 5962693	60	28	190	12
		47	Ban Nonedinsai	Mr. Lern	6465803	145	15	102	6
		48	Ban Lak 94	Mr. Amkha savilai	5254902	50	17	116	-
		49	Ban Lak 90	Mr. Ngan lasikeo	657127	177	9	61	-
		50	Ban Phoudaochang	Mr. Boun	4370234	142	8	54	-
		51	Ban Nongsano	Mr. Bounhom	6864568	38	3	20	-
		52	Ban Tangbeng	Mr Thong Vanh	5269683	78	7	48	-
		53	Ban Phonepheng	Mr. Khamsen	4014933, 5077513	109	8	54	-
		54	Ban Nanglao	Mr. Nika Chanthalansi	5097274	61	19	129	8
		55	Ban Lakhonsy-Kang	Mr NaLong shi	6177062	215	14	95	6
		56	Ban Donelay	Mr Vanta	5077580	210	6	41	-
			Sub-Total			1,770	209	1,421	46
	Vapi	57	Ban Vapi	Mr. Pany	N/A	107	8	54	-
		58	Ban Phaylom	Mr.Somlay	6618854	132	8	54	-
		59	Ban Nonkho	Mr. Nokhone	2278530, 2757507		14	95	6
		60	Ban Nakoktan	Mr BounKham	6863512	285	12	82	5
		61	Ban Nongngong	Mr. Somchai	2278942, 5831462	188	7	48	-
		62	Ban Bangkhanam	Mr somphone	2509126	80	11	75	4
		63	Ban Phakha	Mr Bounhueng	2617576	134	4	27	-
		64	Ban Sapath	Mr. Khamla	5831711, 2718394	188	25	170	10
		65	Ban Mouang	Mr. Phommee	030 5370448, 6909375	87	15	102	6
		66	Ban Kengsouthi	Mr somlith	305370525	83	15	102	6
		67	Ban Lao	Mr Boudsa	6690031	185	9	61	-
		68	Ban Kengkou	Mr Khamta	030 5370697	201	8	54	-
		69	Ban Mai oudomxai	Mr Sida	5759874	190	1	7	-
			Sub-Total			1,860	137	932	37
	Salavan	70	Ban Bungkham	Mr. Bounta Khanthasenghong	030 5370654, 020 2772039	105	33	224	14
		71	Ban Nongsai	Mr. Sounthone	5144635	197	4	27	-
		72	Ban Bungxai	Mr. Chanthone	5098042		12	82	5
		73	Ban Donekeo	Mr. Bounmee	4153579, 6564016	336	5	34	-
		74	Ban Thongnakham	Mr. Bounmee	6564016, 6909379	151	4	27	-
		75	Ban Nonbouhin	Mr. Khamla	5267176	418	7	48	-
		76	Ban Phakphaewthong	Mr Vansy	6944021	151	3	20	-
		77	Ban Nadonkoua	Mr. Khamphong	6563579	179	7	48	-
		78	Ban Tong-noi	Mr. Sounthone	5948950, 6528749	153	7	48	-
		79	Ban Maisivilay	Mr. Khanthaly	6749708, 6465942	47	4	27	-
		80	Ban Nathon	Mr. Samian	2619640	61	1	7	-
		81	Ban Tong-Ngai	Mr. Dam	6167012	30	7	48	-
			Sub-Total			1,828	94	639	19
		81	Total			12,484	902	6,134	251

Household surveying conducted

Table 2: Household Survey - Land Impacted by the ROW
(Source: ESL Household Surveying 2009)

District	Village Name	No. of HH that use or own land in ROW?		Use of land in the ROW										When did you start using the land of the ROW ?	What type of title do you have on this land						
		Yes	Not recorded	residential	farming	Not Recorded	Permanent rice	Permanent other crop	Swidden rice	Swidden other crop	Home garden	Grazing (cows etc ...)	NFTP		Scrub land/for trees plantation	hunting/trapping	Land title	Certificate	Permanent customary ownership (village)	Rented in or tenanted from other owner	Swidden in area of customary ownership (village)
Kaysone	Ban Nongduern	8	3	4	4	3				1		0	2	0	1->30 y	4	1				6
	Ban Phonsim	7		0	3		6	1				0	0	0	40->100 y	7					
	Ban Houay	9	1	0	9	2	3		1	1	1	2	1	0	5->50 y	10					
	Sub-Total	24	4	4	16							1	3	0	n/a	21	1	0	0	0	6
Champhone	Ban Nateuy	5	1	0	5	6						0	0	-	20->50	1	1	4			
	Sub-Total	5	1	0	5						0	0	0	n/a	1	1	4	0	0	0	
Xaiphouthong	Ban Khasavang+Khoua	5		0	5	1	4					0	0	-	>30		2				
	Ban Sisavang	6		0	6	1	4	1	1		1	0	0	-	8->100		6				
	Ban Dongmakfai	4		0	4		4					0	0	-	8->30		2	2			
	Ban Phonsikeo	6		1	6		4	3	1	2	3	1	1	4	15->50y	3	3				
	Ban Nakae+++	14		0	14		1	4	2				0	0	-	30->100y	9	5			
	Sub-Total	35	0	1	35							1	4	0	n/a	12	18	2	0	0	0
Songkhone	Oumnamkhong	6		0	6		6					0	0	-	30->100	2	3	1	0	0	0
	Nongnokhian	5		1	4		4					0	0	-	:7-60	2	3	0	0	0	0
	Nonesomphou	6		3	6		6		1		2	1	0	1	1->50	1	5	0	0	0	0
	Nonesomboun	14		1	13		4			3		1	4	-	7->30	13	0	0	0	0	0
	Ban Khummouan	6		1	1		1					0	0	-	>12	3	3	0	0	0	0
	Ban Salaleio	6		0	3		6					1	1	-	9->20	6	0	0	0	0	0
	Ban Nongkhangou	4		0	3		4					0	0	-	4->20	4	0	0	0	0	0
	Ban Kengtanganh	6		3	6		6	1	1	1	1	0	1	-	>15	6	0	0	0	0	0
	Ban Naoudom	11		1	8		1				1	0	0	-	1->50	11	0	0	0	0	0
	Ban Houaypian	7		0	7		7					0	0	-	>19	7	0	0	0	0	0
	Ban Nakhanhom	5		0	5		5					0	0	-	>60	2	1	2	0	0	0
	Ban Senouan Nuea	6		0	6		6					0	0	-	>20	3	1	2	0	0	0
	Sub-Total	82	0	10	68							2	7	0	n/a	60	16	5	0	0	0
	Lakhongpang	Ban Nonsavang	6	2	1	4		6								>50					
Ban Donvay		4	1		5		5								5->100						
Ban Houaykaphoxay		4	2		2		4								20->35						
Ban Nadoukao		12			12		2				1				25->100						
Ban Nonedinsai		6			2	2	4						1		35->50						
Ban Nanglao		8			7		8					1	1		15->50						
Ban Lakhonsy-Kang		6		3		1	5						1		<1->50						
Sub-Total		46	5	4	32							1	3	0	n/a						
Vapi	Ban Nonkho	6			6		6								>50 y		3	3			

		No. of HH that use or own land in ROW?		Use of land in the ROW										When did you start using the land of the ROW ?	What type of title do you have on this land							
District	Village Name	Yes	Not recorded	residential	farming	Not Recorded	Permanent rice	Permanent other crop	Swidden rice	Swidden other crop	Home garden	Grazing (cows etc ...)	NFTP		Scrub land/for trees plantation	hunting/trapping	Land title	Certificate	Permanent customary ownership (village)	Rented in or tenanted from other owner	Swidden in area of customary ownership (village)	Swidden within a commons area (shared)
	Ban Nakoktan	5		2	3		5					1				<10y - >50y	3	2				
	Ban Bangkhanam	4	2		2		3									<50 y	2	2				
	Ban Sapath	10			10		9								1	>100 y	5		5			
	Ban Mouang	6			6		6									<40 y	1	2	3			
	Ban Kengsouthi	6	1		3		5				1		1	1		50 y - >200 y		6				
	Sub-Total	37	3	2	30		4	0	0	0	1	1	1	1	1	n/a	11	15	11	0	0	0
Salavan	Ban Bungkham	14			14								0	0	-	5->100y		7	7			
	Ban Bungxai	5			5								0	0	-	>30->50y	4	1				
	Sub-Total	19	0	0	19		0						0	0	0	n/a	4	8	7	0	0	0
	Total	248	13	21	205		3	4					6	18	1	n/a	109	59	29	0	0	6

Table 3: Household Survey - Economic Trees Impacted in the ROW
(Source: ESL Household Surveying 2009)

District	Village Name	No. of HH with economically important trees inside the ROW?																											
			Mango		Coconut		Palm tree		Tamarind		Bamboo		Banana		Tropical hardwood		Eucalyptus		Teak trees		Mai Yang		Mai Doo		Other soft woodern trees		Other		
			No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	
Kaysone	Ban Nongduern	1	10		80		6																				53		
	Ban Phonsim	0																											
	Ban Houay	4	20					15							115														
	Sub-Total	5	30	0	80	0	6	0	15	0	0	0	0	0	115	0	0	0	0	0	0	0	0	0	0	0	53	0	
Champhone	Ban Nateuy	4													278											20			
	Sub-Total	4	0	0	0	0	0	0	0	0	0	0	0	0	278	0	0	0	0	0	0	0	0	0	20	0	0	0	
Xaiphouthong	Ban Khasavang+Khousa	0																											
	Ban Sisavang	2						30							3	10					201	10			4	20			
	Ban Dongmakfai	3													50		30										250		
	Ban Phonsikeo	3	7	>4	1	10			14	>13			40		86	>10											50	>3	
	Ban Nakae+++	1																											
	Sub-Total		7	0																									
Songkhone	Oumnamkhong	3													6												1650		
	Nongnokkhian	1													40													9	
	Nonesomphou	3	4		2																								
	Nonesomboun	3													30													1731	
	Ban Khummouan	4	3		7				3				14		2														
	Ban Salaleio	2							40						2													80	
	Ban Nongkhangou																												
	Ban Kengtanh	3	1						3																			250	
	Ban Naoudom	1													1														
	Ban Houaypian	4							100						10														225
	Ban Nakhanhom	2											20		18														150
	Ban Senouan Nuea	5	1		10										130														70
	Sub-Total		9	0																									
Lakhongpeng	Ban Nonsavang	2	7		2				10				20		15														
	Ban Donvay	0																											
	Ban Houaykaphoxay	0																											
	Ban Nadoukao	8	18		2				1				80		40													392	
	Ban Nonedinsai	2													13														
	Ban Nanglao	4	4	20	5	6	3	>20	9				10		10														
	Ban Lakhonsy-Kang	3	2	30					1						50														
	Sub-Total		31	50																									
Vapi	Ban Nonkho	1	1	8	2	8							10	3															
	Ban Nakoktan	-																											
	Ban Bangkhanam	2																							2	11	70	15	

District	Village Name	No. of HH with economically important trees inside the ROW?																												
			Mango		Coconut		Palm tree		Tamarind		Bamboo		Banana		Tropical hardwood		Eucalyptus		Teak trees		Mai Yang		Mai Doo		Other soft woodern trees		Other			
			No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)	No. of trees	Age (years)
	Ban Sapath	8	8	>10			4	5	27	50					88	>15	69	>5					3	>15						
	Ban Mouang	3									1						5	10	120	3	20	20								
	Ban Kengsouthi	4	8	>5	2	6.0			4	8							220	2												
	Sub-Total	18	17	8	4	14	4	5	31	58	1	0	10	3	88	0	294	12	120	3	20	20	5	11	70	15	0	0		
Salavan	Ban Bungkham	0																												
	Ban Bungxai	0																												
	Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Total	27	94	58	84	14	10	5	46	58	1	0	10	3	481	0	294	12	120	3	20	20	25	11	70	15	53	0		

Table 4: Household Survey: Fixed Assets Impacted by the ROW
(Source: ESL Household Surveying 2009)

District	Village Name	No. of HH with Houses located in the ROW				No. of HH with Other structures located in the ROW								No. of HH with Other assets lost on the impacted land?									
		Bamboo / thatch	Wooden	Wooden with concrete base	Brick / Concrete	0.Unknown	Barn or sty	WC/bathroom	Kitchen	Trading stall	Generator shed	Rice store	Other	Well	Pump well	Pond	fence: wooden	wall: masonry	fence: metal	grave (earth)	Grave (concrete)	Irrigation	Other
Kaysone	Ban Nongduern		6			1								3	1	1	2		1				
	Ban Phonsim																						
	Ban Houay															1							
	Sub-Total	0	6	0	0	1	0	0	0	0	0	0	0	3	1	2	2	0	1	0	0	0	0
Champhone	Ban Nateuy					3											1						
	Sub-Total	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Xaiphouthong	Ban Khasavang+Khua													0		0							
	Ban Sisavang													0		0							
	Ban Dongmakfai					1								0		1					1		
	Ban Phonsikeo						2							1		3	3						
	Ban Nakae+++													0		0	0						
	Sub-Total	0	0	0	0	1	2	0	0	0	0	0	0	1	0	4	3	0	0	0	1	0	0
Songkhone	Oumnamkhong																						3
	Nongnokhian		1		1		2						1			3	1						
	Nonesomphou															2							
	Nonesomboun	1														1	8						
	Ban Khummouan		3	3												1	6						
	Ban Salaleio															1	1						
	Ban Nongkhangou																2						
	Ban Kengtanganh																2						
	Ban Naoudom																						
	Ban Houaypian						1													1			
	Ban Nakhanhom		2				2										1	1					
	Ban Senouan Nuea																	1					
	Sub-Total	1	6	3	1	0	10	0	0	0	0	1	1	0	2	20	10	0	1	0	0	0	0
Lakhonggeng	Ban Nonsavang		1											1		2							43
	Ban Donvay															1							30
	Ban Houaykaphoxay															1							36
	Ban Nadoukao															8	4						89
	Ban Nonedinsai						1									2							28
	Ban Nanglao						6									5	1						62
	Ban Lakhonsy-Kang		3				1	2	1							2	1						35
	Sub-Total	0	4	0	0	0	8	2	1	0	0	0	0	1	0	21	6	323	1	0	0	0	0
Vapi	Ban Nonkho																						
	Ban Nakoktan						3																
	Ban Bangkhanam						1																1
	Ban Sapath						8										7	2					2
	Ban Mouang						6										2						
	Ban Kengsouthi						6										4	2					1

District	Village Name	No. of HH with Houses located in the ROW				No. of HH with Other structures located in the ROW								No. of HH with Other assets lost on the impacted land?									
		Bamboo / thatch	Wooden	Wooden with concrete base	Brick / Concrete	0.Unknown	Barn or sty	WC/bathroom	Kitchen	Trading stall	Generator shed	Rice store	Other	Well	Pump well	Pond	fence: wooden	wall: masonry	fence: metal	grave (earth)	Grave (concrete)	Irrigation	Other
	Sub-Total	0	0	0	0	0	24	0	0	0	0	0	0	0	0	16	4	0	0	0	0	4	0
Salavan	Ban Bungkham													0	0	0	0	117					
	Ban Bungxai						1							0	0	1	1	28					
	Sub-Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	145	0	0	0	0	0
	Total	1	16	3	1	5	45	2	1	0	0	1	1	5	3	64	27	468	3	0	1	4	3

Note: Results obtained without DMS. Satalite imagery used to confirm results. Ban Nongdurn (Kaysone) and Ban Nonesomboun (Songkhone) are not impacted by the TL