# **Environment and Social Monitoring Report**

Monthly Progress Report May-December 2006 (1/4)

LAO PDR: GMS Nam Theun 2 Hydroelectric Project

Prepared by the Environment and Social Division of Nam Theun 2 Power Company, Ltd.

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# **NAM THEUN 2 POWER COMPANY LTD**

# **Environment & Social Progress Report**

Period May 2006 to Dec 2006

This report is a compilation of the following E&S monthly progress reports produced by the E&S Unit of Nam Theun2 Power Co. Ltd.:

- 1. E&S Monthly Progress Report May 2006
- 2. E&S Monthly Progress Report Jun 2006
- 3. E&S Monthly Progress Report Jul 2006
- 4. E&S Monthly Progress Report Aug 2006
- 5. E&S Monthly Progress Report Sept 2006
- 6. E&S Monthly Progress Report Oct 2006
- 7. E&S Monthly Progress Report Nov 2006
- 8. E&S Monthly Progress Report Dec 2006

The reports have been edited for public release and are presented sequentially in this compilation.



# Nam Theun 2 Power Company Ltd.

# Nam Theun 2 Hydro-Electric Project

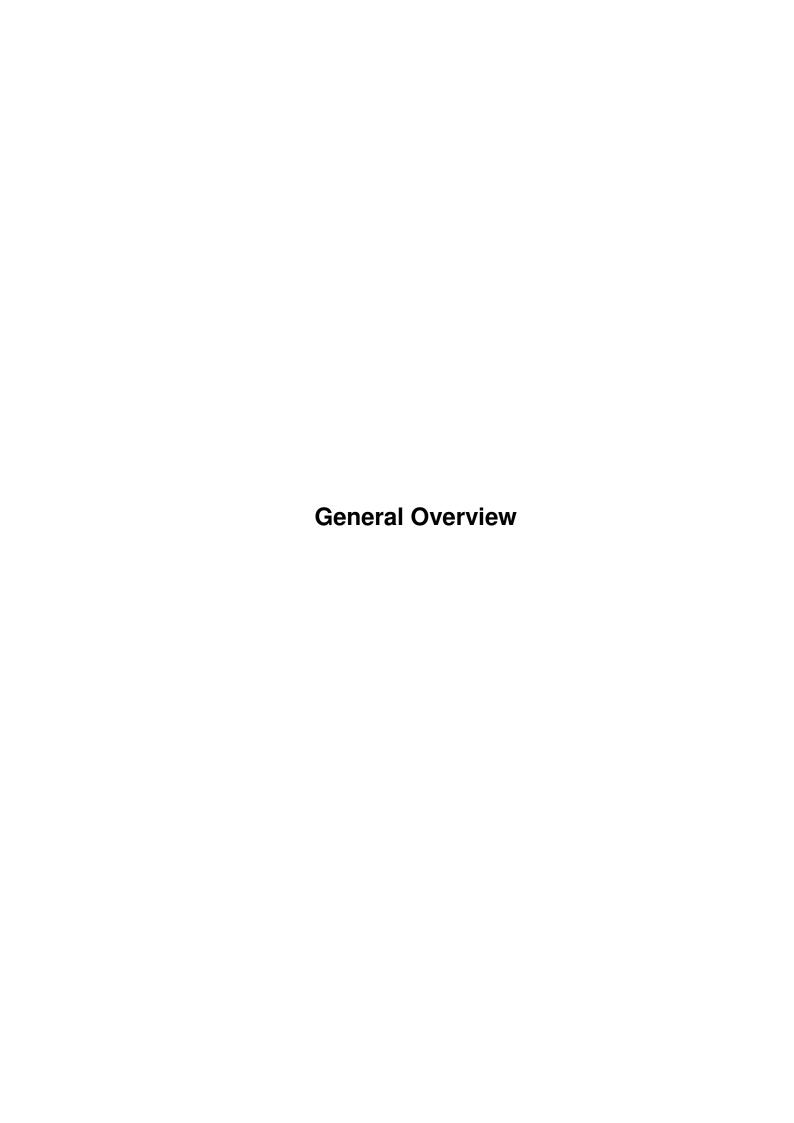
# Monthly Progress Report covering activity in May 2006

Part C: Environmental & Social Report

# **Table of Contents**

1 G	GENERAL OVERVIEW	5
1.1	Staffing NTPC, GOL (EMU, RMU, DWG) and Partners	8
1.2	Unanticipated Project Impacts	9
1.3	Additional Plans and PIP updating	9
1.4	Grievance procedure	9
1.5	Communication	9
1.6	Procurement	9
2 S	SOCIAL ACTIVITIES	12
2.1	Physical Cultural Resources, Project Lands, Camp Followers	12
2.1.1		
2.1.2	3	
2.1.3	3 Camp Followers	18
2.2	Public Health Regional and Resettlement Programs	25
2.3	Nakai Plateau Resettlement	38
2.3.1		
2.3.2		
2.3.3	J 1 C	
2.3.4		
2.3.5	6	
2.3.6	6 Community Development Program	56
2.4	Downstream Areas Development Plans	68
2.5	Internal and external monitoring	72
3 E	ENVIRONMENTAL ACTIVITIES	74
3.1	General	74
3.2	Wildlife Programmes	74
3.2.1	e e e e e e e e e e e e e e e e e e e	
3.2.2		
3.2.3		
3.2.4	1	
3.2.5 3.2.6	C	
3.2.0	o Adaptive Management Flogrammes	
3.3	Water Quality Monitoring and Assessment Programme	78
3.4	Internal and external monitoring	78
3.5	Environmental measures linked to construction	78
4 G	GOL RELATED ACTIVITIES	80
4.1	Watershed Management Protection Authority (WMPA)	80

Nam <sup>-</sup>	Theun 2 Project	NPTC Monthly Progress Report – Part C - Environmental & Social
		May 2006
4.2	Optimization of salvage loggin	g on the Nakai Plateau80
4.3	Social issues	80



## 1 General Overview

#### Procurement:

#### Procurement:

NTPC procurement activity is much active and remains critical for the timely implementation
of measures. Further to NTPC's official request to revise the procurement rules defined in the
"NTSEP Project Agreement" (request made on the 8th of December), the amended NTSEP
Project Agreement has been agreed upon by NTPC on May the 12<sup>th</sup>, 2006. This amended
procedure and the good communication between WB and NTPC enabled provision of a
significant number of awaited NOL.

#### Project lands:

- <u>Resettlement Action Plans (RAP):</u> RAPs are being written with CARE, DWGs and NTPC team.
  - RAP for Oudomsouk and Gnommalat plain was posted on November 2005. All RAPs will be finalized by  $20^{th}$  June 2006.
- <u>Transmission Line:</u> beginning of the procedure for Land Access and Provisional Compensation for LPA 57, in Savannakhet Province, with involvement of CARE Laos for PAPs identification.
- Gnommalat / Downstream Channel: Provisional Compensation for disposal area 5; relocation of 12 houses (inside the villages); Land allocation for 27 PAPs in Gnommalat, contracts between PAPs and District have been signed, UXO contracts negotiated
- <u>Livelihood restauration</u>: implementation of Rice improvement program started in May, for 148 PAPs, in Gnommalat (87) and Mahaxai (61); aquaculture programs (existing fishponds): 10 PAPs; NTFP: new sites prepared for nursery (1000 m2 at DAFO office in Gnommalat, 5000 seedlings, to be planted in June)
- <u>Gnommalat</u>: consultation on land reallocation (4 villages in Gn. District)

#### Public Health:

- Infrastructure: rehabilitation works of 4 Health Center and District Hospital have started on 19 May 06. Expected completion in July 06. A contract has been signed for the Gnommalat hospital, but works are postponed to the next dry season. Bidding process have been launched for 2 health centers.
- <u>Equipment:</u> One ambulance is awaiting custom clearance; about 11500 impregnated bed nets have been distributed.
- <u>Training, capacity building:</u> training courses were provided on TBA (7) and STI (3 days). Two health workers from Nakai District after completion of training are working with resettled population along with RMU District Facilitator. District monthly meetings were held as planned
- <u>Supervision:</u> Routine supervision of the health center staff's activities was conducted during the month.

<u>Transition Resettlement</u>: Health checks and survey for 8 household in Nong Boua (resettlers from Keng Gnao) completed, but analysis remains to be done. Working relations of HPMU and RMU are being implemented. Revision of village health volunteers in new settlements.

#### Nakai Plateau resettlement

#### Infrastructure:

• 15 days with rain, total of 220 mm rainfall measured at Nakai (below monthly mean of 456.9mm).

Page 5 /94

- Extra topographic survey and mapping: The extra work at area 21 for Ban Done is complete and nearly complete at Areas 1 and 2. A contract was signed for extra survey at Area 13 for the Ban Thalang irrigated agriculture area.
- <u>UXO search and clearance</u>: The contractor has nearly completed the four northern VG1 areas and has started vegetation removal at Area 13 housing area for Ban Thalang. They will move to the southernmost areas in early June. The Khammouane Provincial Army has completed searching the route of the Southern Resettlement Road and the southern VG2 Area 21 for Ban Done. There is an ongoing contract for UXO community awareness and on-call roving response teams with the contractor. The roving unit is becoming well known to villagers and has been contacted on a number of occasions to investigate suspicious items and to dispose of UXO found in community areas.
- <u>Timber houses</u>: The construction of timber houses in Area 16 (Pilot Village) for 8 families resettling from Ban Keng Gnao is almost complete. Few walls components are still missing but the necessary sawn timber should be made available early June to allow the final completion. The contractors awarded the timber houses construction contracts at areas 17 Bouama, 18 Phonsavang and 19 Sop On have already mobilized and have started the construction works. The 3 contracts for the northern villages of Sop Ma Sop Hia, Nong Boua Kham and Sop Phene have not yet started due to necessary additional preparation works on the site (site clearance, access etc.).
- Roads and tracks: Road construction has progressed well despite some problems of heavy rains and some equipment breakdowns.
  - Construction of the access track from the Pilot Village turnoff to the start of the Southern Resettlement Road is complete.
  - $_{\odot}$  The contract for the construction of access roads to and within the three southern VG1 resettlement areas is about 80% complete.
  - The contract for the construction of the Southern Resettlement Road is about 30% complete.
  - The contract for the construction of the access tracks to and within the four northern VG1 resettlement areas is about 50% complete.
- <u>Irrigation:</u> The detail design of the irrigation area extension at the Pilot Village for the Keng Gnao resettlers is complete and a construction contract will be signed in early June with the same contractor that constructed the Pilot Village scheme.
- <u>Villages Layout</u>: The preparation of preliminary resettlement village and agricultural layouts for the VG2 villages is continuing by ESD personnel.
- <u>Water supply</u>: 32 temporary water tanks sets were designed, supplied and installed for northern villages, awaiting drilling of additional boreholes.
- Additional 24 sets of the same equipment have been ordered for installation in Ban Done and Ban Khone Khen. The delivery on site is expected for mid-June. Resettlers from northern villages have been provided with additional individual containers.
- A major contract for the drilling of 109 boreholes to cover the needs of the whole VG1, part of
  the VG2, health infrastructure and anticipated Project Lands impacted villages has been
  finalized and signed. The implementation has started since end of May and will be on-going for
  7 months until January 2007. An extension to this contract to complete the entire water
  supply construction programme is to be established in January 2007 for an estimate of 90
  more boreholes.
- A one year duration Frame Agreement has been established with the National Center for Environmental Health and Water Supply for the procurement of hand pumps. All required deep well Afridev hand pumps have now been ordered and their delivery is expected for September. In the meantime, 50 Tara hand pumps have been supplied and some installed as a transitional measure in the already completed boreholes.
- Electricity: The procurement of generating sets for the Group 1 resettlement villages is underway. The design of the resettlement village electrification systems is underway and complete at five villages.

Livelihood Plans:

Forestry:

- Since logging approvals by GoL in late January 2006, harvesting of 9,600 cu.m. of hardwood species and 7,400 cu.m. of softwood species have been harvested.2416 cu. m. were logged in May
- Nakai sawmill productivity is currently lower than expected; 2700 cu.m. were transported to Lak Sao, 600 of which have been returned sawn so far.
- Construction of the VFA sawmill yard is progressing satisfactorily.

#### Agriculture / Livestock:

- Transition resettlers are being provided with gardening tools and seeds and encouraged to household vegetable gardens on their household plots for home consumption and trade
- Transition resettlers are continuing to clear their new agricultural land in Pilot Village extension, Sop On, Phonsavang and Bouama.
- Pilot village and demonstration farm activities continue to be focused more on the villages to be resettled,

#### Downstream Program:

- DS consultants presented their findings to GOL mid-December, 2005. They made a detailed presentation to GOL and to IFI end of February and beginning May 2006. The report for the implementation study will be in draft final form for review in June and posted on NTPFC secured website.
- NTPC team continues to prepare twenty pilot villages with ongoing consultation for the finalization of the above study. Livelihood activities implementation has already started in one pilot Village.

#### **Environment:**

- The Water quality sampling is continuing with 27 parameters monitored at 11 surface water sites and 13 groundwater supplies.
- completion of activities for the baseline survey for fish and aquatic species in upstream and downstream rivers, review of the field report (May 22<sup>nd</sup>). Preliminary results show a general degradation of the habitats fish population on the XBF, since 1996, not linked with construction activities, but most likely to increased cattle raising (buffaloes).
- Review of the final report of the elephant programme submitted by WCS. There are delays in DNA analysis, preventing a full assessment of migration patterns. However, line transect and dung decay data provide a population estimate of 142 elephants (95% CI = 92, 207)

#### Monitoring:

- A monitoring framework is being developed covering internal, external and independent monitoring of all E&SD activities related to Nam Theun 2 Project. Based on this monitoring framework, a role for the IMA consistent with CA is developed with procurement suggestions for GOL to implement.
- In relation to resettlement monitoring, NTPC has procured the services of social and resettlement experts to work as a team to fulfil responsibilities related to internal monitoring of resettlement. In particular the socio economic surveying of resettlers focusing on revenue and living standards. Pre-wet season surveys design are under way now and discussions with independent agencies for training of DWG in survey methods also scheduled for March 06. Data entry will be outsourced to external company with strict QA/QC procedures in place so that data can be analyzed by the expert team of NTPC. In this context, the IMA will validate each step of the process. TORs are being reviewed to reflect this approach to monitoring of resettlement process as discussed with POE and IFIs during last mission in Jan/Feb 06.

# 1.1 Staffing NTPC, GOL (EMU, RMU, DWG) and Partners

# NTPC E&SD Staffing

#### Legend:

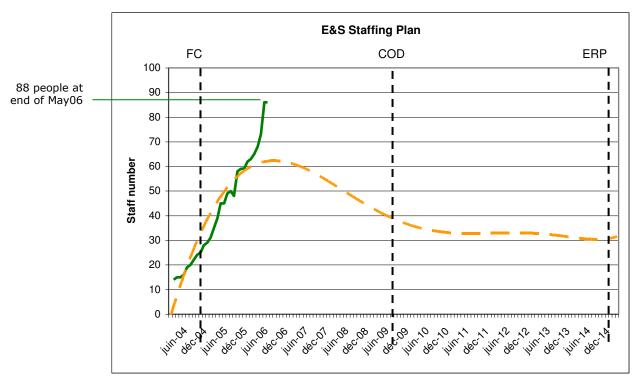
Scheduled staffing plan

Actual staff recruitment

FC = Financial Close

COD = Commercial Operation Date

ERP = End of Resettlement Period



New staff arrived in May: 1 E&S Deputy Director, and 1 Environmental Manager (the former Environmental Manager being still employed as a consultant)

In addition to NTPC staff, individual consultants are working full/part time with NTPC teams

The construction of the Nakai Residential Complex in Oudomsouk for use by the NTPC E&S team is on-going (complex of 54 rooms/studios/apartments and 6 villas).

# EMU Staffing

No change from previous report.

# o RMU and DWG Staffing

A new RMU manager has been appointed.

### Partners

No change from previous report.

## 1.2 Unanticipated Project Impacts

No change from previous report.

# 1.3 Additional Plans and PIP updating

o PIP / AIP

PIP/AIP are currently being reviewed as described in previous monthly report.

#### Additional Plans

Resettlement Actions Plans (RAPs):

- LPA 18/20a (Oudomsouk) RAP: posted on 17/11/05 on secured web site for IFI review, Update posted on 23/01/06
- LPA 33-38 (Gnommalat Plains) RAP: posted on 17/11/05 on secured web site for IFI review.
- All other RAPs will be finalized by 20<sup>th</sup> of June.

# 1.4 Grievance procedure

While grievance procedure is in place as per SDP and CA described process, a few complaints regarding compensation for project lands have been received via the HC which is not the agreed process with GOL. NTPC is investigating the specific nature of the complaints of course but also the reason why some villagers pass information regarding grievance to the contractors rather than then through the GOL.

#### 1.5 Communication

Past summary: Since Financial Close, the Project external relations have been smooth with a large number of international stakeholders VIPs visiting the site and reporting positively about the Project. NGOs campaigning activities have remained limited with the issuance of a couple of letters and press releases questioning the monitoring mechanisms in place, and few site visits and/or meeting with NTPC in Vientiane. Appropriate and timely responses have been made when necessary. Communications channels with the local population and authorities are well established with an adequate flow of information circulating. Occasional grievances are being addressed as required by NTPC obligations.

The Semi-Annual Public Progress Report has been released on NTPC public website on 20 February (as per CTA schedule 11). The report covers the period July to December 2005.

The annual stakeholder's forum has been hold in Thakhek on 17 and 18 May 2006, followed by numerous media coverage (national Lao press, international radio, etc....)

A French TV team visited the site on the 22<sup>nd</sup> and 23<sup>rd</sup> with NTPC and HC representatives (their 3 min. film was subsequently aired in June on the French national news, and international channels)

#### 1.6 Procurement

The amended NTSEP Project Agreement has been agreed upon by NTPC on May the 12th, 2006. Thanks to the amended NTSEP Project Agreement, and seamless communication with the World Bank procurement teams, most of the awaited NOLs have been provided.

However, the remaining NOLs are still to be issued:

- NOL for water supply and sanitation,
- NOL for UXO,
- NOL for electricity supply.

It is understood that these NOLs should be provided shortly enabling to speed up the spending of the NTSEP Grant.

In May, procurements have been mainly, but not only focusing on:

- launching the procurement process for the construction of the wooden houses for the resettled people of Group Village 2,
- launching the procurement process for the implementation of the downstream programme,
- launching the procurement process for the procurement of the Independent Monitoring on behalf of the GOL,
- launching the procurement process for the environmental programmes (elephants, terrestrial animals, wetlands...).

Page 10 /94

# **Social Activities**

Physical Cultural Resources, Project Lands, Camp Followers

# 2 Social Activities

# 2.1 Physical Cultural Resources, Project Lands, Camp Followers

## 2.1.1 Physical and Cultural Surveys & Salvage

#### **Summary Report**

In 2004 NTPC commissioned Earth Systems Australia to conduct a baseline PCR survey in the Project area. This baseline survey identified all items and sites of PCR significance that are located either within or adjacent to Land Parcel Areas. The survey also provided an impact assessment for each PCR site.

The Head Contract was notified of all PCR sites that were located both within and adjacent to LPA and were requested to provide impact assessment advice for those PCR located within LPA.

Based on the findings of the baseline survey and the impact assessment advice provided by the HC, the PCR items and sites were separated into four PCR plans for (i) movable PCR; (ii) PCR within construction areas; (iii) PCR within the Reservoir; and (iv) PCR along the Xe Bang Fai.

To date the Institute of Cultural Research has implemented the PCR plan for (i) movable PCR and (ii) PCR within construction areas. Implementation consisted of a series of consultations with PCR custodians. Potential impacts were discussed with the custodians then mitigation and compensation measures, that would help prevent any adverse impact, were identified and implemented.

The PCR plan for the reservoir is linked to social activities. Consultation with PCR custodians on the Nakai Plateau is now complete and a compensation measure has been identified for each PCR. Compensation activities will be initiated prior to the relocation of the villages.

The plan for PCR along the Xe Bang Fai is scheduled to be implemented in 2006-2007 in coordination with the downstream program. One historic site located on the banks of the Xe Bang Fai will require an archaeological salvage. A more detailed survey was conducted for the twelve temples located on the banks of the Xe Bang Fai between Mahaxai and the Road 13 bridge to prioritize monitoring effort and identify any requirement for bank protection.

In addition to those PCR that were identified during the baseline survey there is a potential for additional sites or items of PCR (chance find PCR) to be identified during construction activities. The Department of Museums and Archaeology (DMA) and the Institute of Cultural Research (IoCR) are providing ongoing technical assistance to NTPC to deal with these chance find PCR as and when they are discovered.

#### May 2006 Report

During the period of May 2006 the IoCR provided compensatory measures for the spirit sites of those villages entering transitional resettlement during the second and third quarter of 2006. A summary of activities are provided below:

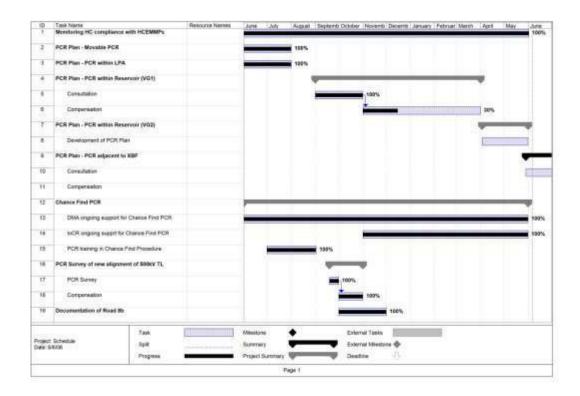
Village	PCR Site ID	PCR Type	Compensation Measure	Date
Sop On	PCR/IN/100/35	Spirit Site	Appeasement ceremony	1 June 2006
Sop Phene	PCR/IN/100/14	Spirit Site	Appeasement ceremony	8 May 2006
Done	PCR/IN/100/46 PCR/IN/100/47 PCR/IN/100/48	Spirit Site	Appeasement ceremony	11 May 2006
Hat Khamphene	PCR/IN/100/16 PCR/IN/100/17	Spirit Site	Appeasement ceremony	8 May 2006
Khone Khen	PCR/IN/100/41	Spirit Site	Appeasement ceremony	10 May 2006
Sop Ma	PCR/IN/100/19 PCR/IN/100/20	Spirit Site	Appeasement ceremony	4 May 2006

The compensation measures had been previously identified during consultations with the custodians which were undertaken in 2005 and early 2006.

On 30-31 May 2006, the IoCR conducted consultation and compensation measures at Ban Thalang for the HC disturbances to their spirit site located close to the Nam Theun sand quarry. ITD had provided a compensation for their activities in 2005. However, the custodians had requested another appearament ceremony for disturbances to their spirit site during 2006.

NTPC have conducted a more detailed survey of the twelve temple sites that were identified as being located along the Xe Bang Fai during the baseline PCR survey. This recent survey identifies the individual temple buildings and their location in relation to the banks of the Xe Bang Fai. The survey data shall be used to develop the PCR Plan for the Xe Bang Fai and help priorities those temples and temple buildings that require a management measure (protection, relocation, compensation, etc.).

#### **PCR Schedule:**





Appeasement ceremony for the spirit site at Sop Phene

Appeasement ceremony for the spirit site at Hat Khamphene





Appeasement ceremony for the spirit site at Sop Ma

# 2.1.2 Project Lands

Main events in May:

- Resettlement Action Plans (RAP): RAPs are being written with CARE, DWGs and NTPC team.
   RAP for Oudomsouk and Gnommalat plain was posted on November 2005.
   All RAPs will be finalized by 20<sup>th</sup> June 2006.
- <u>Transmission Line</u>: beginning of the procedure for Land Access and Provisional Compensation for LPA 57, in Savannakhet Province, with involvement of CARE Laos for PAPs identification.
- <u>Gnommalat / Downstream Channel</u>: Provisional Compensation for disposal area 5; relocation of 12 houses (inside the villages); Land allocation for 27 PAPs in Gnommalat, contracts between PAPs and District have been signed, UXO contracts negotiated
- <u>Livelihood restauration</u>: implementation of Rice improvement program started in May, for 148 PAPs, in Gnommalat (87) and Mahaxai (61); aquaculture programs (existing fishponds): 10 PAPs; NTFP: new sites prepared for nursery (1000 m2 at DAFO office in Gnommalat, 5000 seedlings, to be planted in June)
- <u>Gnommalat</u>: consultation on land reallocation (4 villages in Gn. District)

#### Baseline Studies

The collection of Baseline Study data is complete.

## Meetings & Consultations

NTPC/HC "Access to Land" coordination meetings continue to be held to coordinate activities and address specific land access issues. 2 meetings were held in May, focusing on (i) access to disposal areas, and (ii) safety issues for the channel (temporary bridges over the channel)

- Downstream Channel likely modifications required to Downstream Channel spoil/borrow areas, as a result of insufficient, suitable borrow material for construction; final report should be presented in July; and
- Transmission Lines consultations with the provincial and district representatives as well as villagers. About 100 assets were identified for relocation.

### Provisional Compensation

Provisional compensations were provided to 45 PAPs of LPA 38b (downstream Channel), for 126 000 000 kips

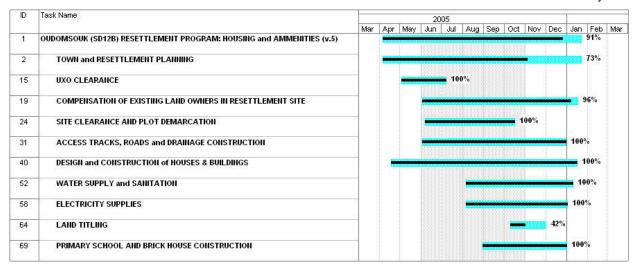
#### Resettlement Actions Plans (RAPs):

- RAP I LPA 18/20a (Oudomsouk): posted on 17/11/05 on secured web site for IFI review, Update posted on 23/01/06. Completed final confirmation of number of PAPs and the degree of impact. An update will be posted by June 06.
- RAP II LPA 33-38 (Gnommalat Plains): posted on 17/11/05 on secured web site for IFI review. Completed final confirmation of number of PAPs and the degree of impact. An update will be posted by June 06.
- RAP III LPA 33-38a (Downstream Channel): posted early May 2006.
- The data collection and consultations for all other RAPs (RAPs IV, V, VI) were completed in May, and all RAPs will be finalized by June 06.

#### **Oudomsouk Urban Planning Resettlement Action Plan:**

No significant activity in May

Simplified Schedule:



#### Livelihood restoration

The overall livelihood restoration options based on consultations with PAPs and communities were presented to the LTA team during their visit on 27<sup>th</sup> of March, as following:

- 1. Land development
- 2. Irrigation development
- 3. Rice production
- 4. Horticulture development
- 5. Livestock improvement
- 6. Non-timber forest products
- 7. Industrial crops/trees
- 8. Non-agriculture based options (wood processing, electricity and construction activities, tailoring, restaurant, food processing...)

The rice improvement program started in May, for 148 PAPs, in Gnommalat (87) and Mahaxai (61), out of the 160 farmers who participated at the training at Thasano Rice Research Station between March  $26^{th}$  and April  $4^{th}$ .

A land area of around 44 ha was identified near Gnommalat for redistribution to PAPs which have lost their entire productive land. The land allocation for the 27 PAPs was agreed and signed by all parties in May.

Aquaculture programs (existing fishponds): 10 PAPs participate in the improvement of their fish ponds, planning has been done, implementation will follow.

NTFPs: a new site was prepared for a fruit tree nursery (1000 m2 at DAFO office in Gnommalat, 5000 seedlings, to be planted in June); the contract for orchid development for commercial purpose (2 units for Nakai, 2 for Gnommalat and 2 for Mahaxai) was negotiated.

A meeting was held in Thakhek with MOA, Khammouane Province, PAFO, DAFO in May, to discuss the use of the downstream channel for large scale irrigation. It was explained that the potential for irrigation development is very limited, due to the operational schedule of the channel during the dry season (which may imply no flow periods of several weeks, not compatible with irrigation), and due to the design of the channel (simple gravity irrigation will not be feasible).

#### Handover of lands to Head Contractor

No Project Lands were required to be handed over to the HC under the Head Construction Contract (HCC) during the month of May 2006.

In the following Project Lands summary table, the following LPA has been removed from the previous month's list:

 LPA 38a-DT1a (Downstream Channel spoil disposal area DT1A) – the HC has confirmed that this spoil disposal site will no longer be utilized

	Project Land Parcel Area (LPA)	Proje	ect Land (	Category	PAP Impact	Earliest Date of Construction Access	RAP Preparation Date	Interim support (inc. replacement housing, if	RAP Implementation completed
LPA No.	Name/Description	PCA	Cat. 1	Cat. 2		Contractual		required)	
Group 1	Phou Pha Phen Quarry	Υ	Υ		medium		16-Feb-06	From 2-Jun-05	16-Nov-06
1b	Phou Pha Phen Quarry access rd.	Y		Y	none	16-May-05	N/A	N/A	N/A
3	Road 8b (Phou Pha Phen rd B. Phonsa-At) Road 8b (B. Lak Sao - Phou Pha Phen rd.)	Y		Y	none		N/A	N/A	N/A
Group 2		1							
4 4a	Temp. dam site access (from B. Nam Nian)  Nam Nian Quarry	Υ	Y	Υ	none	16-May-05 N/A (new area)			
5a	Nakai Dam site	Υ	Υ		none		N/A	N/A	N/A
5b 5c	Nakai Dam quarry (sand source)  Nakai Dam quarry (sandstone)		Y		none				
5d	Nakai Dam quarry (sand source)		Y		none	16-May-05			
6a 6b	Temp. Dam Site access (from B. Phonsa-At) Perm. Dam Site access (from B. Phonsa-At)	Υ	Y	Y	low		16-Feb-06	From 2-Jun-05	31-Dec-06
7	Road 8b (B. Phonsa-At - B. Nam Nian)	Υ		Υ	none		N/A	N/A	N/A
Group 3	New Road 8b (B. Nam Nian - B. Thalang)		V			l e	l e e e e e e e e e e e e e e e e e e e	ı	
9	Road 8b (B. Nam Nian - B. Thalang)	Υ	Ť	Υ	none	16-May-05	N/A	N/A	N/A
Group 4									
10a 10b	Ban Thalang Camp & Bridges  New Road 8b (B. Thalang - B. Oudomsouk)	Y	Y	Y	low	16-May-05	16-Feb-06	From 8-Jun-05 From 24-Jul-05	31-Dec-06
10b-AR1	Access road to new Road 8b			Υ	none	N/A (new area)			
10b-AR2 10b-AR3 (11b)	Access road to new Road 8b Access road to new Road 8b			Y	none				
10b-AR4 (11a)	Access road to new Road 8b			Y	none	16-May-05	N/A	N/A	N/A
10b-CA1 12	Construction camp (for new Road 8b)  Road 8b (B. Thalang - B. Oudomsouk)	Υ	Υ	Y	none	N/A (new area) 16-May-05			
Group 5									
13	Access to Saddle Dams 13A, 14A & 15B		Y		none	01-Nov-05	N/A	N/A	N/A
14 15	Saddle Dam 13A & 15B Saddle Dam 14A		Y		none	U1-NOV-U5	N/A	N/A	IN/A
Group 6									
16	Road 8b (Oudomsouk) Saddle Dam 12B		Y	Y	low high	16-May-05 16-Dec-05	16-Feb-06 15-Jun-05	N/A N/A	31-Dec-06 31-Dec-06
20a	Intake Structure & Saddle Dam 4A		Y	·	medium	10 000 00	15 0411 05	From 8-Jun-05	01 500 00
20b 26a	Nakai Town Camp Headrace Channel		Y		low	16-May-05		From 20-Jul-05	
26a-SD1	Headrace Channel Spoil Disposal Area 1		Y		low			F10111 20-3u1-03	
26a-SD2	Headrace Channel Spoil Disposal Area 2		Y		low		16-Feb-06		31-Dec-06
26a-SD3 26a-SD4	Headrace Channel Spoil Disposal Area 3 Headrace Channel Spoil Disposal Area 4		Y		low	N/A (		From 16-May-05	
26a-SD4-AR1	Access Road (to Spoil Disposal Area 4)		V/	Υ	none	N/A (new area)			
26a-SD5 26a-SD6	Headrace Channel Spoil Disposal Area 5 Headrace Channel Spoil Disposal Area 6		Y		low				
26a-BR1	Headrace Channel Borrow Area No. 1		Υ		none		N/A	N/A	N/A
Group 7									
Group 7	New Road and Saddle Dams 54 6B & 74		٧	V	low	l	16-Feb-06	From 1-Nov-05	01-May-07
21a 21b	New Road and Saddle Dams 5A, 6B & 7A New Road and Saddle Dams 8A & 9A		Y	Y	low none		16-Feb-06	From 1-Nov-05	01-May-07
21a 21b 22	New Road and Saddle Dams 8A & 9A Saddle Dam 10A		Y	Y	none none	01-Nov-05	16-Feb-06 N/A	From 1-Nov-05	01-May-07 <b>N/A</b>
21a 21b	New Road and Saddle Dams 8A & 9A		Y	Y	none	01-Nov-05			
21a 21b 22 23 24 Group 8	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A		Y Y Y		none none none none	01-Nov-05			
21a 21b 22 23 24	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A	Y	Y		none none none	01-Nov-05 16-May-05			
21a 21b 22 23 24 <b>Group 8</b>	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A Surge Shaft access (from Nakai Plateau)		Y Y Y		none none none none		N/A	N/A	N/A
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b>	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)	Υ	Y		none none none none none none none none		N/A N/A	N/A N/A	N/A N/A
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b> 30 31	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area	Υ	Y Y Y Y Y Y Y		none none none none none		N/A N/A 16-Feb-06	N/A N/A From 30-May-05	N/A N/A 16-Nov-06
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b> 30 31 32	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access	Υ	Y Y Y Y		none none none none none low	16-May-05	N/A N/A	N/A N/A	N/A N/A
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b> 30 31	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area	Υ	Y Y Y Y Y Y Y		none none none none none low none	16-May-05	N/A N/A 16-Feb-06	N/A N/A From 30-May-05	N/A N/A 16-Nov-06
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b> 30 31 32 <b>Group 10</b>	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc.	Y	Y Y Y Y Y Y Y		none none none none none none none none	16-May-05 16-May-05 01-Jun-06	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05	N/A  N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11
21a 21b 22 23 24 <b>Group 8</b> 27 28 29 <b>Group 9</b> 30 31 32 <b>Group 10</b>	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace	Y	Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05 16-May-05 01-Jun-06 01-Oct-05	N/A  N/A  16-Feb-06  N/A	N/A  N/A  From 30-May-05 N/A  From 31-May-05	N/A  N/A  16-Nov-06  N/A  16-Nov-06/16-May-10
21a 21b 22 22 23 24 27 28 29 Group 9 30 31 32 Group 10 33 34 35	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat)	Y	Y Y Y Y Y Y Y Y	Y	none none none none none none low none low high high	16-May-05 16-May-05 01-Jun-06	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06	N/A  N/A  From 30-May-05 N/A  From 31-May-05 From 1-Jun-05 From 1-Oct-05	N/A  N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10
21a 21b 22 22 23 24 Group 8 27 28 29 30 31 32 Group 10 33 34 35 36	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Dam Residence Nam Theun	Y	Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05 16-May-05 01-Jun-06 01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  16-Feb-06  16-Feb-06	N/A  N/A  From 30-May-05 N/A  From 1-Jun-05 From 1-Oct-05 From 2-Jun-05	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1	Y	Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05 16-May-05 01-Jun-06 01-Oct-05 16-May-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  16-Feb-06  16-Feb-06	N/A  N/A  From 30-May-05 N/A  From 1-Jun-05 From 1-Oct-05 From 2-Jun-05	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10
21a 21b 22 22 23 24 Group 8 27 28 29 30 31 32 Group 10 33 34 35 36 37 38a	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A Access Road to Saddle Dams 10A & 11A Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2	Y	Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT3	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel – Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT3	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05 16-May-05 01-Jun-06 01-Oct-05 16-May-05 01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  16-Feb-06  16-Feb-06	N/A  N/A  From 30-May-05 N/A  From 1-Jun-05 From 1-Oct-05 From 2-Jun-05	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT4 38a-DT4 38a-DT4	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel – Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT4 Spoil Disposal Area DT5	Y	Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 30 31 31 32 Group 10 33 34 35 36 37 38a 38a 38a 38a 38a 38a 37 38a	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Pomd, etc. Regulating Dam Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT3 Spoil Disposal Area DT4 Spoil Disposal Area DT5 Access Road Access Road	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05  N/A (new area)	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT4 38a-DT3 38a-AR3 38a-AR3 38a-AR3	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A Access Road to Saddle Dams 10A & 11A Surge Shaft access (from Nakai Plateau) Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT3 Spoil Disposal Area DT3 Spoil Disposal Area DT5 Access Road	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none low none low high high medium none low high high medium low medium low	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT4 38a-DT3 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR3 Group 11	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel – Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT4 Spoil Disposal Area DT4 Spoil Disposal Area DT5 Access Road Access Road Access Road Access Road Access Road	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05  N/A (new area)	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT4 38a-DT3 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR3 38a-AR3 38a-BR3	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT4 Spoil Disposal Area DT5 Access Road Access Road Access Road Downstream Channel - Nam Gnom to Road 12	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  16-May-05  01-Jun-06  01-Oct-05  16-May-05  01-Oct-05  01-Oct-05  N/A (new area)  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT4 38a-DT3 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR3 Group 11	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel – Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT4 Spoil Disposal Area DT4 Spoil Disposal Area DT5 Access Road Access Road Access Road Access Road Access Road	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05  N/A (new area)	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 23 24 Group 8 27 28 29 Group 9 30 31 32 Group 10 33 34 35 36 37 38a 38a-DT1 38a-DT2 38a-DT3 38a-DT3 38a-DT3 38a-DT3 38a-DT3 38a-DT4 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR1 38a-AR3 38a-DT3 38a-DT4 38a-DT5 38a-DT5 38a-DT3 38a-DT3 38a-DT4 38a-DT5 38a-DT3 38a-DT3 38a-DT4 38a-DT5 38a-DT3 38a-DT3 38a-DT4 38a-DT5 38a-DT3	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel – Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT5 Access Road Access Road Access Road Downstream Channel – Nam Gnom to Road 12 Spoil Disposal Area DT5 Access Road Access Road Downstream Channel – Nam Gnom to Road 12 Spoil Disposal Area DT5 Spoil Disposal Area DT6 Spoil Disposal Area DT6 Spoil Disposal Area DT7 Spoil Disposal Area DT7 Spoil Disposal Area DT7	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  16-May-05  01-Jun-06  01-Oct-05  16-May-05  01-Oct-05  01-Oct-05  N/A (new area)  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
21a 21b 22 22 23 24 Group 8 27 28 29 30 31 31 32 Group 10 33 34 35 36 37 38a 38a DT1 38a-DT2 38a-DT3 38a-DT4 38a-AR1 38a-AR3 38a-AR3 Group 11 38b-DT6 38b-DT6 38b-DT6 38b-DT6	New Road and Saddle Dams 8A & 9A Saddle Dam 10A Saddle Dam 11A Access Road to Saddle Dams 10A & 11A  Surge Shaft access (from Nakai Plateau) Surge Shaft Surge Shaft access (from Road 8b)  Headrace Tunnel Access Portal & access Headrace Tunnel Access Portal spoil area Road 8b (Oudomsouk - Power Station)  NT2 Power Station, Switchyards & Tailrace Regulating Pond, etc. Regulating Dam Residence Nam Theun Road 8b (Regulating Dam - Gnommalat) Downstream Channel - Regulating Dam to Nam Gnom Spoil Disposal Area DT1 Spoil Disposal Area DT2 Spoil Disposal Area DT3 Spoil Disposal Area DT5 Access Road Access Road Access Road Downstream Channel - Nam Gnom to Road 12 Spoil Disposal Area DT5 Access Road Access Road Downstream Channel - Nam Gnom to Road 12 Spoil Disposal Area DT6 Spoil Disposal Area DT7	Y	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y	Y	none none none none none none none none	16-May-05  16-May-05  01-Jun-06  01-Oct-05  01-Oct-05  01-Oct-05  N/A (new area)  01-Oct-05	N/A  N/A  16-Feb-06  N/A  16-Feb-06  01-May-06  16-Feb-06  16-Feb-06  N/A	N/A  N/A  From 30-May-05  N/A  From 31-May-05  From 1-Jun-05  From 1-Oct-05  From 2-Jun-05  N/A	N/A  16-Nov-06  N/A  16-Nov-06/16-May-10 1-Dec-07/1-Jun-11 1-Apr-07/1-Oct-10 16-Nov-06/16-May-10  N/A
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Group 12									
38c	Downstream Channel – Road 12 to Downstream Channel Tunnel		Υ	Υ	low	01-Oct-05			
38c-DT12D	Spoil Disposal Area DT12D		Υ		low	01-Oct-05	16-Feb-06		01-Apr-07
38c-DT14	Spoil Disposal Area DT14		Υ		low	01-001-05		From 1-Oct-05	
38c-DT15	Spoil Disposal Area DT15		Υ		low	01-Oct-05			
38c-DT16	Spoil Disposal Area DT16		Y		low	01-Oct-05			
38c-AR1 (44)	Access Road		Υ		low	01-Oct-05			
42	Phou Phatoung Quarry & access	Υ	Υ		medium	16-May-05	16-Feb-06	From 27-May-05	16-Nov-06/16-May-10
Group 13									
38d	Downstream Channel (Tunnel - XBF)		Υ	Υ	low	01-Oct-05			
38d-DT17A	Spoil Disposal Area DT17A		Υ		low				
38d-DT17B	Spoil Disposal Area DT17B		Υ		low				
38d-DT17C	Spoil Disposal Area DT17C		Υ		low		5 16-Feb-06	06 From 1-Oct-05	01-Apr-07
38d-DT17D	Spoil Disposal Area DT17D		Υ		low				
38d-DT18A	Spoil Disposal Area DT18A		Υ		low	01-Oct-05			
38d-DT18B	Spoil Disposal Area DT18B		Υ		low				
38d-DT19A	Spoil Disposal Area DT19A		Υ		low				
38d-DT19B	Spoil Disposal Area DT19B		Υ		low				
38d-DT20	Spoil Disposal Area DT20		Υ		low				
38d-AR1 (46/47)	Access Road			Υ	low	01-Oct-05			
38d-AR2	Access Road			Υ	low	N/A (new area)			
38d-AR3 (49a)	Access Road			Υ	low	01-Oct-05			
48	Construction camp (north of Mahaxai Road)		Υ		none		N/A	N/A	N/A
51	Road 8b (Gnommalat - Road 12)			Y	low	16-May-05			
56	Road 12 (Road 8b - Xe Bang Fai Access)			Υ	low	10-May-03	16-Feb-06	From 1-Oct-05	16-Aug-07
57	Road 12 (Xe Bang Fai Access - Thakhek)			Υ	low				
Group 14									
52	115 & 500 kV Transmission Lines (parallel)		Υ	Υ	high	01-May-06	01-Apr-06	From 1-May-06	01-Nov-07
53	115 kV Transmission Line		Υ	Υ	low	U1-IVIAY-U6	01-Apr-06	Fioni i-May-06	01-1100-07
54	500 kV Transmission Line		Υ	Υ	high	01-Jul-06	01-Jun-06	From 1-Jul-06	01-Jan-08
54-CA1	Ban Nadeng Construction Camp (for 500 kV)		Υ		none	N/A (new area)	N/A	N/A	N/A
55	Access to 500 kV Transmission Lines			Υ	none	01-May-06	N/A	N/A	N/A

#### Notes:

- 1. GREY shaded LPA: indicates that the design of infrastructure has not been completed to a stage where the extent of the final Construction Area can be ascertained with certainty
- 2. YELLOW shaded cells: NTPC has approved conditional access from 1-Oct-05 as the HC has indicated there may be small modifications to parts of the Construction Area boundary resulting from additional Detailed Design work. The HC is to provide NTPC with confirmation of the final land area requirement before works commence in the concerned areas.
- 3. RED shaded text: indicates a new LPA.
- 4. Where LPA numbers have been modified from those assigned during the Baseline Study phase, the equivalent Baseline Study LPA number is shown in brackets.
- 5. Dates or items in bold indicate completed tasks or non-applicable items.

# 2.1.3 Camp Followers

The situation of camp followers remains well monitored.

The District Authorities sent their staff to collect information about the workers and instructed on how to participate to general election on 30/04/2004. For reminding, the regulation on management of workers no.0832/G.KM (24 Nov.2004) in Lao as well as in English has been distributed and affixed to NTPC Offices ,Camps and District Offices .

 Population Management: Monitoring of labor and population movement:

This activity is placed under direct control of RMU since January 2006.

Human Trafficking Control

This activity is placed under direct control of RMU since January 2006.

# Infrastructure Development

Infrastructure					
Water supply to Camp Followers area	Received the first DCC (District				
Sanitation facilities to Camp Followers area	Chief of Cabinet) Notification on waste management dated 20/12/05 for Gnommalat town,				
Waste Management	camps and shops along the road.				

Were checked: the waste disposal area for Nakai Town, the Chinese camp in the area of 0.5ha, near NTPC Nakai complex area, and the removal of Gnommalat fresh market in front of the main camp, along road12, to 500m far away.

SMC of Gnommalat has sent the task force staff to disseminate the District Notifications; on population management, on business services, and on waste management along road12 and 8b (Nongping-Thamphoung-Thangbeng-Donepeuy areas) with more than 50 participants. At the same time, one team has checked the amount of waste dropped per day in those two areas.

#### Public Health

#### **Hygiene:**

Issues concerning the impact of camp followers on the local population were studied and discussed in Nakai and Gnommalat district health offices. Detailed plans are described in the report.

Food Hygiene: Following measures have been implemented to keep a check on the minimum standards to be maintained in all the eating places. Following points detail the plans:

- All eating places are required to be registered with the local government, either with the district health office or the local government offices. Hence each eating place has to display a registration certificate in the restaurant.
- Regular visits are made by health officers to check the hygiene standards of the restaurants.
- At present it is not clear if these restaurants are run by the local people or people are coming from outside. Information is being collected to establish this and will be regularly updated to monitor the increase in the local population.
- Water supply to these establishments is through the shallow wells. The water in wells is not likely to be fit for washing purposes and requires testing and regular treatment. Methods to deal with this problem are being explored.
- Washing of hands in eating places is unhygienic and instead of a common basin for all to wash hand in, a receptacle with a tap is being organized in each restaurant so that washing of hands before eating becomes meaningful and effective. (see photos below- Vietnamese restaurant at Nakai)

Shallow well water testing was carried out in Nakai during November. Results are encouraging only two samples of the 5 tested showed low levels of contamination.

## Water Quality monitoring of domestic water supply:

#### Summary Report

Under the Camp Followers Health Program, the WQMAP is monitoring faecal coliform contamination in domestic water supply of restaurants in Nakai and Gnommalat District. Elevated levels of faecal coliform are indicators for the pathogen load and contamination from human or animal faeces.

Analysis conducted in November and December 2005 indicates that there is marked spatial variation in the faecal coliform contamination between Nakai and Gnommalat Districts, with restaurants in Gnommalat District having a greater faecal coliform load. It is too early to draw any firm conclusions but the reason for this difference is likely to be greater population densities in the Gnommalat area.

The WQMAP will continue to conduct faecal coliform analysis at five restaurants in Nakai District and ten restaurants in Gnommalat District on a seasonal basis to assess whether activities under the Camp Followers Health Program are contributing to improvements in the quality of domestic water supply.

On the 25 March 2006 the WQMAP conducted faecal coliform analysis of the domestic water supply for five restaurants in Nakai District and ten restaurants Gnommalat District.

With the exception of PH5, the faecal coliform level exceeded the Lao standard for drinking water at all other restaurants. The elevated faecal coliform levels recorded in these restaurants indicate a high pathogen load which could pose a risk to human health. These restaurants that exceed the Lao standard should continue to avoid direct consumption of the water or to boil the water prior to washing vegetables and cooking pots.

			Wat	er Use			
Site No.	Groundwater Supply	Drinking	Cooking	Washing Veg	Washing pots	Faecal Coliform (FC/100 ml)	Lao WQ Targets for Drinking Water
	Nakai District						
PH1	Lined, covered well	Χ	Χ	$\checkmark$	$\checkmark$	11	
PH2	Lined, covered well	Χ	Χ	$\checkmark$	$\checkmark$	21	
PH3	Unlined, semi-covered well	X	X	$\checkmark$	$\checkmark$	34	
PH4	Unlined, uncovered well		Χ	$\checkmark$	$\checkmark$	2	
PH5	Unlined, uncovered well	Χ	$\checkmark$	$\checkmark$	$\checkmark$	0	
	Gnommalat District						
PH6	Unlined, uncovered well in a rice paddy surrounded by standing water and animal excreta. ~ 3m deep.	Х	х	$\checkmark$	$\checkmark$	>200	
PH7	Unlined, covered well. ~5m deep.	Х	Х	Χ	√	3	0
PH8	Lined, covered well. ~10m deep.	Х	Х	√	√	16	
PH9	Nam Gnom	Х	Х	Χ	√	15	
PH10	GW from Tham Phouang cave ~200m behind restaurant.		Х	<b>√</b>	√	6	
PH11	Lined, semi-covered well. ~9m deep.		Х	√	√	9	
PH12	Lined PVC Pipe for pumping GW. ~6m deep.		Х	√	√	32	
PH13	Unlined, uncovered well. ~6m deep.	Х	Х	√	√	9	
PH14	Unlined, uncovered well.~7m deep	Х	Х	$\checkmark$	$\checkmark$	21	
PH15	Lined, covered well. ~10m deep.	Х	Х	√	√	4	

This has been indicated to the district authorities and measures to stop using this water for washing vegetables and other food items that can be consumed raw and for washing hands and dishes.

It is a difficult measure and may not be adhered to by restaurants. Chlorination of stored water is the other alternative.

This problem will be closely monitored and measures taken to save public from the dangers of consuming contaminated raw foods.

Figure: Locations of Groundwater Quality Sampling Stations for the Public Health Program, Nakai District



#### STIs and its control:

Issues concerning the impact of camp followers on the local population were studied and discussed in Nakai and Gnommalat district health offices. Detailed plans are described in the report

Measures required to monitor and control STIs in the NTPC project are listed below:

- All bars are registered under local government rules.
- The number of service women working in these bars are also monitored by District Committee for Control of AIDS (DCCA)
- Regular health awareness and education programs are organized for the service women and general public, promoting protection against STIs by using condoms.
- Education programs for workers are also organized by HCC under Project Staff Health Plan.

Opportunities like boat race festivals, World AIDS Day and other public events are being used to increase public awareness of the STIs and how it can be prevented.

# Traffic Safety and Regulations

#### **Development of regulations / Review and strengthening of regulations:**

In May, Contract for the construction of 4 Police Check point (Khamkeut, Mahaxai, Gnommalat (2)) was approved, contractor is being selected.

Promotion and support to issue the <u>District Governor notification</u> on Traffic safety for the 4 Districts (Jan – March 2005).

Distribution of Ministry Announcement on Road accident prevention in 4 Districts (July 2005).

An additional Gnommalat District Governor Notice on road safety issued by no.748/G.Gn on 17/08/05, with more focus on pedestrians, cyclists, motorcycles, hand-tractors, and animals.

The meeting in Gnommalat on 9/11/05 with Health Team suggested the organization of a joint working group to oversee the results of last WS and to supervise the on-going works such as: road accidents data collection, the emergency response, the awareness for schools and villages , the police check posts, the proposal of the Provincial Governor in extending the training at district level, the obstacle removal along the road during the construction and the related compensation...

Promotion and Support to issue the <u>instruction of the RC</u> on social order Management and small trade during NT2 project construction period (No.0848/PG-KM dated on 6/12/2004), followed by KM provincial notification No. 832 dated on 24/11/2004 and District Governor Notification for Mahaxai, Gnommalat, Nakai, Khamkheut and Xaibouli. The District Authority continues to enforce exit of subcontractors and shops from Sangkeo area.

On 19 January 2006, the R.S sub-committee meeting in THK has focused on the following immediate actions:

- strengthening the control check posts and check points with the capability to strictly enforce
  the regulations, establish the appropriate communication system between check points and
  more awareness training at all levels. Close collaboration with HC for drivers' good conduct,
  the reduction of dust problem and more visible signs at the construction areas.
- close and regular supervision and site inspection by the PCC

In addition to the road safety training program for schools and villages, every District has issued an additional Notice on traffic safety management, especially in the NT2 Project area. Due to the heavy traffic and the work load along the Downstream Channel during this dry season, militia of B. Sangkeo, equipped with security clothes and bicycle, as a security Guard, will circulate along the channel in preventing the risk of accidents which will be occurred during day-time.

#### **Road Safety:**

Public Consultation on traffic safety in the villages and schools along the roads serving NT2 project (Feb –March 2005: 23 schools (3108 participants) and 35 villages (3890 participants)).

The Department of roads provided 352 erected road signs (traffic roads, villages, schools) along the roads to NT2 project in 4 Districts of Mahaxai, Gnommalat, Nakai and Khamkeut in March and April 2005 (support by NTPC).

Workshop on road safety has been held in Thakhek chaired by Provincial Governor, on 19/08/05 (60 participants from contractors, GOL, NTPC and HC). The outcome will be the future proposed action plan on road safety. Khammouane governor has nominated the committee by the decision no 1038/GOKM dated 12/12/05 concerning the road safety related to NT2 project. On 15/12/2005, join follow up meeting in Thakhek with NTPC, HC and GoL to supervise each party to draft the future action plan submitted to the Committee on 29/12/05.

Mahaxai disseminated the traffic regulation to nine villages (70 participants) and three schools (291 students) in addition with drug abuse problems. The strict control of the traffic along the road 12 found around 90 means of transportation, from motorbikes to the big trucks not conformed to the regulation. Gnommalat/Nakai and Khamkeut sent also the weekly report informing the strict control and considering the situation for this month as normal.

Received regularly report from the police control check post, this mentioned on warning Dam truck and cars over speed.

The awareness and education training program for 35 schools and 26 villages along the roads serving NT2 Project will be operated in February 2006.

Road safety training of trainers (T.O.T) at District level and social security have been monitored in Mahaxai, Gnommalat, Nakai, and Khamkeut on 20 April 2006. The training at villages and schools was finished in May, and repetition of this training is planned for Oct.-Nov.

Social Security and capacity building for local agencies

#### Support and technical assistance for District Police Offices:

In March 2005, NTPC supplied equipment for 4 <u>police control posts</u> (Mahaxai, Gnommalat, Nakai and Khamkeut). In June 2005, establishment of the police control check post at Nam Nian. NTPC

supports the permanency of 3 check posts (Nam Nian, Nakai, and Sangkeo). The design and related technical specifications of the new check posts at Sangkeo and Nakai are ready for bidding.

Appointment of <u>SMC secretariat</u> from Khamkeut, Nakai, Gnommalat and Mahaxai. NTPC promote the SMC regular control accordingly to the District social management Notification. SMC Secretariat of Gnommalat has conducted a public consultation on regulations/notices, fixed-up the zoning signs and monitored the service providers. NTPC promoted the SMC Secretariat to organize monthly meetings to oversee and to supervise the camp follower management in four districts (Khamkeut, Nakai, Gnommalat and Mahaxai). Hand over 5 motorbikes one for SMC secretariat in Gnommalat and four for police women in four districts. On 1/02/06 NTPC team went to Khamkeut to consult with District Authority about the accommodation needed for nine policemen to be provided by the HC and checked the new check post site to be built at Ban Phonsaat on the permanent access road to Dam Site;

Support to promote the organization of <u>District Grievance Committee</u> (DGC), the organization of VGC, VCC and improvement of village regulation in 7 villages nearest to the camps.

Gnommalat District Authority completed the moving out shops and sub-contractors 500 meters far from camp 36, and rearranged shops and sub-contractors along the road 12 to move back 25 meters the centerline, and not permitted to build shops and houses on the left side of the road 12 and 8b conformably to the district Governor order, the Highway and the Town Planning Law. The militias of the villages nearby the camps conducted the regular control to close the shops at 22:PM.

<u>Establish Intersectoral Task Force on Population management and security:</u> Task force for each district has been organized.

Nakai/Gnommalat and Mahaxai concentrated on removal the obstacles along the roads. Gnommalat also searched for on how to move fresh morning market in front of the camp , along the road 12,1km far away. The District Authority initiated the waste disposal management by issuing the notice on how to collect, dispose and manage the waste from the households and along the road.

The SMC's Organizational Chart of seven Districts was also taken into consideration aiming to review and to readjust in order to fit with the new working procedure of RMU and can extend some activities down to the downstream areas.

Page 23 /94

# **Social Activities**

**Health Programs** 

# 2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during May 2006:

#### Upgrading health infrastructure:

- The rehabilitation works of Kendaeng, Nadou, Mahaxai and Nakai Health Center and District Hospital have started on 19 May 06. Expected completion on 2 July 06.
- The site clearing of Gnommalat Hospital and transformer installation are complete. The construction works contract for the hospital has been signed on 22 May. The construction works have been postponed until next dry season (October 2006)
- Laksao roof renovation works are in progress and completion expected by end of June 06.
- The bidding process for the 2 health centers in Gnommalat district has been launched, bid opening is planned for 9 June 06 and the start of construction works is planned for the next dry season.
- The bidding process for the 2 health centers in the resettlement areas for Ban Done and Nong Boua Kham will start jointly with the other community buildings.

#### **Equipment:**

- One ambulance has arrived in Vientiane waiting for customs clearance. The second ambulance is on order.
- Bed nets for Malaria control program have arrived and been distributed to districts as follows:

0	Mahaxai District	2875
0	GMLT District	3011
0	Nakai District	3234
0	Khamkeut District	2364

#### Training, capacity building:

- Seven TBA training courses were conducted in four districts. TBA kits were also distributed with the modified instruction sheets. Total of 96 TBAs were trained of which 94 were women.
- Six peer educator trainers from four districts participated in five-day TOT for peer education conducted by the LYAP in Vientiane Province on 15-19 May 2006.
- Three-day STI training including laboratory services was conducted in Khamkeut District Hospital by Khammouane PH staff on 22-24 May 2006.
- Emergency referral training meeting is being followed up.
- Essential Obstetric Care training meeting is being followed up.
- Two health workers from Nakai District after completion of training are working with resettled population along with RMU District Facilitator.
- Monthly meetings at districts and the province were held on 2-4 May 2006.

#### Supervision:

- Routine supervision of the health center staff's activities was conducted during the month
- Maintained the updates of the Public Health section of the NTPC website.

#### Surveillance and Monitoring:

- Comments on draft report from POE are being prepared.
- Participated in Annual Stakeholders Forum on 17<sup>th</sup> May 2006.

#### Resettlement Program:

- The health checks and survey for eight households remains to be analyzed. (Delayed due to late arrival of SPSS software).
- The working relations of HPMU and RMU are being implemented. Some concerns to persuade facilitators to carry out the identified functions.
- The village health volunteers in new settlements were reviewed for full coverage.
- Monthly MCH clinic for Nongboua village is being planned and will be held on 1<sup>st</sup> June 06. The
  clinic will be conducted at monthly intervals in the village by ICHC staff, VHVs and DCD team.
  This model will be replicated in all resettlement areas.

#### Abbreviations used in this section:

DCD District Community Development

DH District Hospital
DHO District Health Office

HC Health Center

HPMD Health Properties Management Division ICHC Integrated Community Health Center

MCH Maternal and Child Health

MOH Ministry of Health

ORPP Outbreak Response Preparedness Plan

PH Provincial Hospital
PHO Provincial Health Office

HPMU Health Program Management Unit UNPFA United Nations Population Fund VHC Village Health Committee VHV Village Health Volunteers WHO World Health Organization

# o Upgrading Public Health infrastructure / equipment / vehicles

Task	Progress to end of la	· · · · · · · · · · · · · · · · · · ·			
Construction / Rehabilitation	n / Infrastructure maintenance				
<ul> <li>Construction of 2 HC (in Ban Done, and in Ban Nong Boua Kham).</li> <li>Construction of staff house HC (3 staff houses per HC)</li> <li>Rehabilitation of District Hospital / District Health Office in Oudomsouk (Resettlement Program)</li> </ul>	The drawings and BoQ prepared by the HPMD of the MoH have been approved and bidding procedures have commenced.	Bidding for Nakai DH rehabilitation is complete, contract has been signed and construction works are on-going.			
<ul> <li>Gnommalat District:         <ul> <li>Construction of new District Hospital</li> </ul> </li> <li>Construction of Khedphit Health Centre</li> <li>Construction of Nasok Health Centre</li> </ul>	The drawings and BoQ prepared by the HPMD of the MoH have been approved and bidding procedures have commenced.	The contract for new Gnommalat DH has been signed and construction works will start next dry season.  Bidding for HCs is ongoing, the contract will be signed next month and construction works will start next dry season.			
Mahaxai District:  Rehabilitation of Mahaxai District Hospital Rehabilitation of District Health Office Rehabilitation of Nadou Health Centre		The contract for Mahaxai DHO has been signed and construction works are ongoing.  The contract of Nadou HC has been signed and construction works are on-going.			
Khamkeut District :  Rehabilitation of Khamkeut District Hospital (in Laksao)  Rehabilitation of Kaengdeng Health Center	Rehabilitation of Khamkeut District Hospital's roof with a co-funding from NTPC and the Lao- Luxemburg Integrated Rural Development Project.	The construction works are ongoing.  The construction works are ongoing.			
Khammouane Province:  • Rehabilitation of Emergency Department of Thakhek Provincial Hospital	Completed in Septer	nber 2005			

Medical and non-med	Medical and non-medical equipment / Vehicles						
Medical and laboratory equipment, package of furniture for HCs and DHs and Emergency Department of Thakhek hospital	ICB bidding (for Medical equipment, hospital furniture, hospital utensil and surgical instrument sets) opened on 25 <sup>th</sup> November 2005. Contract signed. Lot II (part of the medical equipment) arrived and distributed	Arrival of Lot I, III and IV are awaited					
Non-medical equipment (office equipment, hygiene, clock, furniture) for HC/DH /DHO	Office equipment (except computers) distributed to 4 DHOs and Khammouane PHO. Computers and printers have been distributed in March 2006 followed by computer training for DHO staff.  Bed mattress distributed in Khamkeut DH.	Waiting for completion of construction work					
Vector Control measures / equipment	Bed nets procured end of February.  Supatab (tablet for bednet impregnation) has been sent to DWGs.  Bed nets for Malaria control program have arrived and been distributed to districts as follows:  Mahaxai District 2875  GMLT District 3011  Nakai District 3234  Khamkeut District 2364						
Vehicles	12 motorbikes distributed to HCs in Sept. 05 and to DHOs in Nov 05.  4 Nissan Pick-up were handed over: one per DHO (Nakai, Gnommalat, Mahaxai) and one for PHO in April 06.  Vehicles provided as following:  - Resettlement Health Program:  1 Ambulance (Nakai DH)  1 Vehicle (Nakai DHO)  2 Motor Bikes (Nakai DHO)  2 Motor Bikes (HCs)  - Regional Health Program:  3 Ambulances (Gnommalat DH, Khamkheut DH, Thakhek PH)  3 Vehicles (Gnommalat DHO, Mahaxai DHO, Khammouane PHO)  4 Motorbikes (GMLT & MHX DHO)  4 Motor Bikes (HCs)	One ambulance has arrived in Vientiane waiting for customs clearance. The second ambulance is on order.  Paper work for rules and regulations and responsibility of four Nissan Pickups and two ambulances will be completed as soon as the documents are signed by the Ministry of Industry and Handicraft.					

# Health Education and Awareness

Supplies, drugs, kits, forms and manuals						
•	Drugs and medical laboratory supplies for DRF <sup>1</sup> per HC, DH and Emergency Department at Thakhek Provincial Hospital	Annual implementation plan for the procurement of drugs and other office supplies prepared with the provincial and district health official in July 2005. Drugs have been distributed to all facilities.	Program completed for the current year.			
		DRF received in Nov/Dec 05. Distribution to Districts completed.				
•	Village drug kits for each village (13 on plateau and 53 in region)	Village drug kits were distributed to 13 villages after the completion of VHV training course in Nakai on 16 <sup>th</sup> -18 <sup>th</sup> Jan 2006.	Program completed for the current year.			
	33 iii region)	68 Village drug kits and practical training on the management of DRF have been provided to all target villages in MHX (17 kits), GMLT (30 kits) and KK (8 kits) and NK (13 kits).				
•	TBA <sup>2</sup> kits		TBA kits distributed after the training.			
•	Manuals and Guidelines for each HC, printed forms and registers	List of manuals distributed to health providers during and after training:  DHs and HCs staff: - STIs manual published by ADB, FHI and Global fund - Diagnosis and treatment for district hospital published by IFMT - MCH manual (iron and folic acid guidelines made by MoH.  VHC and VHVs: - Manual for VHC published by MoH - Manual for VHVs published by MoH - Reproductive health book for VHVs published by MoH and UNFPA  TBA kit instruction has been reviewed and prepared which will be distributed to trained TBAs	Reproductive health tools (Maggie's Apron) will be distributed in June 2006			
•	Family Survey and introduction of family health	Pilot village health checks and survey was carried out as	Health files were used in conducting the MCH clinic in			

<sup>1</sup> DRF Drug Revolving Fund 2 TBA Traditional Birth Attendant

······		T	
	files (for 2 HC&DH) (Resettlement Program)	planned on 12-14 Dec 05. Data coding, entry and cleaning for the health checks and base line survey in Nongboua (Pilot) Village in 12 <sup>th</sup> -14 <sup>th</sup> December is in progress. All result positive cases have been followed up; some further blood test and treatment have been provided as required. Preliminary results will be available. Draft report on Nongboua Health Checks and Survey was distributed on 10 <sup>th</sup> April 2006.  The health checks and survey for eight households remains to be analyzed. (Delayed due to late arrival of SPSS software).	Nongboua village
•	Production of BCC <sup>3</sup> material	Available materials from MOH and other sources are already being used in the districts.  Discussions on the production of audio-visual aid materials with provincial health officials.  Draft plans have been made for audio-visual aid materials production by the PHO, DHOs and HPMU for locally use	Health education video strip is being prepared for education on parasitic infestation
•	Deworming medicine for children 2-5 years and school campaigns (Resettlement Program)	Deworming program for children 2-5 years old is being organized under health center MCH program. School children will be covered under MOH/WHO national deworming program.	The program of deworming is extended to the whole communities in project area.
•	Vaccines for EP <sup>I4</sup> programmes	In conjunction with national EPI programme. Already on going in this area by MOH and UNICEF.	Supporting EPI program in Districts through ongoing MOH and UNICEF programs.
•	Anti-TBC <sup>5</sup> Drugs	Under global fund program /WHO Pg. National Pg by MOH.	On-going by MOH.
•	MCH services for communities	In view of the findings of the health checks and survey in Nongboua village HPMU plans to start MCH services in each one of the villages in the project areas – first clinic will be held in June 06 in Nongboua village	Planning for the MCH clinic on 1 <sup>st</sup> June 06 in Nongboua village
•	Family Planning consumables (IUD <sup>6</sup> , pills, condoms, injectables)	National Program under UNFPA. Already ongoing in this area.	On-going by UNFPA.

BCC Behavior Change Communication
 EXPENDED Expended Program for Immunization

<sup>5</sup> TBC Tuberculosis Control

•	Vitamin A for integrated outreach activities	In conjunction with national EPI programme. Already on going in this area by MOH and UNICEF.	On-going by MOH and UNICEF.
•	Folic Acid and Ferro sulphate for antenatal programme	In conjunction with national EPI programme. Already on going in this area by MOH and UNICEF.	UNICEF informs that the MOH will receive the supply for Iron and Folic acid shortly and it will be distributed to the provinces and districts as soon as it is available in the country.

Awareness Program						
TBC control     Program     (laboratory,     reporting,     supervision)	Discussions with the PHO and DHO are in the progress.	Being carried out under the under National Global Fund Program.				
PCCA <sup>7</sup> /DCCA <sup>8</sup> (school and community based activities related to STIs including HIV/AIDS)		HPMU is providing support to Districts and PCCA/DCCA to provide awareness programs in schools and in the community.				
Relocation medicinal plants	Survey completed in 2005					
(Resettlement Program)	Survey completed in 2003					
Road safety		With the arrival of ambulances a format has been developed to be used in all district hospital for referral to higher centers.  This process will form a part of data collection for accidents.  A quarterly review of all accidents and referrals will be made and the materials used for education and training of health workers involved.				
		There will be quarterly visits of provincial team to districts to provide support and supervision.				
STIs including     HIV/AIDS Program		Six peer educator trainers from four districts participated in five-day TOT for peer education conducted by the LYAP in Vientiane Province on 15-19 May 2006.				
		Three-day STI training including laboratory services was conducted in Khamkeut District Hospital by				

<sup>6</sup> IUD Intra-Uterine Devices

PCCA: Provincial Committee for Control of AIDS
 DCCA: District Committee for Control of AIDS

		Khammouane PH staff on 22-24 May 2006.
STI services in Districts (Common program for Resettlement and Regional Health Program)	Six peer educator trainers from four districts participated in five-day TOT for peer education conducted by the LYAP in Vientiane Province on 15-19 May 2006.  Three-day STI training including laboratory services was conducted in Khamkeut District Hospital by Khammouane PH staff on 22-24 May 2006.	STI drug revolving fund was supplied to the STI clinic in Khammouane Provincial Hospital

# o Training and Capacity Building

# Supervision and monitoring

Village Health Volunteers have been already identified by LWU and DHO. Ongoing activity.

Human Passuress Davidonment (Combined Training for both Health Brograms)						
Human Resources Development (Combined Training for both Health Programs)						
Community Level	Health workers have been nominated by Nakai district to work in ICHCs (Resettlement Health Program).  Training courses for VHVs have been conducted in two districts:  - Khamkeut (21-23/11/05) - 7 VHCs and 11 VHVs from 9 villages  - Mahaxai (24-26/11/05) - 9 VHCs and 17 VHVs from 9 villages.  - GMLT (28-30/12/05) - 32 VHCs and 32 VHVs from 8 villages (8 of them are female)  - Nakai (16-18/01/06) - 9 VHCs and 23 VHVs from 13 villages (8 of them are female).  ICHC study visit to Xaisomboune - Hin Houa Seua took place from 19-22 December.	Seven TBA training courses were conducted in four districts. TBA kits were also distributed with the modified instruction sheets. Total of 96 TBAs were trained of which 94 were women.  KK – 3-5/05/06  NK – 10-20/05/06  GMLT – 22-24/05/06  MHX – 25-27/05/06				
Health Center Level	Health workers nominated by district to work in the resettled communities  TOT <sup>9</sup> s Meeting in PHC <sup>10</sup> /MCH <sup>11</sup> (22-26/08/05) at Khammouane PHO- 20 trainees.  MCH training program for HC&DH staff (19-23/09/05) at Khammouane PHO- 25 trainees  Following training the HC staff are being supported by HPMU to carry out regular supervision and village activities with the VHVs. Two study tours were conducted in Taleo ICHC, the neighboring province of Savannakhet for all four districts in March 2006.  Two health workers from Nakai District have been attending a one-month work experience at Taleo ICHC in April 2006.	On going				



TBA training in Mahaxai 25-27/05/06

<sup>&</sup>lt;sup>9</sup> TOT Training of Trainers

<sup>&</sup>lt;sup>10</sup> PHC Primary Health Care

<sup>&</sup>lt;sup>11</sup> MCH Maternal and Child Health

Study tours

Level)

(refer to Community and HC

#### District Level: - Training DH / DHO staff TOTs Training in PHC/MCH on MCH, prevention (22-26/08/05).strategies and appropriate diagnostic and treatment TOT of district health staff protocols for accidents for TBA (21-23/02/06). Six peer educator trainers from four **Emergency Medicine** Training (1 March - 31 May districts participated in five-day TOT 2005) in Mahosot Hospital, for peer education conducted by the LYAP in Vientiane Province on 15-19 Long term training of DH Vientiane - 9 trainees. May 2006. staff on specific areas (emergency medicine, Plans for tow training Three-day STI training including obstetric emergency, courses in February 2006: laboratory services was conducted in (1) TOT on TBA training and laboratory, radiology.) Khamkeut District Hospital by (2) computer training for Khammouane PH staff on 22-24 May DHO and PHO staff prior to 2006. distribute computers and printers to four DHOs and Emergency referral training meeting Khammouane PHO is being followed up. A meeting to discuss the HPMU and RMU working Essential Obstetric Care training relations was organized by meeting is being followed up. the Provincial Health Officer and held with the Deputy Following training areas have been Governor on 24th April identified so far: 2006. The X-Ray Radiography and Echography recommendations were well Laboratory received and accepted by Emergency medicine training for the group. The Chair of RC Khamkeut will authorize and forward the names of the provincial coordinator and the four district facilitators submitted by the Provincial Health Officer. - Training of DH / DHO staff Training for DRF will only be on general management conducted if there is need and DRF management to do that as facilities are As and when required used to running the DRF for some time. Workshop about Discussions are being held with the districts. identification of psychosocial / drug abuse problems for DH / DHO Preliminary interviews have On going staff been conducted in

Nongboua Village to assess the level of smoking, alcohol use and violence.

Meetings		
Zonal Health Committee Meeting - (Resettlement Health Program)	None	To be planned after construction of ICHCs
Annual review and planning workshop at province	None	Annual review through annual implementation plan in the first week of June 06 – A joint meeting of all districts and province
Monthly meetings	PHO and DHO routine monthly meetings (1st held in July 2005)	Meetings held between 2-4 May 2006
Quarterly meetings	Intersectoral Meeting in 4 districts scheduled end of each quarter (1st held in Sept. 2005).  Idem for Health Centers (with VHVs and HCs).	Will be carried out in conjunction with the annual review through annual implementation plan in the first week of June 06 – A joint meeting of all districts and province
Bi-annual meetings	The 6-monthly meeting was conducted on 7th December 2005	Second bi-annual meeting Will be carried out in conjunction with the annual review through annual implementation plan in the first week of June 06 – A joint meeting of all districts and province

# $\circ\ \,$ Public Health Monitoring and Surveillance

Routine data collection / HIS <sup>12</sup>	Ongoing data being reviewed and analyzed.  Data is reviewed at district and HC supervisory visits.	Routine supervision of the health center staff's activities was conducted during the month  Maintained the updates of the Public Health section of the NTPC website.		
Outbreak Response     Preparedness Plan     (ORPP) Khammouane     and Bolikhamxay     Provinces	Final report has been completed and distributed in April 06.			
Outbreak response in Khammouane Province (Project affected area)		As and when required		
Scientific Support	Contract between the Institut Francophone pour la Médecine Tropicale IFMT and NTPC signed on 5 <sup>th</sup> October 2005 to provide a 2- year consultancy services for Scientific support to the Health Program Management Unit.	On going		
Existing data Analysis 2004	Data Analysis completed by IFMT and HPMU in May 2005.	Completed		
Midterm survey	None	Start in November 2008		

<sup>&</sup>lt;sup>12</sup> HIS Health Information System

Page 35 / 94

	and complete in May 2008.
Special surveys	As and when required



Equity Fund
 Will be used as and when required.

# **Social Activities**

**Nakai Plateau Resettlement** 

#### 2.3 Nakai Plateau Resettlement

#### 2.3.1 General

<u>Transitional resettlement</u> continued to gain momentum during the month of May – villagers continue to participate in the clearing of their housing and agricultural plots, collection of building materials for temporary houses, construction of temporary houses, toilets, wells, schools etc. The enthusiasm of the villagers has continued for two months, with the process is being closely monitored and supported by NTPC, District and RMU staff, to ensure that relocation does not proceed without appropriate management (health, schooling, access etc....). Villagers are organized in units who work as a team to establish the essential infrastructure required prior to moving in to their temporary houses – which are at least of an equivalent standard to their source village houses.

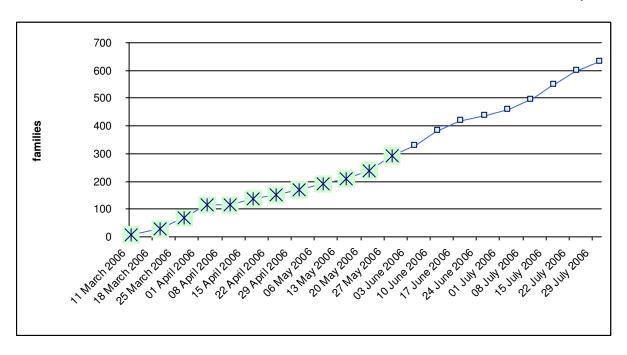
Rice and protein distribution programmes are in place (a mix of fresh and dried meat, eggs and vegetables was determined as appropriate by the NTPC Health team based on nutritional considerations), and basic household "kits" are distributed – these include water containers, washing gear and mosquito nets. District health officials are monitoring all transition families for any signs of ill health requiring treatment, and school uniforms are being provided as required.

As of May 31 there have been a total of 291 families resettled (approximately 1450 people) to transition housing. Transition resettlement will continue to move at a controlled rate with more than six hundred families expected to be living on their new plots of land and participating in the development of their new homes by the end of July 2006.

#### Transition Timetable

	Kaeng Yao	Sop On	Ponsavang	Bouama		Sopma		Nong Boua	Ban Done	Khon Kaen	
					Nam Nian	Hadkampan		Kham			
					(vietic)	Kaeng Yao					
Move to Area:	16	19	18	17	8a	8	11	9	21	22	
11/03/2006											8
20/03/2006		20									28
27/03/2006		40									68
03/04/2006		49									117
10/04/2006											117
17/04/2006			19								136
24/04/2006			11								152
01/05/2006			14								171
08/05/2006				20							191
15/05/2006				20							211
22/05/2006				18	10						239
29/05/2006				6							291
05/06/2006					5	22	12				330
12/06/2006						30	23				383
19/06/2006						6	9		20		418
26/06/2006									20		438
03/07/2006									20		458
10/07/2006								15	20		493
17/07/2006								15	20	20	548
24/07/2006								12	20	20	600
31/07/2006								15	8	10	633
Tatal familias		100	44	74	0.4	70	50	F-7	100	50	000
Total families	8	109	44	74	34	73	56	57	128	50	633

The following chart shows the actual to date cumulative movement of families as scheduled in the above table.



#### **Transitional Livelihoods:**

Preparation of agricultural land has commenced in four new transition villages – Nong Boua, Boua Ma, Phonsavang and Sop On, and will commence in the northern resettlement villages (new Sop Hia, new Sop Phene and new Sop Ma) soon after the resettlers have moved into their transition housing in these areas.

Training and assistance in home gardens is on-going and most transition resettlers have productive gardens for home consumption and trade.

The opportunity to supply labor for work associated with UXO clearance and village construction is provided to all villages, in addition to food support in the case of transition resettlers.

Transition Relocation Assistance:

- · basic household goods
- water storage containers
- buckets

- · washing basins
- mosquito nets
- school uniforms where needed

Rice and protein assistance (formulated in consultation with Health Team):

- rice 400g 600g per day
- fresh meat (chicken, beef, fish) 200g per week
- fresh eggs 2 per week
- dried Meat (beef, fish) 200g per week

vegetables

There is a full time presence of NTPC and District supervisors and community facilitators in each village.

Most NAKAI activity is now focused on implementation of Transition Relocation.

Two schedules are presented in the following pages:

The first schedule shows the phases of resettlement for the various villages listed in order of potential impact by cofferdam and main dam

The second schedule shows progress of the respective tasks associated with resettlement of the same villages.

statistical impact in 2006 statistical impact in 2007 2006 2007 2008 (part. dam) New area hh # (2006) 1% 10% 1% number village name 10% new area T1 ТЗ T4 T1 T2 T4 T1 T2 T3 T4 T2 Т3 preparation o Ban Hat Khamphane 24 N1 transitional phase relocation completed relocation completed phase preparation of transitional transitional phase relocation completed relocation completed Ban Sop Ma 25 N1 phase preparation of transitional Ban Keng Gnao 25 N1 transitional phase relocation completed relocation completed phase preparation of transitional Ban Keng Gnao 8 16 N2 transitional phase relocation completed relocation completed phase preparation of transitional 13 Ban Sop On 117 3 19 N3 transitional phase relocation completed dam relocation completed phase transitional relocation 127 21 N4 relocation completed Ban Done transitional phase phase completed preparation of transitional relocation relocation completed Ban Khone Khen 48 3 N5 22 phase completed preparation of transitional Ban Sop Phene 56 N6 transitional phase relocation completed relocation completed phase preparation of transitional 11 Bouama 74 2 3 17 N7 transitional phase relocation completed relocation completed phase preparation of transitional Ban Phonsavang 44 18 N8 transitional phase relocation completed relocation completed preparation of lower hh on transitional Ban Sop Hia relocation completed Nx transitional phase XX (73 & NamNian upper part of the old village relocation of preparation of lower hh on transitional Ban Sop Hia (vietic) transitional phase relocation completed 21 8a N9 upper part of phase the old village relocation of preparation of lower hh on transitional Ban Nong Boua Kham 57 N10 transitional phase relocation completed upper part of phase the old village preparation of transitional 70 0 13 N11 relocation completed Ban Thalang transitional phase phase preparation of transitional Ban Nakai Neua 91 0 2 N12 transitional phase relocation completed phase preparation of 30 transitional Ban Nam Nian 0 0 Nx transitional phase relocation completed хx (73 & SopHia) phase preparation of transitional Ban Nakai Tai 195 0 0 N13 transitional phase relocation completed phase preparation of transitional 16 Ka Oy 10 0 0 0 0 N3 transitional phase relocation completed phase preparation of transitional 0 16 Ka Oy 22 0 0 0 21 N4 transitional phase relocation completed phase preparation of transitional Ban Oudomsouk / Phon Phar 0 transitional phase relocation completed 103+56 0 0 N14 phase

		1						ı						I	1	1											I		May 200
N1	8	Ban Hat Khamphane		24				NR				Р					С	T2/06						С	р	р	р		T4 / 06.
N1	8	Ban Sop Ma		25				NR				Р					С	T2/06						С	Р	Р	Р		T4 / 06.
N1	8	Ban Keng Gnao		24				NR				Р					С	T2/06						С	Р	Р	Р		T4 / 06.
N2	16	Ban Keng Gnao		8				NR	NR		NR		NR			Mar-06		T2/06		NR	Р						NR		T3/06
N3	19	Ban Sop On		109				NR		NR						Apr-06		T2/06								Р	С		T4 / 06.
N3	19	Ка Оу		7				NR		NR						Apr-06		T2/07								Р	С		T4 / 07.
N4	21	Ban Done		128						С		Р				Jun-06		T3/06											T1 / 07.
N5	22	Ban Khone Khen		50								Р				Jun-06		T3/06											T1 / 07.
N6	11	Ban Sop Phene		56				NR	Р			Р	Р	Р	Р		С	T2/06	С	С				С	Р	Р	С		T4 / 06.
N7	17	Bouama		74				NR		NR								T2/06						С	Р	Р	С		T4 / 06.
N8	18	Ban Phonsavang		44				NR		NR								T2/06						С	Р	Р	С		T4 / 06.
Nx	xx	Ban Sop Hia		30														T4/06											T1 / 07.
N9	8a	Ban Sop Hia (vietic)		28								Р	Р	Р	Р			T2/06						С	Р	Р	С		T4/06
N10	9	Ban Nong Boua Kham		57				NR	Р	С	O	Р	Р	Р	Р	Jun-06		T3/06	С	Р	Р	Р	Р	С	Р	Р	С		T1 / 07.
N11	13	Ban Thalang		79														T1/07											T1 / 07.
N12	1	Ban Nakai Neua		88														T1/07											T1 / 07.
Nx	xx	Ban Nam Nian		30				NR										T4/06											T1 / 07.
N13	2	Ban Nakai Tai		179				NR										T1/07											T1 / 07.
N4	21	Ка Оу		25				NR		С								T3/07											T4 / 07.
N14		Ban Oudomsouk / Phon		103+56				NR										T3/07											T4 / 07.
				number of hh for 2 number of hh in its base : 10 ARI flo	alic are provisional	ed on 2006 cor	nstruction contr	acts)	Р	In Procureme	nt																		
		NR	Not Re	elevant			Р	In	procui	rement			С		Contract phase	t signed, ı	mobilizati	on		Impler	mentati	on - On	going		Task	compl	eted		

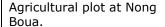
# **Transition Resettlement:**

As transition relocation schedule is being implemented in Areas 8 (Sop Ma, Hatkhampan and Keng Gnao), 8a (Vietic Sop Hia), 11 (Sop Phene), 17(Boua Ma), 18 (Phonsavang) and 19(Sop Hia). The transition resettlement program schedule is presented in Annex.

The overall relocation planning, including the transition phase, is presented in the figures on the following pages



Permanent houses for resettlers from Keng Gnao progressing. .





#### 2.3.2 Infrastructure

The wet season has started and persistent heavy rains in May caused the three road construction contractors to stop work for some days.

# Topographic survey and mapping of indicative locations

The contract for extra topographic survey and mapping at Area 21 for Ban Done was completed. The extra area surveyed and mapped was 80 ha. The contract for an extra 201 ha between Areas 1 and for Nakai Tai and Nakai Neua is nearly complete and the contractor should complete the installation of 30 Nakai reservoir full supply level beacons in the first week of June.

A contract was signed with the same contractor for the survey and mapping of an extra 237 ha near Area 13 for the Ban Thalang irrigated agriculture area. With the start of the rains, the work may not able to be completed until the end of the year.

There is still no final resolution to the question of where the (ex Nam Pan) Sop Hia and Nam Nian resettlers will be resettled. This is the remaining area to be surveyed and mapped. Consultations with GOL and with resettlers are on-going.

# o Finalization of village location - Village layout Design

<u>Village Development Plans:</u> All VG1 layouts have been completed (except for Sop Hia and Nam Nian previously scheduled to move to Nam Pan). The contract the preparation of layouts for the remaining villages is underway as shown in the table below.

Name of the original villages in VG2	New village area	Village layout	Agriculture Layout
Thalang	Area 13	Complete	More survey required
Nakai Tai	Area 2	Preliminary	Preliminary, More survey underway
Nakai Neua	Area1		More survey nearly complete
Done	Area 21	Complete	Complete
Khone Khen	Area 22	Complete	Preliminary

#### UXO search and clearance

The UXO clearance company now has two groups of teams working on the northern resettlement areas and has made good progress during the month. The VG1 resettlement areas (11, 9, 8A and 8) are complete and search and clearance at the VG2 housing area at Area 13 is underway. When this is complete, the company will move both teams to the south to search Area 22 for Ban Khone Khen and then the extra area surveyed at Area 21 for Ban Khone Khen.

The Khammouane Provincial Army have completed the search and clearance for the route of the Southern Resettlement Road and Area 21 for Ban Done. They declined to search Area 22 and the UXO company will now undertake this work. The Army found two recoilless rifle rounds and a number of bullets.

The UXO company also has a contract for "Resettlement Area UXO Community Awareness and Emergency Response Teams." During the first month the CA team focused on strategy and curriculum development, planning, the acquisition of educational posters and staff training so that all team members have a common understanding of working vocabulary and safety procedures. An awareness survey of the resettlement villages has commenced to identify each village's needs. The response team was not called upon and this team assisted the other teams with the search and clearance of the northern areas.

### Roads and drainage

There are now three ongoing road construction contracts. As stated previously, rains have reduced progress in May as have some equipment breakdowns. However overall progress is considered good, and an important objective at present, that of ensuring road access to resettlement sites for the coming rainy season, .is likely to be met.

#### Southern Access roads to and within villages:

The assigned contractor has continued work on the construction of access roads to and within the new villages of Bouama (area 17), Phonsavang (area 18) and Sop On (area 19) and has made good progress, despite the rains in May. It is estimated the works are about 80% complete. Households from Ban Ka Oy who were previously going to be resettled at Area 21, will now most probably move to Area 19 and this will necessitate some extra works in this area. This will be confirmed in early June.



Boua Ma village road

## Southern Resettlement Road:

The contract for the construction of the Southern Resettlement Road, 11.765 km long is about 30% complete. Clearing is complete, as are most of the cross-drainage culverts, and embankment compacted fill is underway.



Southern Resettlement Road under construction

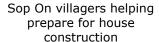
# House Construction

Contracts for the construction of timber houses for VG1 resettlers were awarded and two companies have commenced construction. The eight houses at the Pilot Village, area 16, for the recently arrived transition resettlers from Keng Gnao are now nearly complete and completion expected early June. The problem with the delivery of sawn hardwood is improving but still causing some delays to the contractors.

Other contracts are planned to start as follows:

Areas and Villages concerned	Contra	ct No.	Start Date
Area 17 for Bouama	6604	Area 16	20 March 06
Area 16 for Keng Gnao	C604,	Area 17	19 May 06
Area 18 for Phonsavang	C60	)5,	16 May 06
Area 19 for Sop On	C60	06,	21 Apr 06
Area 8 for Sop Ma / Hat Khamphane	C607,	Area 8a	Under review
Area 8A for Sop Hia	2007,	Area 8	Under review
Area 9 for Nong Boua Kham	C60	08,	under review
Area 11 for Sop Phene	C60	09,	under review

The Contractors for Area 19 (Sop On), 18 (Phonsavang and 17 Bouama have completed the construction of the work camps and have started construction of the houses.







House framing being erected at Sop on

# Community Buildings

Each resettlement village will have a primary and nursery school, village office and meeting hall, market, warehouse and a rice mill and workshop. There will also be two clinics, five seed processing and agricultural storage facilities and five organic fertilizer facilities located at various villages. The sizes of most of the buildings will vary according to village size. Designs have been prepared for most of the Pilot Village community buildings, however many resettlement villages will be larger and more designs are required.

The preparation of terms of reference and bidding documents for consultant services for the designs and the preparation of bill of quantities were completed and four Vientiane-based consultant companies have been invited to bid.

The drawings and Bills of Quantities for the two Health Centers at Ban Done and Ban Nong Boua Kham were completed under a separate contract for the design of Public Health Infrastructure.

# Domestic Water Supply and Sanitation

Resettlement village water supplies will be a combination of:

- Rainwater collected from house roofs, via guttering and down-pipes to a 2,000 liters capacity tank; and
- Deep machine drilled boreholes equipped with hand pumps.

<u>Toilet/bathrooms</u> will be installed at every house and there will also be some at the community buildings. The construction of the VG1 resettlers rainwater collection facilities and latrines has been included with the housing construction contract.

<u>Boreholes with hand pumps</u>: A contract with the Champasack Provincial Nam Saat drilling team has been established and signed for the construction of 109 boreholes in 10 resettlement areas, 5 district hospitals and Health Centers and in possible other impacted Project Land areas in addition to the already completed 16 boreholes that were urgently required for the transition relocation – in the three southern resettlement sites at Area 19, 18 and 17. This intervention is planned to last for 7 months as indicated in the tentative schedule below.

					2006	2006						2007	
New Area	Name of Village/Health Center/Hospital	No of BHs required	No of BHs already completed under other contracts	Maximum No of BHs to be completed until January 2007	Мау	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.
1- Resettl	lement areas												
16	Ban Nong Boua (Pilot village)	7	4	3								3	
17	Ban Bouama	11	4	7		2		2	2		1		
18	Ban Phonesavang	8	2	6	3				3				
19	Ban Sop On	17	6	11	3	2	2	2	2				
8	Ban Sop Ma/ Hatkhampan/Keng Nyao	11		11		3	2	2	2	2			
8a	Ban Sophia Vietic	7		7		2	2			3			
9	Ban Nong Boua Kham	10		10			2	2		3		3	
11	Ban Sop Phene	9		9		2	2	2		3			
21	Ban Done	22		22		3	3	3	3	3	4	3	
22	Ban Khon Kaen	8		8			1	1	2		4		
Sub total	1	110	16	94	6	14	14	14	14	14	9	9	0
2- Health	Centers and District Hospitals												
	Gnommalath Hospital	1		1							1		
	Khed Phit Health Center	1		1							1		
	Nadou Health Center	1		1							1		
	Nasok Health Center	1		1							1		
	Kaeng Deng Health Center	1		1							1		
Sub Total	12	5		5	0	0	0	0	0	0	5	0	0
3- Project	t lands												
	Oudomsouk	15	15										
	Pon Pan Pek	5	5										
	Others - To be finalized and adjusted during present implementation period	10		10									10
Sub Total	13	30	20	10	0	0	0	0	0	0	0	0	10
GRAND T	OTAL	145	36	109	6	14	14	14	14	14	14	9	10

An extension to this contract to complete the entire water supply construction programme is to be established from January 2007 for an estimate of 90 more boreholes. It is planned that the whole drilling works requirements will be completed for all the resettlement villages in July 2007.

NTPC is directing the water supply and sanitation activities for the benefit of the Nakai plateau resettlers following the principles of the National Strategy for the Water Supply Sector. In the context of the Direction and the National Framework for the Health sector in Lao PDR, this is in order to achieve sustainability of the new constructed facilities and therefore contribute to an improved health and socioeconomic impact from using clean water and sanitation services.

NTPC is into the process with the National Centre for Environmental Health and Water Supply (Nam Saat) to enter into a joint agreement of cooperation and provision of services in order to assist NTPC and the RMU in the implementation of the WATSAN (WATer supply and SANitation) programme for the duration of the resettlement period.

The main areas in which Nam Saat will intervene are:

- Community dialogue with the communities on technical options and responsibilities.
- Tailored hygiene awareness interventions at village level.
- Establishment of WATSAN Committees at village level and training in management, operation and maintenance of the systems.
- Quality assurance for the completed works.
- Logistic support (storage for equipment prior to installation, facilitating supply of pumps).
- Monitoring post project implementation.

#### Hand pumps procurement:

The National Center for Environmental Health and Water Supply, as a Government Agency partner of both UNICEF and NTPC signed a Memorandum of Understanding and/or Purchase Agreement with UNICEF with regard to the supply of water supply and sanitation equipment through UNICEF Supply Division.

Therefore, a one year duration Frame Agreement has been established with the National Center for Environmental Health and Water Supply for the procurement of hand pumps. Two hundred (200) required deep well Afridev hand pumps have now been ordered and their delivery is expected for September. In that case, Central Nam Saat orders these hand pumps through UNICEF Procurement Services as the customer and NTPC is the funding source or payee utilizing funds from IDA Grant H155 – LA.

In the meantime, 50 Tara hand pumps have been supplied from the National Center's existing stock and a part already installed as a transitional measure in the already completed boreholes. This measure is due to the necessary delay for the procurement of the AFRIDEV hand pumps from UNICEF.

Thirty two (32) additional 1,000 liter capacity water tanks and accessories were delivered as an alternative and temporary measure to cover the needs of the coming resettlers of the 4 northern resettlement areas. Another batch of 24 tanks will be delivered early June for the population of Ban Done and Ban Khone Khen (areas 21 and 22)

## Irrigation Systems

The design of the extension area to the Pilot Village irrigation scheme for the resettlers from Ban Keng Gnao that wish to resettle there is complete and negotiations with the same contractor that constructed the Pilot Village scheme are complete and it is expected that a contract will be signed in early June.

The preparation of irrigated agricultural layouts is part of the resettlement village planning exercise and this has been reported on above.

Permanent irrigation agriculture cannot commence until there are transmission lines installed to power the irrigation pumps and there is Nakai Reservoir water to pump (apart from areas 17, 18 and 19, which will have the use of water from the Theun Duane).

# Electricity

The procurement of generating sets for VG1 resettlement villages is complete and a contract is expected to be signed in early June. The generators will provide electricity for lighting until permanent transmission lines along the new Road 8B and Southern Resettlement Roads are installed.

The Senior Electrical engineer is continuing with the design of the resettlement village electricity layouts. He will continue with this activity in between the supervising installations at various sites –the NTPC Nakai Residential Complex, VFA Sawmill and Gnommalat District Hospital. To date designs have been completed at five villages.

It is expected that a small contract for the electrification of the eight houses at Area 16 will be signed with EDL in June.

### Nong Boua

The basic infrastructure development for Nong Boua pilot village is near completion. The community building in Nong Boua (health and agriculture facilities are described under their respective programs) as described in Concession Agreement:

Nursery school, primary school	✓ Completed
<ul> <li>Teachers' housing (single and married teachers)</li> </ul>	✓ Completed.
Meeting hall and village office	✓ Completed
Roofed Market	Construction will now be delayed to the 2006-2007 dry season and bidding will be combined with the other VG1 community building tenders.
Warehouse	✓ Completed
Rice Mill and Workshop	Design completed.  Bid procedures delayed as per the roofed market
Cattle yard and crush	Construction delayed as above

Infrastructure Schedule in Annex.

# 2.3.3 Nakai Plateau Forestry Development Program

**Past Progress Summary:** The forestry component activities are focused on the establishment and strengthening of the Nakai Plateau Village Forestry Association (NPVFA) to effectively undertake sustainable forest management and operate a profitable forest industry business to provide additional income to support resettled families and development of sustainable managed forest resources.

Training and demonstration of alternative forest income generation activities is also under development in non-timber forest products (NTFP's). Forestry inventories and reservoir/resettlement area border demarcations have also been carried out. Forest plantation / regeneration / fire patrol activities currently being carried out by villagers under NPVFA supervision include weeding and maintenance of 2004 and 2005 NTFP / timber plantations (42 hectares) and forest enrichment plantings (50 hectares) and the establishment of a nursery to service planting programmes. Over 55,000 seedlings have been produced in nursery for non-timber forest products and over 100,000 seedlings for plantation for 2006 operations.

Retyping and remapping of the better quality forest, degraded forest and protection forest zones have been completed and a permanent forest management area defined for long term sustainable forest management under a long term forest management contract and management plan. Forest management contracts and long term forest management plans were signed on by the Government of Laos and the Nakai Plateau Village Forestry Association on 2<sup>nd</sup> August 2005.

All GoL licenses have now been approved to allow the VFA to mobilize and commence production to produce timber for the resettlement housing and village community buildings in the current dry season. GoL has approved tax exemption for wood harvested in resettlement area and part reservoir area if used for project resettlement related construction.

A log harvesting plan for resettlement lands in 2006 has been approved by GoL. This allows 16,000 cu.m. to be salvage harvested from housing and irrigated agriculture sites, agriculture lands and areas to be inundated by the reservoir near villages.

In December 2005 NTPC obtained GoL approval to harvest 33,000 cu. m. of tax free logs from salvage areas and is contracting the VFA to harvest and process to sawn timber species suitable for construction of resettlement houses in 2006 and 2007. This is beyond the design capacity of VFA equipment's yet to be supplied for sustainable harvesting (6,000 cu.m. per year), so most of the work of logging and sawing to date is being contracted out.

Logging has been completed on four resettlement housing and intensive farming areas, project lands near Oudomsouk, road 8B realignment and the NTPC residential housing complex. Production of furniture for project needs and new schools is being undertaken and production of door and window frames for resettlement housing has commenced. Over 200 window frames and 300 door frames have

been produced. Small scale production of charcoal on a pilot demonstration scale has also been undertaken.

Construction of the main sawmill building (except reinforced foundations and flooring for equipment) has been completed, together with VFA offices, canteen and accommodation facilities. Operations to complete installation of dry storage shed, maintenance workshop, processing equipment and drying kilns have commenced

Proposals for processing of small wood from salvage areas are being evaluated that include chip wood, charcoal production for export (China) and pencil wood (for Thailand) manufacture.

Previously reported constraints on achieving production goals continue: Procurement of goods and services, approval of wood supplies, delays in implementation of capacity building and construction planning changes influencing production.

#### May Summary Report: The main developments during the month have included:

- Logging of resettlement sites has been suspended due to UXO operations.
- Since logging approvals by GoL in late January 2006, harvesting of 9,600 cu.m. of hardwood species and 7,400 cu.m. of softwood species have been harvested. The VFA is selling the softwood logs unsuitable for construction to build up working capital and a community benefit fund. Exchange of pine logs for hardwoods is not possible
- The transport of 2,700 cu.m. hardwood logs to Lak 20 is complete and sawing commenced with 600 cu.m. sawn timber returned to Nakai to date.

At Nakai 250 cu. m. of sawn wood has been produced from 500 cu.m. logs

Month	Logging	(cu.m.)	Sawn Timber Production ( Cu.m.)
	Softwood	Hardwood	
Dec 05	500		
Jan 06	1000	1100	
Feb 06	1500	2000	
Mar 06	1300	3000	250
April 06	689	3,600	300
May 06	2416		307
Total	7,405	9,700	857

- The productivity of both Lak 20 and Nakai sawmills remains lower than envisioned, and a stronger involvement of NTPC/VFA management is considered to improve it.
- Contractors have commenced weatherproofing the VFA sawmill yard, construction sawn wood dry store, equipment installation foundations, sawmill maintenance room, cement flooring and preparations for drying kilns.
- A total of 58.8 cu.m. hardwood timber has been supplied to contractors and 26 cu.m. to temporary sawmill.
- The installation of 6 temporary mobile sawmill units at one site continues and is scheduled to commence production before end June
- A small plantation area of 2.4 hectares has been planted with mainly NTFP species
- At furniture factory a small contract has commenced to build bookshelves, chairs and tables for RMU and District office
- Charcoal production was 30 bags (600 kilo) by Nong Bua Village, but workers have stopped to assist with construction of large brickmaking and charcoal production kilns.
- Brick production was 15,000 bricks, of which 8,000 were used in construction of a large 5 meter diameter charcoal production kiln and 7,000 in construction of a brick firing kiln.

# 2.3.4 Nakai Plateau Agricultural and Livestock Development Program

Based on the implementation of fast track resettlement we are now focusing on the resettlement villages there will be affected by flood in the next two months from the closure of coffer dam. Otherwise, we, agriculture and livestock (livelihood) team introduced the resettlers to grow several vegetables as temporary vegetable garden when the resettlers moved to a new site in order to secure the food security and household income of the resettlers. Since last year, we already started to improve the livelihood condition of VG1 and VG2 as mentioned in the previous monthly progress report.

During the month of May, we focused on the establishment of temporary vegetable garden and mushroom house at Keng Gnao (called "Nong Boua Unit #5"), Phonsavang, Sop On and Boua Ma and we also introduced the resettlers to build the pig shed and poultry shed. Most village we still continuing to provide vegetable seed, seedlings, organic fertilizer and other equipment for home garden. The temporary vegetable garden is completed for every household at Sop On and also 22 mushroom houses. The vegetable production is mainly for house consumption but they also sold their production as mentioned below. Most activities of agriculture and livestock program is still on-going. According to agriculture land clearing is on-going in every village but we have some difficulty to cutting bush and clearing because the wet season is coming and now raining almost every day.

# Pre-resettlement village

#### **Agriculture:**

The fast track resettlement still continuing to implement of this month, we are emphasizing on the resettlement village particularly Keng Gnao (Nong Boua Unit #5), Sop On, Phonsavang and Bouama in order to improve their livelihood condition in terms of household food security. After the completion of temporary house construction, we, livelihood team, introduced the resettlers to grow the several vegetables as temporary vegetable garden, mushroom cultivation and also build the poultry shed and pig shed. The detailed activity could be summarized as follow:

#### Keng Gnao (called "Nong Boua Unit #5):

The vegetable seed were supplied to 7 households for the second crop:

Vegetable seed	# of household	Quantity (g)	Planted area (m2)
1. Cucumber	3	300	30
2. Morning glory	5	3,500	82
3. Coriander	3	4,500	25
4. Onion	6	5,300	44.5
5. Chilli	7	200 seedlings	70
6. Eggplant	7	100 seedlings	35
Total:	31	13,600	286.5

Some vegetable production were harvested of this month as indicated in the below table. Most production is not only for household consumption but they also sold for their household income generation and earned 102,500 kip from several vegetables.

Vegetable	# of household	Planted area (m2)	Production (kg)
Cucumber	4	21	158
Morning glory	3	25	17
Onion	7	30	18.5
Total:	14	76	193.5

The temporary vegetable garden is now continuing for third crop and the major vegetable will be promoted in the coming wet season such as: onion, cucumber, morning glory, chilli, eggplant, coriander etc.

5 mushroom houses were constructed for 5 households including 2 vulnerable households and every household received 300 bags of sawdust mushroom spores and during this month they can produce 68 kg of mushroom, 18.5 kg of which sold in the Oudomsouk market and earned 185,000 kip.

An agriculture land clearing and fencing for such land area in 1,846 m of perimeter are completed and then 3 households of the total 8 households proceeded directly to grow the rice in the area of 1.7 ha and also planted the banana plantation on the contour bunding for soil conservation.



Fencing for agriculture land area at Keng Gnao

#### Sop On:

Most Sop On villagers doing agriculture land clearing but only 7 vulnerable households could not carry out their owner agriculture land clearing due to lack of labor. However, we try to look at another labor to do it for them. The establishment of temporary vegetable garden is also completed for every household (111 households) in the area of 2,970 m2. The objective of the temporary vegetable garden is mainly for their household food security during the fast track resettlement period. The vegetable garden is very useful for them because some households earned the income from their production. The temporary vegetable garden is on-going throughout the wet season 2006.

Vegetable	# of Household	Production (kg)	Income (kip)
1. Onion	19	12.5	125,000
2. Morning glory	17	52.7	152,000
3. Pakchoy	10	27.4	51,500
4. Coriander	13	15.1	151,000

Vegetable seed were distributed as follow:

Coriander: 0.4 kgOnion: 2 kg

Morning glory: 0.4 kg

• Cucumber; 320 g

Provided 22 mushroom houses including 8 vulnerable households and will be provided. During the month of April 2006, 18 households produced 166.5 kg of mushroom, 35 kg of which has been sold and earned 350,000 kip.

Livestock activity is also promoted to the resettlers to build their owner 14 poultry shed and 4 pig shed and the vaccination of livestock will be implemented in the month of June.

#### Phonsavang:

The establishment of the temporary vegetable garden is completed 28 households in 548 m2 of planted area and 4 mushroom houses but this is still on-going. The distribution of agricultural tools is completed at all of 38 households. The 16 pig sheds and 7 poultry sheds is constructed by the resettlers. Most household are now proceeding to agriculture land clearing.

#### Roua Ma:

The resettlers of Boua Ma are now busy for the construction of their temporary house construction but agriculture land clearing will commence in the month of June but it is quite late for rice planting. The establishment of temporary vegetable garden is completed for 27 households in 675 m2 of planted area and also 3 mushroom houses. Most activity is still on-going for improving of their livelihood condition.

#### Agriculture land clearing:

Based on the fast track resettlement period, after the completion of the temporary house construction the resettlers should proceed immediately to their owner agriculture land clearing but we have some difficulty about the land clearing because the wet season already coming and we thought that we could not complete at all in every villages while the stumps should continue gradually to take out as much as possible.

At Keng Gnao (called "Nong Boua Unit #5"), the agriculture land clearing of 7 households is completed of the total area 5.12 ha and also the fence for agriculture land area is completed. The contour bunding will also construct in the sloping land area from 5% to 25% and on the contour bunding will be grown banana plantation and some fruit trees plantation in order to protect soil erosion.

At Sop, The agriculture land clearing is on-going on a total area of 73.26 ha of which 31 are completed and ready to grow the rice and field crops. We expected to grow the rice at least 25 ha and 3.5 ha for other field crop including forage;

At Phonsavang, The agriculture land clearing is also on-going in the total area of 29.04 ha of which area we expected to grow the rice at least 15 ha and 2.5 ha for other field crop including forage.

#### Mushroom production:

As we known that mushroom is one important component of food security situation even household income generation of the resettlers. Since the month of May, we promoted 5 households including 2 vulnerable households of Keng Gnao (called "Nong Boua Unit #5") to grow a mushroom and during this month they produced 68 kg of mushroom. At Sop On provided 22 households including 8 vulnerable households have been promoted to grow the mushroom as mentioned above, provided 300 bags of sawdust mushroom spores for each and 14 household of which produced 166.5 kg of mushroom.

Mushroom production is also a one household source income and food security that we will promote to every village but firstly we have to consider for the vulnerable households who do not have enough labor for their vegetable garden because mushroom production is not heavy or hard works.

#### Livestock:

In the month of May, we still continue to the preparation of the livestock relocation to a new resettlement site particularly Sop On, Phonsavang and Boua Ma. Actually, livestock relocation must be implemented as the same time when the resettlers move to a new site but most resettle proposed the livestock would be relocated later. We are now preparing the buffalo relocation plan for Sop Phene and Sop Ma. On this plan, the resettlers have to make the temporary buffalo shed at a new village but the project should pay for their labor and also supply some materials.

Buffalo registration is still continuing to implement and expected to finish within the month of June, 2006. During the month May, we registered some buffaloes as follow:

Ban Done
Boua Ma
Oudomsouk
Nakai Neua
18 buffaloes
23 buffaloes
2 buffaloes
7 buffaloes

For livestock vaccination Hemorrhagic Septicemia (HS) for buffaloes and cattle, Swine fever for pig and Newcastle M&F for poultry has been done in villages as follow:

Ban Done
Sop On
Phonsavang
162 buffaloes, 22 cows, and 8 pigs
34 pigs and 16 poultry
3 pigs and 75 poultry

Boua Ma
 Nakai Neua
 52 buffaloes

• Thalang 10 pigs

Nong Boua Kham
 39 cows and 17 pigs

Nakai Tai
 93 buffaloes, 26 cows and 9 pigs

Keng Gnao
 6 pigs and 102 poultry

We encouraged the resettlers to build the pig shed and poultry shed and the project supplied some materials (e.g. thatch and nail) as follow:

Village	# of pig shed	# of poultry shed	Remark
1. Keng Gnao	-	7	
2. Sop On	7	18	
3. Phonsavang	16	7	
4. Boua Ma	11	14	
Total:	24	46	

# Nong Boua-Pilot Village Activity

#### **Agriculture:**

During the month of May, the planted area of vegetable and field crop is increased from the last month while the number of household grown vegetable is also decreased because during the month of May most peoples of pilot village still continued to work for Villager Forestry Association (VFA) as daily hired labor. The production of several vegetable could summary as below.

	April		М	Production of	
Vegetable	# of	Planted area	# of	Planted area	May (kg)
	household	(m2)	household	(m2)	
<ol> <li>Eggplant</li> </ol>	1	10			Not yet
2. Coriander	13	219	5	263.4	98
3. Broccoli					
4. Cauliflower					
5. Cabbage	3	221			
6. Morning glory	8	108	5	327	92
7. Pakchoy	8	140			125
8. Chilli	2	75			25
9. Onion	9	201	4	414	97
10. Cucumber	3	210	12	1,097	235
12. Sweet corn			11	4,727	
13. Amarantus	3	35			19
Total:	50	1,219	37	6,828.4	

During the month of May, 12 households produced 329 kg of mushroom and 72.1 kg of which were sold in Oudomsouk market and earned 721,000 kip.



Chilli garden at Pilot village

#### **Livestock:**

- 1. 6 pigs were vaccinated of swine fever
- 2. 102 poultries were vaccinated of New castle M
- 3. Conducted a meeting with villager to discuss on the wet season vegetable plan and also evaluated the achievement of the implementation of agriculture and livestock of pilot village.

#### **Marketing activity:**

We are still continuing to collect data on the vegetable price at Oudomsouk Market and this data informed immediately to pilot village. So, that which kind of vegetable should be grown and son on. The price of several vegetable could summary as below:

Cabbage: 8,000 kip/kg Chinese cabbage: 10,000 kip/kg Long bean: 9,000 kip/ka Coriander: 16,000 kip/kg Morning glory: 5,000 kip/kg 6,000 kip/kg Pakchoy: Chilli: 8,000 kip/kg 4,000 kip/kg Eggplant Tomato: 6,000 kip/kg Onion: 15,000 kip/kg Mint: 10,000 kip/kg Cucumber: 2,500 kip/kg Mushroom: 15,000 kip/kg

Lemon: 10,000 kip/kg

We forecasted that the price of several vegetable will be gradually increased every month throughout the wet season 2006 particularly the price of vegetable will be too high within the month of July and August.

#### **Monitoring of Household Income:**

The total household income of pilot village of May was 59,952,500 kip and 7,311,500 kip of which was from vegetable production or covered about 12.2% of total household income and 490,000 kip of which was from livestock or covered only 0.8% of the total household income while an income from service/other was 25,212,000 kip or covered 42.0% of the total household income. An average of household income of the month of May is 1,998,417 kip/hh (approx.: US\$190/hh). As mentioned in the progress report of March, April, most household worked for Village Forestry Association (VFA) as daily hired labor. Otherwise, the major source income of pilot village is directly from employment but the major source income of this month is from service /other as indicated in below table:

Source income	Amount (kip)	Percentage (%)	Overall rank
1. Crop production	7,311,500	12.2	3
2. Livestock	490,000	0.8	5
3. Employment	20,138,000	33.5	2
4. NTFPs	6,801,000	11.5	4
5. Service/Other	25,212,000	42.0	1
Total:	59,952,500	100.0	

# NB-Agricultural Extension Centre (Zone I)

### <u>Agriculture:</u>

1. Vegetable seedbed nursery activity at the Centre produced:

Chilli: 2,800 seedlings
 Eggplant: 1,000 seedlings
 Tomato: 3,000 seedlings

Vegetable seedlings production is on-going activity in order to secure for supplying regularly vegetable seedling to a new resettled villages;

- 2. Up to date, the land preparation for the pilot village in the coming wet season crops was carried out on an area 21.5 ha of 25 households;
- 3. 5,370 kg of organic fertilizer and 240 liter of BE liquid was produced, 2,130 kg of which was produced by 9 households of pilot village itself or an average each household received 237 kg of organic fertilizer;
- 4. 700 kg of organic fertilizer were distributed to Keng Gnao and 380 kg distributed to Boua Ma
- 5. Field crop seed multiplication was carried out on an area 1,200 m2 namely peanut and feed corn. Produced 3 kg of hot chilli seed and 5 kg of local chilli seed.

#### **Mushroom production:**

4,000 bags of sawdust were prepared for mushroom spores, 1,600 bags of which were supplied to 8 households of Sop On, 600 bags of which were supplied to 3 households of Phonsavang and other 400 of which were supplied to pilot to 2 households of Boua Ma. For pilot village, we did not supply any more of the mushroom spores' sawdust but the villagers produced themselves at our center and then they carried it to their mushroom house.

#### **Livestock:**

Livestock activity in the month May, we distributed 40 chickens to Keng Gnao and also will be distributed to other village. The breeding of frog will be conducted in the month of June or at beginning of wet season, so we are now preparing the breeding pond and other materials. We have now some livestock in the center as for breeding:

• Pig: 17 (including 2 boars and 6 sows)

Duck: 10Chicken: 136Rabbit: 17Frog: 500

# Nakai Neua Fruit Tree Propagation Centre

1. During the month of May, Nakai Neua fruit tree propagation center has produced the following fruit tree seedlings for supplying to a new resettlement village in the coming wet season 2006:

Grafted seedlings

Mango: 346Lemon: 180Litchi: 107

2. Grafted seedlings (marcotted branches) not yet cut out from parent plant:

•	Mango:	2,127
•	Lemon:	1,399
•	Litchi:	788
•	Jack fruit:	184
•	Mandarin:	273
•	Rose apple:	146

3. Up to date, we have the fruit tree seedlings in the nursery to be distributed to the resettlement village as follow:

Mango: 1,693 seedlings
Lemon: 4,329 seedlings
Litchi: 1,674 seedlings
Jack fruit: 220 seedlings
Rose apple: 363 seedlings
Mandarin 2,991 seedlings

4. Some fruit trees grafted were distributed to 9 households of Oudomsouk as follow:

Mango : 22
Lemon : 17
Litchi : 10
Mandarin : 7
Rose apple : 2

5. Produced 1,200 kg of organic fertilizer, 320 kg of which applied to the fruit trees plantation at the center. We have now 7,800 kg in the stock

## Theun Douan-Agricultural Extension Centre (Zone II)

1. Produced vegetable seed:

Waxy corn: 25 kg
 Longbean: 8 kg
 Onion: 25 kg

Most vegetable seed are to be distributed to resettlement village particularly Sop On and Phonsavang in the coming wet season 2006.

- 2. Produced 5,025 kg of organic fertilizer and 20 liter of Bio-Extract liquid (BE), 1,425 kg of which were applied to vegetable garden in the center, 3,150 kg of which were supplied to vegetable garden of Phonsavang and other 600 kg were supplied to vegetable garden at Sop On:
- 3. Distributed 600 seedlings of wild tea to 98 households of Sop On

4. Completed the construction a small mushroom factory. This small mushroom factory will commence soon to produce the sawdust bag with mushroom spores to supplying to Sop On, Phonsavang and other village

5. We have now some livestock in the center as for breeding:

Cow: 3 including one new birth

Pig: 1Chicken: 84Duck: 33Frog: 61

6. Produced fruit tree grafted such as:

Mango: 300Jack fruit: 50

# Forestry and Land Use Planning Allocation and Management (FLUPAM)

We are completed the village boundary demarcation of Phonphanpek-Nong Boua- Phonsavang-Boua Ma-Sop On-Ban Done. We are now proceeding to conduct the land use planning and land allocation of Sop On and Phonsavang in order to identify more detail of land potential to be use for livelihood program in the future. However, FLUPAM is on-going activity which is carried out by agriculture and livestock team but there needs more staff from DWG to work closely with NTPC's team.

In addition, the district boundary between Nakai and Gnommalat district is now under considering and discussing between two District Authorities which is undertaken and follow up by RMU. Up to now, we do not have any final decision marking.



Consultation on Land Use Planning and Land Allocation at Phonsavang village

## 2.3.5 Fisheries Reservoir Program

No change from the previous report.

# 2.3.6 Community Development Program

Abbreviations used in this section:

CD Community Development
PC Public Consultations
PCR Physical Cultural Resources
DCD District Community Development
LNFPC Lao National Front Committee

LWU Lao Women's Union VRC Village Resettlement

VRC Village Resettlement Committee VCD Village Community Development

All village group 1 census has been done through December 05 and January 06. Population census completed and meeting between NTPC/DWG and RMU organized on 06/01/06 and 17/02/06 to determine the families entitled and not entitled to resettlement package under CA. The report has been finalized in March and has been submitted to Resettlement Committee (RC) beginning April to proceed with proper policy on what to do with those who are not entitled. RC is still considering eligibility of additional families with respect to CA entitlement..

# Institutional Development: Village Resettlement / Development Committees

Consultation/information boards have been built in Nakai villages (existing villages), Gnommalat and Mahaxai.

#### **VRC** establishment and strengthening:

VRC established in 2004 in each village.

Reorganization Meeting with RO, RMU and DWG in 2005=> for villages bigger than 50 household ,VRC will be composed of 5 people. Smaller villages will have VRC of 3 people.

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•	Sop on:	5 people (2 women)
•	Bouama:	5 <u>people</u> (1 woman)
•	Nongbouakham:	5 people (2 women)
•	Phonsavang:	3 <u>people</u>
•	SopMa:	5 people (2 women)
•	Sop Phene:	5 people (2 women)
•	Sop Hia (near Thalang):	3 people (1woman)
•	Sop Hia/Nam Nian ( to Nam Pan ):	5 people (1woman)
•	Don:	5 people
•	Khone Kaen:	5 people

#### VRC training on role and duties:

On 2/02/06:
 On 8/02/06:
 On 22/02/06:
 On 22/02/06:
 On 15/08/05: at Nakai District:
 On 18/08/05: at Khamkeut District 24 attendants (8 women) at Nongbouakham.
 12 attendants (7 women) at Ban Don.
 26 attendants (11 women), 6 persons from RMU, 6 from NTPC and 14 from DWG
 2 attendants (1 woman),

Monthly Meetings changed to quarterly meetings.

Develop VRC roles in census and data management: Participation to the census done in 2005...

Training in management of Village Resettlement Office: District staff conducted training once. Management Training to VG1's RCs (49 people participated of which 13 women) on 21-22 Dec 05.

Population Management						
Final census and asset inventory	Census completed for VG1. (in Aug-Nov 05) by NTPC team and GOL.	VG2: being carried out				
Family registration books	Family books and house register in 2 villages (Khone Khen and Ka Oy). Village G1 – Sop Hia and Nam Nian census completed	Registration books completed for Ban Thalang, Ban Nakai Neua and ban Nakai Tai in April 2006.				
Make and issue citizen card	None	After resettlement in new villages.				

# Consultations

Consultations on relocation village detailed planning activities have been carried out at Ban SopOn, Phonsavang, SopHia, Bouama and Done during this month.

Follow up carried out for temporary house installation preparation.

Page 58 / 94

**Summary Consultation table** 

Name of the original villages VG1	New village area	General Consultation (1)	Pilot Village Visit (2)	Village Location (3)	Livelihood (4)	Village Layout (5)	Plot selection (6)	Detailed resettlement planning (7)
Sop Hia	Nam Pan Mai	10-29/05/04: 69 people	08/07/04: 6 people (2 women)	23/4/05: 44 people (22 women)	07/09/05: 99 people (52 women)	10/11/05: (house area) 61 people (18 women)		
Nam Nian	(Khamkeut District)	10-29/05/04: 45 people	18/07/04: 2 people	23-24/4/05: 26 people (7 women)	07/09/05: 59 people (25 women)	As Sop Hia above		
Sop Hia	Area 8a (Vietic)	Idem Sop Hia	Idem Sop Hia	See above		18/01/06: 18 people (6 women)	04/02/06: 20 people (11 women)	18/02/06: 31 people (14 women) and 04/04/06 23 people (12 women)
Bouama	Area 17	10-29/05/04: 58 people	14/07/04: 9 people (3 women)	17-19/5/05: 88 people (34 women)	29/8/2005: 145 people (69 women)	26/3/2005: 363 people (147 women)	09/12/05: 80 people (39 women)	21/02/06: 67 people (24 women)
Nong Boua				Done in 2002				
Keng Gnao (hamlet)	Area 16	As Sop Ma	As Sop Ma	As Sop Ma	As Sop Ma	As Sop Ma	14/10/05: 8 people (2 women)	06/02/06: 8 people (2 women)
Sop Phene	Area11	10-29/05/04: 85 people	17/07/04: 8 people	13/5/05: 50 people (19 women)	16/09/05: 94 people (48 women)	13/12/05: 60 people (30 women)	16/02/06: 57 people (24 women)	21/02/06: 51 people (25 women) and 20/04/06 13 people (2 women)
Nong Boua Kham	Area 9	10-29/05/04: 110 people	17/07/04: 10 people	21/6/05: 53 people (9 women)	4/8/05: 157 people (79 women)	16/12/05: 57 people (32 women)	09/02/06: 50 people (20 women)	
Phonsavang	Area 18	10-29/05/04: 37 people	14/07/04: 18 people	17-19/3/05: 38 people (19 women)	26/7/05: 40 people	27/3/05: 167 people (84 women)	16/11/05: 45 people (15 women)	24/02/06: 34 people (11 women)
Sop On	Area 19	10-29/05/04: 189 people	18/07/04: 10 people	17-19/3/05: 114 people (66 women).	27/7/05: 143 people (89 women)	15& 26/07/05: 492 people (227 women).	01/03/06: 97 people (50 women)	22/02/06: 86 people (54 women)
Sop Ma	Area 8	10-29/05/04: 112 people	15/07/04: 12 people	11/5/05: 62 people (23 women)	30/8/2005: 105 people (60 women)	19/12/05: 74 people (24 women)	26/01/06: 72 people (29 women)	23/02/06: 23 people (9 women) 06/04/06 (13 people) 2 women

| Hat Khamphane<br>(hamlet) | As Sop Ma | 22/02/06:<br>31 people (5<br>women) |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-------------------------------------|
| Keng Gnao                 | As Sop Ma                           |

For Sop Hia and Nam Nian, re-start consultations due to goldmine.

Name of the original villages in VG2	New village area	General Consultation (1)	Pilot Village Visit (2)	Village Location (3)	Livelihood (4)	Village Layout (5)	Plot selection (6)	Detailed resettlement planning (7)
Thalang	Area 13	10-29/05/04: 93 people	17-18/07/04: 10 people	23/6/05: 70 people (21 women)				
Nakai Tai	Area 2	10-29/05/04: 163 people	15/07/04: 5 people	22/5/05: 200 people (60 women)				
Nakai Neua	Area 1	10-29/05/04: 91 people	16/07/04: 9 people	20/5/05: 80 people (32 women)				
Done	Area 21	10-29/05/04: 111 people	13/07/04: 9 people (3 women)	29/4/05: 134 people (28 women)				19/02/05: 85 people (51 women)
Ка Оу		10-29/05/04: 57 people	18/07/04: 5 people		31/8/05: 29 people (7 women)			
Khone Khen	Area 22	10-29/05/04: 84 people	13/07/04: 7 people (4 women)	1/4/05: 46 people (24 women)				18/02/06: 47 people (13 women) and on 03/04/06 14 people (1 woman)
Phonphanpek**	Area 15 for irrigation only	10-29/05/04: 108 people						
Oudomsouk**		10-29/05/04:				(29/4/05) 49 HH		

# Main progress during the reporting period include:

# on-farm CD

No	Activities / Locations	Dates	Participants	Outputs/ Results
1	Nutrition training for nursery teacher 8 villages (Nongboua, Sop Hia, Done, SopMa, Bouama, Phonsavang, SopPhene, Nongbouakham)	29/5/06 - 30/5/06	26 persons	Trainees understood how to cook, especially for kid.
2	Monitoring and providing rice, protein to be on time for Ban SopOn, Phonsavang, Bouama, Keng relocations	15 May 06	SopOn Phonsavang Bouama Keng Gnao	Completed providing rice and protein for addition villagers moved to relocation. Dry meat: 156 Kg Dry fish: 156 kg Egg: 1560 Rice: 575,2 kg
3	Monitoring and providing rice, protein to be on time for Ban SopOn, Phonsavang, Bouama, Keng Gnao, Sop Hia relocations	22 May 06	SopOn, Phonsavang, Bouama: Keng Gnao (NB), Sop Hia	Completed providing rice and protein for addition villagers moved to relocation. Dry meat: 175 Kg Dry fish: 175 kg Egg: 1750 Rice: 517,8 kg
	Monitoring and providing rice, protein to be on time for Ban SopOn, Phonsavang, Bouama, Keng Gnao, Sop Hia relocations	29-30 May 06	SopOn, Phonsavang, Bouama: Keng Gnao (NB) and Sop Hia	Completed providing protein for addition villagers moved to relocation.  Meat: 204.4 Kg Dry meat: 204.4 Kg Egg: 2044 Rice: 2176 kg

# On-farm CD

No	Activities / Locations	Dates	Participants	Outputs/ Results
1	Agreement Contract (meat for village relocation)	8/5/06	SRO: 2per DWG: 3 pers Company who procure meat for village relocation: 5 person Total: 10 pers (2 women)	Agreement Contract completed. (between Oudomsouk villager and company) and will be supplied once per week
2	Discussion meeting (vulnerable families policy)	12/05/06	RMU: 1 per SRO: 2 pers DWG: 3 pers Total: 6 pers	Vulnerable families policy (Draft) and will be have meeting again.
3	Evaluation meeting - Nongboua income	3- 5/5/2006	RMU: 2 per SRO: 7 pers DWG: 5 pers 83 villagers Total: 97 pers (53 woman)	Average income per family 9,055,741 kip / year. Village have main work as details: 10 families – garden 16 families – labor 2 families – trade 1 family – fishery Villager 're raining season crop plan year 2006 and livestock plan
4	To explain to villagers about money user (NTPC paid for labor cost-temporary house)	13/5/06	SRO: 1 per DWG: 4 pers 13 villagers Total: 18 pers (3 woman)	Villager understood
5	Preparing document (Economic Income form)	15/5/06	SRO: 1 per DWG: 3 pers	Agriculture income form - for data collection; how to collect data in 5 target village (Thalang, Nakai Neua, Nakai Tai, Done and Khone Kaen)
6	Marketing study tour (Gnommalat and Km 20 market)	16/5/05	RMU: 1 per DWG: 1 per Villager: 25 pers Total: 27 pers (25 women)	Head of group (3 persons) from Nongboua  - vegetable cost in each season  - Cost for retail and whole sell  - which vegetable is expensive and cheap.  - Which vegetable is good for sell
7	Meeting with Nongboua families – Trade need assessment.	27/5/06	SRO: 1 per DWG: 2 pers Villager: 7 pers Total: 10 pers (5 women)	Get data from 5 families who are interested in trading:  - Need fund for open small shop  - Need fund for meat sell group (for village)

# ICD

No	Activities / Locations	Dates	Participants	Outputs/ Results		
1	Bane Khone Kaen Resettlement Village layout consultation	2-3 /5/06	45pers (13women)	All understand and agree with the Bane Khone Kaen village Layout.		
2	Bane Done Resettlement Village layout consultation	4 /5/06	109pers (47women)	All understand and agree with the Bane Done village Layout.		
3	Bane SopHia to Area 8a relocation village activity planning problems(House plots)	9/5/06	SRO: 3 pers DWG: 2 pers RMU: 2 pers Villager: 6 pers Total: 13 pers	All understand and agree with the Sop Hia to Area 8a relocation village planning activities		
4	Conduct training of WUG leaders on cropping calendar and water delivery ( Nongboua pilot village )	11-12/5/06	14pers (2women)	Participants' evaluation:  Very good: 50.5 % Good: 30.2 % Fair: 19.3 %		
5	Bane NamNian/SopHia Resettlement Village layout consultation ( Area 7 is a potential site )	15-16/5/06	16pers (4women)	All understand and agree with the Bane NamNian/SopHia village Layout.		
6	Conduct training of WUG leaders on safety in pump electricity using ( Nongboua pilot village )	17/5/06	13pers (4women)	Participants' evaluation:  Very good: 38.4 %  Good: 30.8 %  Fair: 30.8 %		
7	Workshop on wet season cropping calendar (Nongboua pilot village)	20/5/06	27 pers (5 women)	Cropping calendar formulated		
8	Follow up Ban Boua Ma and Ban Sop Ma villagers temporary house installation	22-26/5/06		- House/School installation:  1. Ban Boa Ma      Temporary house     Toilet     Primary school     Nursery school     Well Pump  2. Ban Sop Ma:     Temporary house     Toilet     Primary school     Nursery school		

Conduct training of WUG leaders on safety in pump electricity using ( Nongboua pilot village )  $\,$  17 May 2006







Workshop on wet season cropping calendar (20/5/2006)





# PCR & RS (CD)

No	Activities / Locations	Dates	Participants	Result
1	Summana – How 's VRC work plan	31/5/2006	SRO: 1 per RMU: 1 per DWG: 2 pers DCD: 2 pers Villager: 15 pers Total: 21	Participants' evaluation: Very good: 48.9% Good: 38.25% Fair: 12.85

**Social Activities** 

**Downstream Areas** 

# 2.4 Downstream Areas Development Plans

The NTPC Downstream Program will provide finance for village revolving funds as a major tool for villagers to implement the restoration of assets and livelihoods and increase their household income at project affected villages in downstream areas. Special training courses and workshops for VDCC's, VAC's, and AVC's have been held to strengthen the institutional framework and increase capacity on village level.

The VDCC opens a village bank account and transfers money made available by NTPC's Downstream Program to households organized within focus groups. Village focus groups coordinate implementation of household business plans according to activity as (i) fish culture, (ii) livestock, (iii) agriculture, (iv) home gardens, etc., etc.

In addition to increasing the actual availability of cash to villagers, and the capacity to manage this cash, the Downstream Program provides technical assistance by sector specialists to focus groups and households on specific request by villagers and VDCC's to help formulate household business plans. For instance an Aquaculturist, a livestock specialist, and an agriculture specialist have been assigned by the Downstream Program to formulate household business plans and help households in implementing these plans at the demonstration village of Beungxe.

In Beungxe Village different focus groups have been formed on agriculture, horticulture, fish culture, and fish catch monitoring. More recently, the livestock focus group has been formed. But poultry has been put on hold for the coming half year till more secure measures can be formulated and implemented to avoid outbreaks of bird flu and cross-over to human beings.

One of the major opportunities for livelihood restoration is crop diversification during the dry season. Many villages have existing irrigation systems for their paddy lands. However, in many villages these irrigation systems are not operated during the dry season as the costs of pumping water for rice culture is too high. As a result of high pumping costs for dry season rice culture (naseng), households in many villages have decided to stop operating their irrigation systems during the dry season. By diversifying from rice to other crops during the dry season, pumping costs can be considerably reduced. Thus, if households are able to obtain a reasonable price for their agriculture crops that will be produced during the dry season, and if households diversify to crops that consume considerable less water than rice, households can reduce pumping costs and increase their income considerably.

In the demonstration village of Beungxe, households have diversified during the past dry season from irrigated dry season rice to tobacco, cabbages, chilies, soy beans, cucumber, water melons, tomatoes, peanuts, and yams (man phao). Households have grown some of these crops on their own without any technical assistance provided by NTPC's Downstream Program (tobacco, peanuts, cabbages, soy beans), other crops have been grown with technical assistance provided by NTPC (water melons, tomatoes). However, all households apart from those that grew tobacco, have made use of the revolving fund made available by the Downstream Program to cover their investments and costs that had to be made before selling their harvests. All the above crops grown during the past dry season in Beungxe have proven to generate a much higher profit for households than dry season irrigated rice.

Apart, from agriculture and horticulture, other livelihood restoration options as fish culture, fish catch monitoring, and livestock are in the process to form a sustainable livelihood option or contributing to the rise of household income in Beungxe demonstration village. Household business plans for these options have been formulated in Beungxe village and implementation is in the process.

Presently, the Downstream Team is extending its activities from the demonstration village of Beungxe to 20 pilot villages. In these 20 villages the institutional framework is in the process to be set up, village bank accounts are opened, training courses are held to increase management capacity, focus groups are identified, and household business plans are to be formulated (see the following table).

Village	Account Name	No Bank Account	Location	District	Number of HH	Revolving Fund [USD/HH]	Total Village Amount [USD]	NTPC Transfer [Kip]
Pha Thung/Phone Khene			Hinterland		75	200	15,000	
Nong Ping			Riparian	Gnommalath	115	200	23,000	
Khoksavang			Hinterland		78	200	15,600	
Mahaxai Tay	Mahaxaytai VDCC NTPC	020.00.4545000.30027.2	Riparian		185	250	46,250	
Pova Tay	Povatay VDCC NTPC	020.00.4545000.30029.8	Riparian	Mahaxai	111	250	27,750	
Pova Neua	Povaneua VDCC NTPC	020.00.4545000.30030.2	Riparian	Wallaxal	88	250	22,000	
Khamfeuang	Khamfeuang VDCC NTPC	020.00.4545000.30032.8	Hinterland		95	250	23,750	
Keng Pe	Keng Pe VDCC NTPC	020.00.4545000.30027.2	Riparian		87	250	21,750	
Vernsananh	Veunsananh VDCC NTPC	020.00.4545000.30024.3	Riparian		72	200	14,400	
Hat Pek	Hat Pek VDCC NTPC	020.00.4548000.31418.6	Riparian	Xe Bangfai	33	200	6,600	
Ban Sang			Hinterland	Ae Dangiai	246	-	-	
Yangkham	Yangkham VDCC NTPC	020.00.4545000.30028.5	Riparian		244	200	48,800	
Hat Khamhieng	Hatkhamhieng VDCC NTPC	020.00.4545000.30032.8	Riparian		233	200	46,600	
Hat Xaifong			Riparian	Nongbok	70	150	10,500	
Navangneua			Riparian	Nongbok	154		38,500	
Vernsivilai			Hinterland		153	150	22,950	
Beung Xe	Beungxe VDCC NTPC	020.00.4545000.30026.9	Riparian		123	250	30,750	191,081,000
Beungbouathong			Hinterland	Xaybouli	132	100	13,200	
Nasang			Riparian	Aaybouii	196	100	19,600	
Thaphoxai			Riparian		109	100	10,900	
Nonenakham	Ban Nonenakham VDCC NTPO	020.00.4545000.30057.5	Hinterland		90	100	9,000	
							466,900	

Depending on village location and the by households proposed restoration activities, the main focus group activities in the villages will consist of:

- 1. WASH: Water Supply, Sanitation, and Hygiene;
- 2. Agriculture;
- 3. Horticulture, including Home Gardens;
- 4. Fish culture;
- 5. Livestock and Poultry;
- 6 Ground Water Irrigation:
- 7. Fisheries Co-Management and Improvement of Existing Water Gates;
- 8. Flood Protection through Construction of Mini-Polders;
- 9. Fish Catch Monitoring.

Another recently identified interesting restoration activity is the planting of Mak Ngeo (*Jatropha curcas* Linn.) that can serve as fencing to keep the roaming currently free roaming livestock as water buffaloes, cows, and goats out of the paddy areas. Mak Ngeo is also producing fruits and seeds that can be sold as a source for bio-fuel. Mag Ngeo seeds have a present market value of 1,000 Kip per kilogram when sold by villagers to commercial companies. Mak Ngeo planting thus can serve for three reasons as a solid restoration option: (i) No wood has to be cut from existing forest areas for fencing purposes, (ii) Fencing, and (iii) Increasing income by collecting and selling of seeds by project affected households. Many households in the villages are much interested to plant Mak Ngeo for these purposes.

To implement all these proposed activities appropriately and in time, the Downstream Team will need to be extended. At the moment advertisements for additional staff/consultants are published in Lao PDR and in Thailand to cover a number of positions.

A fish catch monitoring program has been set up in 38 villages, by the selection of 5 households per village that fill in forms on a daily basis regarding their fishing gears, fish species, other aquatic animals and plants, aquatic habitats, fishing grounds, amount caught and collected, and amount traded and consumed. In total 190 households have followed a training course how to fill in their forms to monitor daily fish catch and collection of aquatic products. Five catch monitors have been selected and recruited through the Districts to ensure that households fill in their forms correctly.

Province	District	Villages	District Monitors	Participating Households
Borikhamxai	Khamkeurt	11	1	55
Khammouan	Gnommalath	6	1	30
	Mahaxai	6	1	30
	Xebangfai	6	1	30
	Nongbok	2	4	10
Savannakhet	Xaibouly	7	l	35
3	6	38	5	190

The Downstream Program is presently in the process to recruit an organization to enter the data in a database for proper analysis.

# **Social Activities**

**Internal, External Monitoring** 

# 2.5 Internal and external monitoring

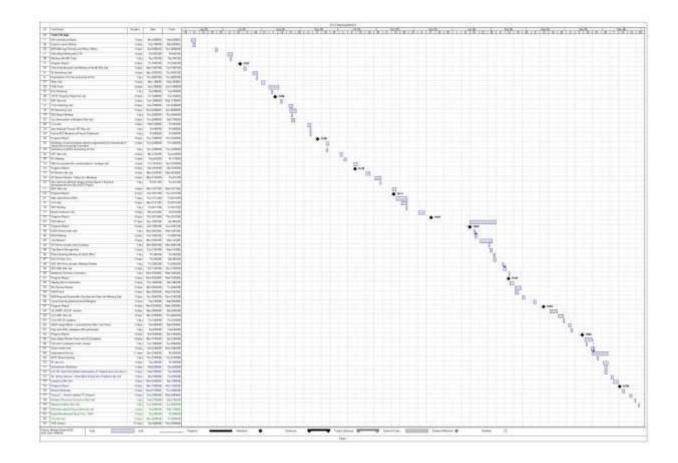
IMA Appointment not finalized by GOL/WB.

NTPC and the GOL decided to move forward with NTPC handling the procurement process on behalf of the GOL. Consultants' Qualification Selection method (CQS) was chosen.

Advertisements have been posted in local (Vientiane Time) and International (Bangkok post and UNDB Online) media during the second half of May 2006. Deadline for receipt of Expressions Of Interest is 13th of June 2006.

In the meantime – 29 May 2006, NTPC has officially asked the GOL to designate its personal who will participate in this procurement.

Schedule of visits since Financial Close: Visits of the month in blue - Next scheduled visit in green.





#### 3 **Environmental activities**

#### 3.1 General

In addition to the monitoring of the HC's construction activities, reported in the Construction section of the report, and the PCR activities reported in section 2.1.1, the main activities of the Environmental Management Office in May 06 have included the following:

- Water quality sampling (25-28 May) and analysis
- Review of the final report of the elephant program submitted by Wildlife Conservation Society on 31 May 2006
- Continued activities for the baseline survey for fish and aquatic species in upstream and downstream rivers (Wildlife Program Element B) and review of the field report submitted by the ichthyologist on 22 May 2006.
- Review of the Inception Report for the Technical Assistance to the Environmental Management Unit (EMU) submitted by Earth Systems Lao on 30 May 2006. The objectives of the Inception Phase are presented below. The detailed Environmental Monitoring Program (EMP) has not been included in this draft of the Inception Report but Earth Systems Lao have indicated that the EMP shall be presented to NTPC on 20 June 2006:
  - Identify the core GOL obligations to be implemented by the EMU, with respect to the Environmental Measures
  - Assist the EMU to coordinate its work with other governmental authorities and non-governmental agencies concerned with environmental objectives
  - Conduct a training needs assessment or SWOT analysis to identify institutional knowledge gaps
  - Develop office management capacity of the EMU
  - Advise GOL regarding the requirement for, and contracting of, specialty studies to be conducted over the term of the TA Programme.
  - Develop an Environmental Monitoring Programme
  - Assist the EMU with the procurement of the Environmental Independent Monitoring Agency
  - Equip the EMU office located at the STEA Vientiane, EMU provincial offices, field office
  - Identify any variations in the scope of the work of the TA Programme.

#### 3.2 **Wildlife Programmes**

The description of the various elements of the components of the wildlife programme is kept to remind the reader of the nature of the programme.

#### 3.2.1 Fish Impacts in upstream and downstream river species

This programme includes the following activities:

- 1. Species and habitat inventory (NT, XBF)
- 2. Monitoring of fish productivity
- 3. Fish migration studies in NT, NPA and XBF4. NT habitat and flow studies
- 5. Modification of downstream NT habitat
- 6. Implementation of flow adaptive management programme and related activities
- 7. Incorporating river protection into the management of the NNT and Corridors

The baseline survey for fish and aquatic species in upstream and downstream rivers (Wildlife Program Element B) was conducted during the period of 18 April to 12 May 2006. The baseline survey was undertaken by the ichthyologist and his team with support from Living Aquatic Resource Research Center (LARReC). The objectives are to obtain a baseline fish and aquatic species (decapod crustaceans, turtles and amphibians) distribution and a habitat inventory in the downstream and upstream sections of the Nam Theun and Xe Bang Fai, including the Nam Phao/Nam Kata catchments.

The baseline survey is now complete and a field report was submitted on 31 May 2006, which is currently under review. The main field observations include:

- XBF between Nam Phit and downstream of Mahaxai: Compared to 1996, there is more algae growing on the substrate, the water is more turbid, the shores are muddier and there is more disturbance by buffalos. The number of fish species and individuals were lower at each sampled site.
- XBF upstream of Nam Gnom: The river was more or less standing water with large mats of floating rotten algae, with very low fish density but apparently good diversity.
- Upper Nam Theun: The fish density and diversity does not seem to differ from those observed in 1996.
- Nam Theun downstream of Dam Site: At the second rapid below the dam, the rocks and shore were covered by fine sediments. The fish diversity was low with many of the species expected in such a habitat missing. However, a sample taken upstream of the dam site did not show much difference in the number of species and composition.
- Nam Kata: Near to Road 8 the substrate was covered by sediment and algae with high (estimated 35-40 C) water temperature. Few fish species were identified. Further upstream, there were fewer algae and sediment, clear and cooler water, but still not a high number of fish species.
- The Nam Phao: Upstream of Lak Sao the boulder river bed was completely filled by sediment which is likely to be resulting from non-Project related renovation of a road. Extraction of material appears to be impacting the Nam Phao.

Outputs will be used as the basis for monitoring operational impacts and to provide recommendations on (i) the possibility and feasibility of modifying the morphology of the Nam Theun downstream as far as the Nam Phao tributary to increase its ability to support aquatic life; (ii) prevention of impacts on aquatic systems from construction and salvage logging activities, (iii) the need for ecological research, surveys and/or monitoring; (iv) a strategy to look at the migration patterns of common and important commercial species in the areas.

The results of the monitoring program will be provided to the Adaptive Management Committee.

The final report is scheduled to be submitted on 31 July 2006.



Fishing cryptic habitats on the Nam Theun

# 3.2.2 Terrestrial animals in the inundation area

This programme includes the following activities:

- 1. Pre-impoundment species and habitat inventory, distribution and movement
- 2. Post-impoundment species and habitat inventory, distribution and movement (non-inundated part of the NP)
- 3. Development of a post-impoundment species management programme
- 4. Implementation of a post-impoundment species management programme
- 5. Finalization of the TOR for the survey components of the wildlife programme (fish and terrestrial animals).

Finalization of the TOR for the survey components of the wildlife programme (fish and terrestrial animals).

# 3.2.3 Asian Elephant Program

This programme includes the following activities:

- 1. Pre-impoundment inventory and survey of habitats, distribution, movements.
- 2. Implementation of a pre-Reservoir impoundment elephant management programme.
- 3. Post-Reservoir impoundment monitoring of movements and distribution.
- 4. Training of local authorities in conflict response and emergency response.
- 5. Establishment and implementation of an elephant conflict response team.
- 6. Development of a transitional strategy for reservoir impoundment.
- 7. Implementation of a reservoir impoundment elephant strategy.
- 8. Implementation of post impoundment elephant programme.

Phase I of the Elephant Program is being conducted by Wildlife Conservation Society (WCS). Phase I includes items 1, 4 and 5 above. The training, survey and monitoring components of Phase I have been completed and the Final Report for Phase I was submitted on 31 May 2006.

A review of the Final Report has identified that the report is still lacking a full assessment for the majority of activities under the TOR; including (i) population estimate based on fecal DNA; (ii) seasonal movements based in DNA capture-mark-recapture; (iii) HEC - analysis of extent; (iv) habitat/resource use; and (v) feasibility of creating artificial salt licks. However, the Final Report provides the following summary:

- A total of 15 villagers from Ban Oudomsouk and Thalang have been recruited and trained in line transect and dung classification methodology;
- A total of 545 elephant dungs were identified along 116 line transects with total lengthen of 183 km in the high density stratum. Only 1 elephant dung was identified along 56 km of transects in the low density stratum.
- The dung encounter rate was 3.0 dung/km in the high density stratum.
- The decay rate was calculated at 150 days.
- A population estimate of 142 (95% CI=97,207) individuals based on the line transect and dung decay data. This compares to previous estimates of between 100-400 individuals. The population will also be estimated using fecal DNA capture-mark-recapture.
- A total of 265 faecal samples were collected for the fecal DNA based capture-recapture survey. The fresh dung piles exhibited localized distribution with no fresh dung identified in Thalang, Nongbouakham, Nakai Neua and Tai, Nong Boua and Khone Kaen. WCS indicate that this localized distribution might result from only a small number of elephants present south of the Nam Theun. Fecal DNA samples have been shipped to the US for analysis.
- A total of 141 Human-Elephant Conflicts (HEC) were reported during October 2004 to March 2006, with 116 (82%) of these occurring on the Nakai Plateau. The monthly HEC rate indicates a relative low-level across the entire area with <13 incidents per month. The exception in September and November 2005 with >13 incidents per month.

WCS have been identified as the consultant likely to conducted Phase II of the elephant program and contract negotiations are underway. The overall objectives of Phase II are to develop and implement an elephant management plan based on the data from Phase I.

During the period between the end of Phase I and the commencement of Phase II, HEC monitoring shall continue to obtain data on the spatial and temporal distribution of HEC on the Nakai Plateau and surrounding areas.

# 3.2.4 Transitional Strategy for Reservoir Impoundment

This programme includes the following activities:

- Development of a strategy and measures targeting wildlife during salvage logging of the Nakai Reservoir.
- 2. Implementation of measures during salvage logging.
- 3. Development of a transitional strategy for reservoir impoundment.
- 4. Training of local authorities in wildlife emergency response.
- 5. Establishment and implementation of an emergency response team.
- 6. Public awareness programme.
- 7. Prevention and prohibition of wildlife trade.

# 3.2.5 Wetland Conversion and Formation Program

This overall program includes the following activities:

- 1. Pre-impoundment species and habitat inventory, distribution and population.
- 2. Development of a strategy for species and habitat management after impoundment.
- 3. Implementation of habitat and species management programme.
- 4. Implementation of biodiversity aspects of reservoir management plan.
- 5. Patrolling of special conservation areas (WMPA).
- 6. Post-impoundment monitoring of populations and distribution.
- 7. Post-impoundment reservoir fish productivity and species monitoring.

A consultant has been identified to implement items 1 and 2. A detailed work plan is being developed and contract negotiations are underway. The proposed commencement date for the pre-impoundment baseline species and habitat inventory is scheduled for late June. The pre-impoundment baseline will continue until October 2006 to survey the migratory birds which use existing wetlands on the Nakai Plateau as a resource. The pre-impoundment baseline will have a component dedicated to mapping the distribution of the White-winged Duck and potential habitat areas. A summary of the TOR for the baseline survey and development of the plan is presented below:

- Conduct a pre-inundation baseline species and habitat inventory and map distribution for rivers and wetland habitats on the Nakai Plateau; both within and outside the inundation area of the Nakai Reservoir. The species inventory shall include fish, birds, reptiles and mammals associated with the wetlands on the Nakai Plateau, but paying particular attention to the focal species.
- Mapping potential areas of White-winged duck habitat on and around the Nakai plateau, and conduct field surveys to assess habitat quality and search for White-winged ducks in all identified areas.
- Conduct an investigation of the impacts, species assemblage and management measures for at least four existing reservoirs of different ages in Lao PDR or northern Thailand.
- Use the data to develop a post-impoundment wetland species management plan.

# 3.2.6 Adaptive Management Programmes

An Adaptive Management approach will be implemented for the following programmes:

- 1. Wildlife Programme (all components)
- 2. Riparian release downstream of the Nakai Dam
- 3. Water release in the Nam Kathang
- 4. Water release from the regulating pond to the downstream channel

Page 77 / 94

# 3.3 Water Quality Monitoring and Assessment Programme

NTU: Nephelometric Turbidity Unit.

ANZECC: Australian and New Zealand Environment Conservation Council (Guidelines for Fresh and Marine Water Quality)

TSS: total suspended solids (mg/L)

During May 2006, the WQMAP monitored 27 parameters at eleven surface water sampling sites. The eleven surface water sampling sites are located upstream and downstream of construction areas on the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bang Fai. For the second month running, at the time of sampling there was no flow at the upstream control site (SW4) on the Nam Kathang and therefore no samples for field or laboratory analysis could be taken. Given the ongoing elevated sediment load in the Nam Kathang the spatial distribution of turbidity was assessed along the Nam Kathang.

Sample collection and field analysis was conducted during 25-28 May 2006. The major field observations and analyses can be summarized as follows:

- The measured turbidity downstream of the Access Adit discharge point was greater than the upper detection limit of the turbidity meter (>1100 NTU); i.e., more than 5-times the recommended ANZECC guideline. Turbidity in the Nam Kathang remained above the Project (ANZECC) guideline (200 NTU) for over 15 km downstream of the Access Adit discharge.
- The measured turbidity (85 NTU) in the Nam Phit has increased significantly compared to the previous month but still remains within the ANZECC guideline. The sharp increase in turbidity is likely to be a result from rain events and the recent UXO clearing and construction activities along the alignment of the Nam Phit.

Laboratory analyses for the May 2006 sampling event will be reported in the June 2006 monthly report.

The laboratory analytical results for April 2006 are now available. In summary,

- Despite a few exceedences of the ANZECC and river-specific guidelines the water quality in the Nam Theun can still be considered good. TSS was elevated downstream of the Ban Thalang Bridge (SW2) and downstream of the Nakai Dam site (SW3) but remained within the ANZECC guideline. These elevations of TSS are consistent with the field observations in April 2006. Highly turbid water was observed being generated by construction activities at the Permanent Ban Thalang Bridge and Nakai Dam construction areas.
- Water quality in the Nam Kathang continues to be significantly impacted by construction activities and in particular the discharge from the Access Adit. Nine of the parameters downstream of the Powerhouse (SW5) exceed either the ANZECC guidelines or riverspecific guidelines.
- The water quality in the Nam Gnom continues to be good with few significant exceedences of the ANZECC guidelines, river specific guidelines, or acceptable control range.
- Water quality in the Nam Phit can still be considered as good despite the sluggish conditions. Conductivity and calcium exceed the ANZECC guidelines, which likely reflects a higher proportion of groundwater input in the flow in dry season conditions.
- Water quality in the Xe Bang Fai also continues to remain good with few exceedences of the ANZECC guidelines or river-specific guidelines.

# 3.4 Internal and external monitoring

cf. paragraph 2.5

# 3.5 Environmental measures linked to construction

The environmental activities linked to construction works are part of the Construction Progress Report (Part B of the whole Monthly Progress Report).



# 4 GOL related activities

# 4.1 Watershed Management Protection Authority (WMPA)

Independent Monitoring Agency (IMA)

During 2005, the WMPA short listed several suitably qualified international and national candidates for the IMA with assistance of consultants from the Asian Development Bank (ADB). As part of the process of selection, two international and two national candidates were identified. Further discussions with one international candidate revealed that his salary requirements were not in line with the budget of the WMPA and its IMA requirements. One of the national candidates for the IMA was considered by World Bank Officials to have a conflict of interest as he was part of the ADB Technical Assistance programme to the WMPA. As a result of the aforementioned reasons, and timeliness, WMPA has requested a no-objection from NTPC to proceed with a single international candidate and a single national candidate to be the IMA for this fiscal year. NTPC will provide confirmation of its acceptance of this approach for this fiscal year. WMPA intends to have the first official field mission of the IMA in late May 2006.

## Independent Auditor

WMPA is currently developing a suitable terms of reference (TOR) and timetable for its auditors which is in line with the Concession Agreement. There are only a few auditors registered in Lao PDR which are considered to be of international standing. The WMPA intends to have an audit conducted during the second quarter of 2006.

# 4.2 Optimization of salvage logging on the Nakai Plateau

The GOL is in negotiations with potential logging Contractors for the larger diameter timber on the Nakai Plateau. The GOL now expects this logging activity to begin after this years' monsoon season. Negotiations have taken longer than expected due to some capacity constraints and financial limitations of the potential Contractors. Once negotiations are complete with the potential contractors and their deposits are received by the GOL, construction of the new logging track to Road No. 12 and the minor improvements of Road 8B from Ban Nam Nian to Laksao will commence. The Environmental Impact Assessment for the new logging track is near completion. A draft report of The Social Impacts of the Salvage Logging Operation has been available since mid-March.

## 4.3 Social issues

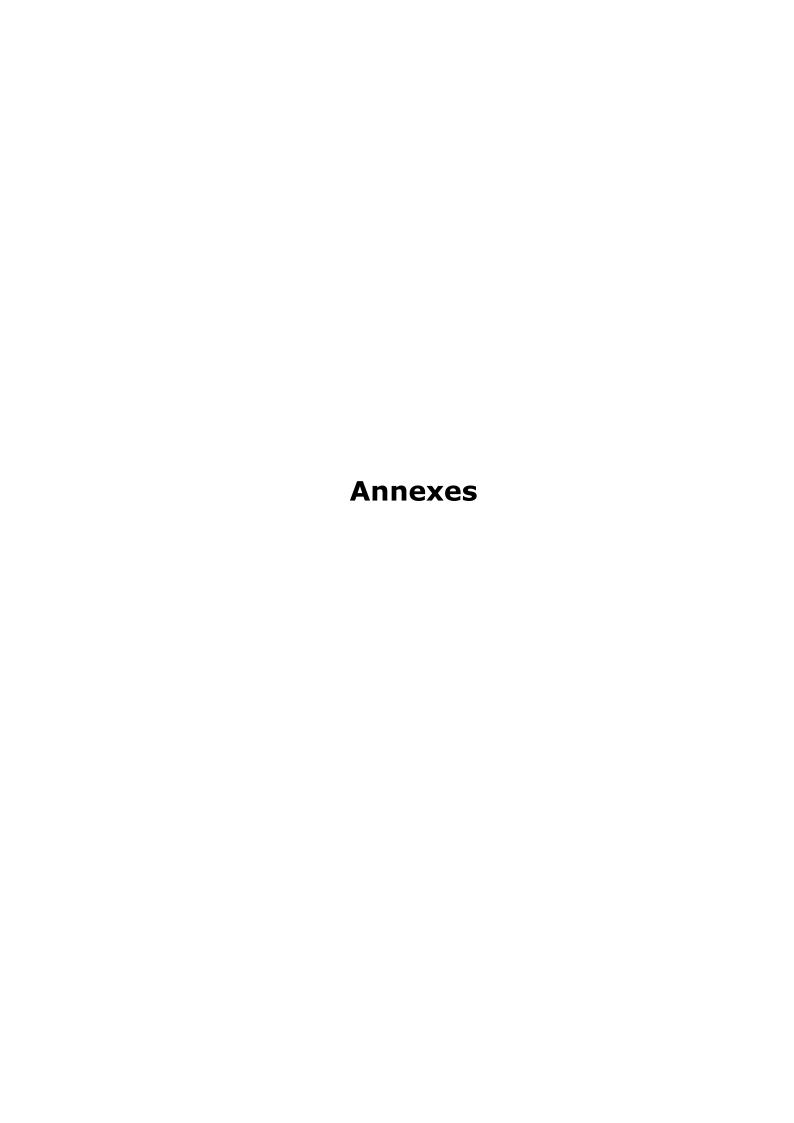
A Resettlement Committee (RC) meeting was held on 15 March 2006 at the Governor's Office in Thakhek. The main outcomes of that meeting are as follows:

- The budget compared to expenses will be reviewed and if savings are identified, those savings can be considered to be used for the adjustment of the above mentioned per diem rates.
- Budget F includes GOL expenses related to Nakai plateau resettlement and project lands.
  The principle of any areas directly affected by construction activities are include in budget F
  (CA Schedule 4, Part 1). The agreed DSA rates apply to both Schedule 4 Part 1 and
  Schedule 4 Part 4 activities.
- The principles of any areas indirectly affected by NT2 project are considered part of the downstream program (CA Schedule 4, Part 4).
- According to the latest POE recommendations, it was agreed that strengthening the capacity and implementation of District activities is a top priority, especially Nakai District.

Khamkeut District officials have identified at least one potential site for the resettlement of Ban Sop Hia and Ban Nam Nian. This site, however, already has a host population of approximately 80 households. NTPC and GOL will review in further detail to assess whether or not this site would be technically suitable for resettlement for the villages of Ban Sop Hia and Ban Nam Nian. Other potential sites for resettlement include areas on Nakai Plateau which are currently under technical review by NTPC and GOL. Consultations with the villagers of Ban Sop Hia and Ban Nam Nian are ongoing. It should be noted that both Khammouane and Bolikhamxay officials welcome these two

villages in either Province so the final decision rests with the outcomes of technical studies of suitable sites, and the preference of the villagers themselves.

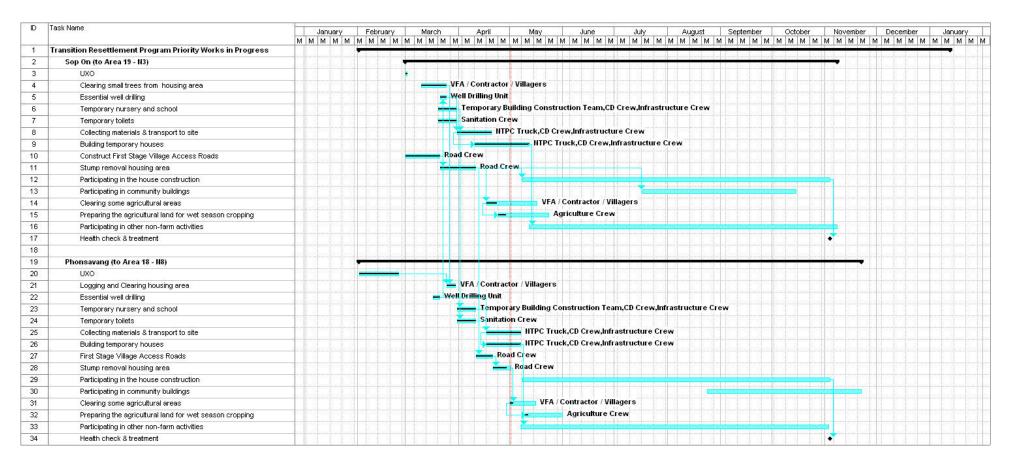
The Lao Army is currently assisting in UXO clearance to accelerate the overall UXO clearance programme to better meet the needs of the resettlement schedule. The original contract with the Lao Army has been expanded to include additional resettlement areas for clearance. The Army reports that little UXO has been found in their clearance area to date, and will issue a full report to NTPC when their work is complete.



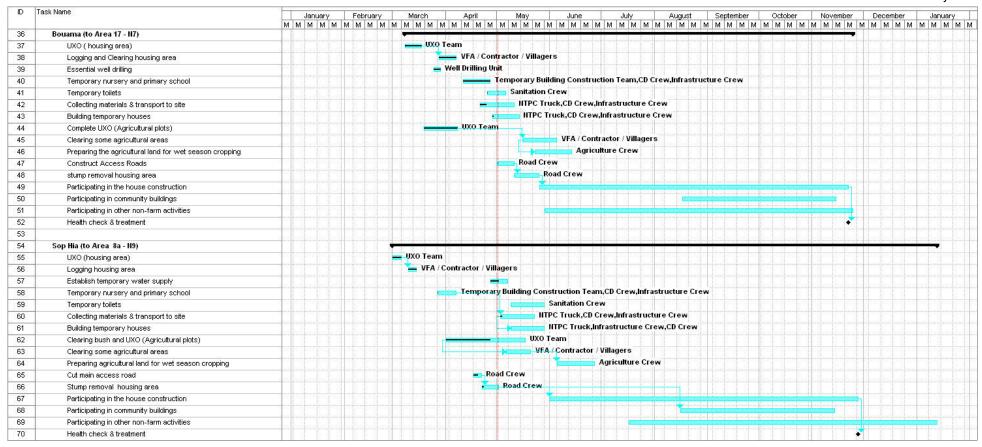
Proposed NT2 Reservoir Nakai Plateau Village Relocation Routes



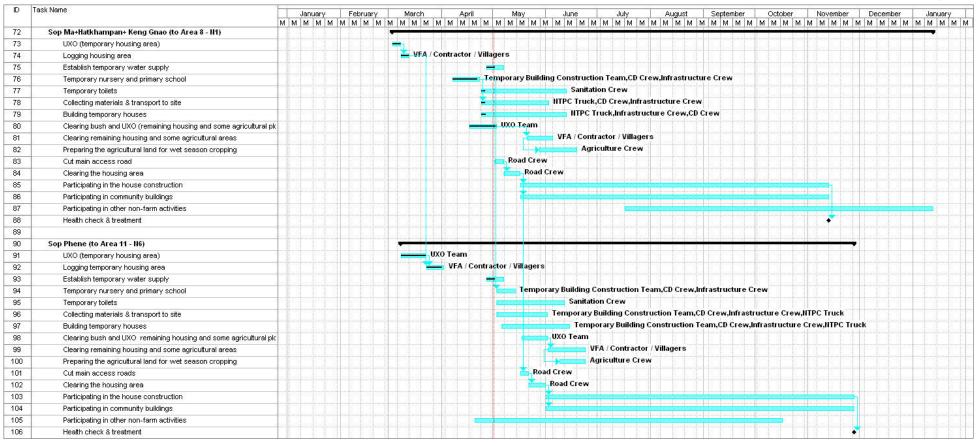
#### Transition Resettlement Schedule



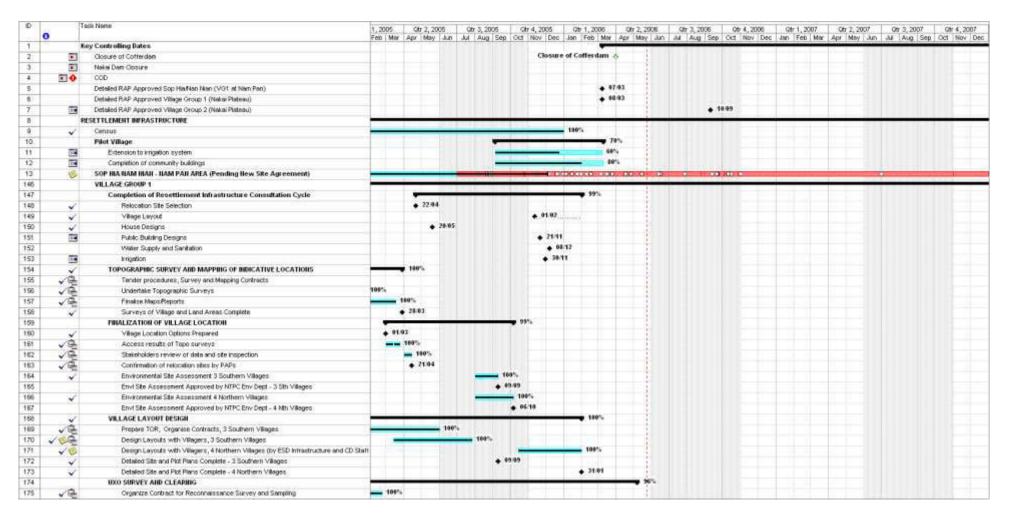
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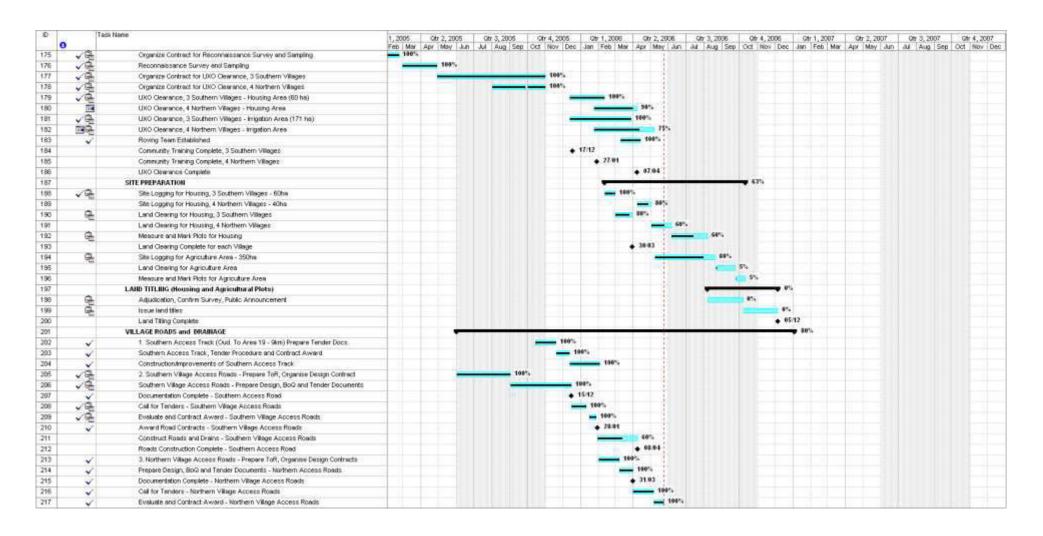


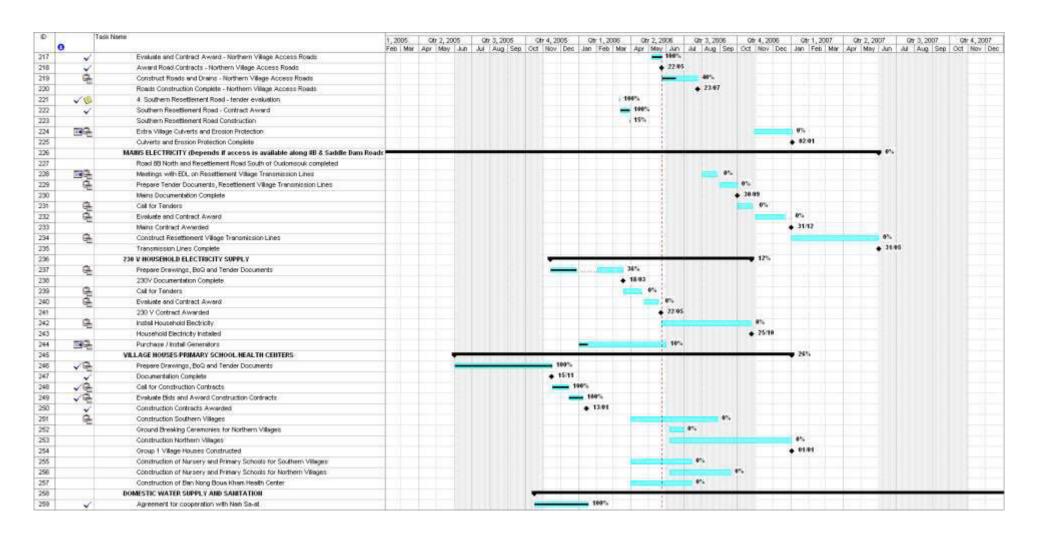
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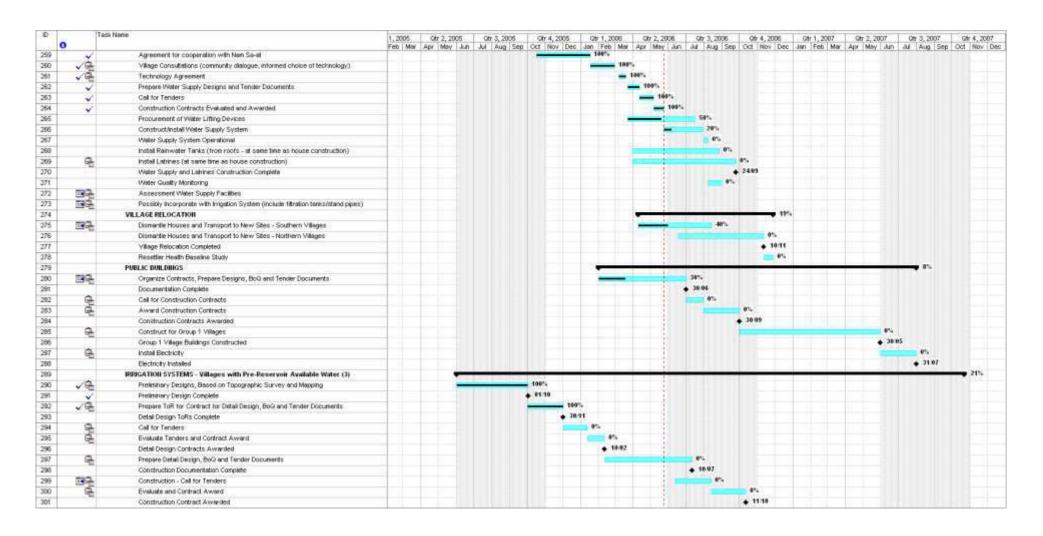


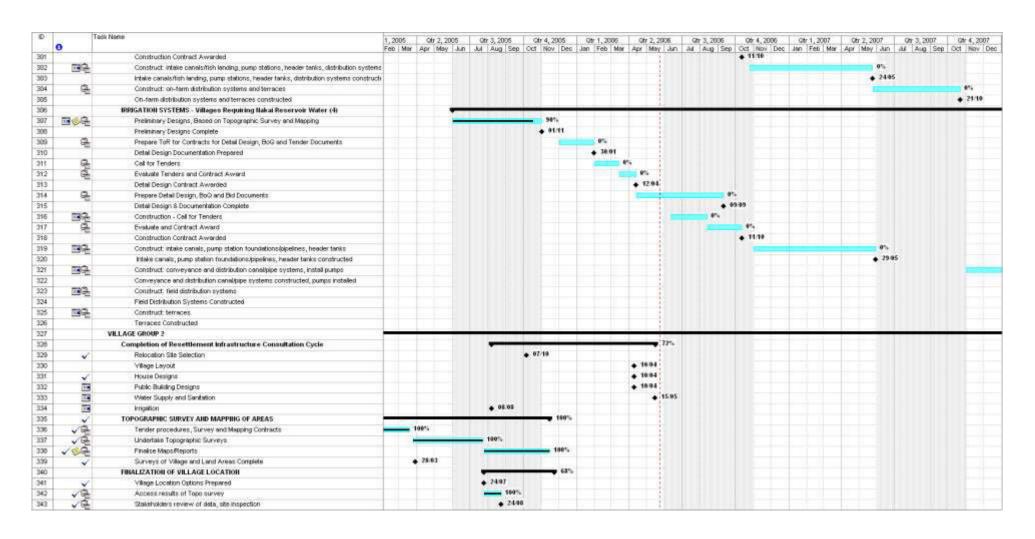
# Infrastructure Progress Schedule

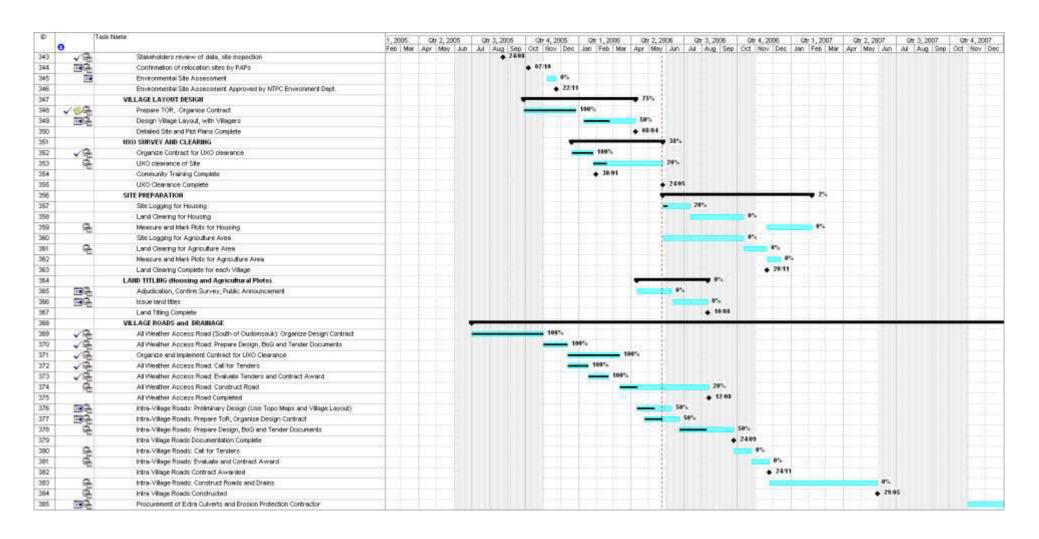


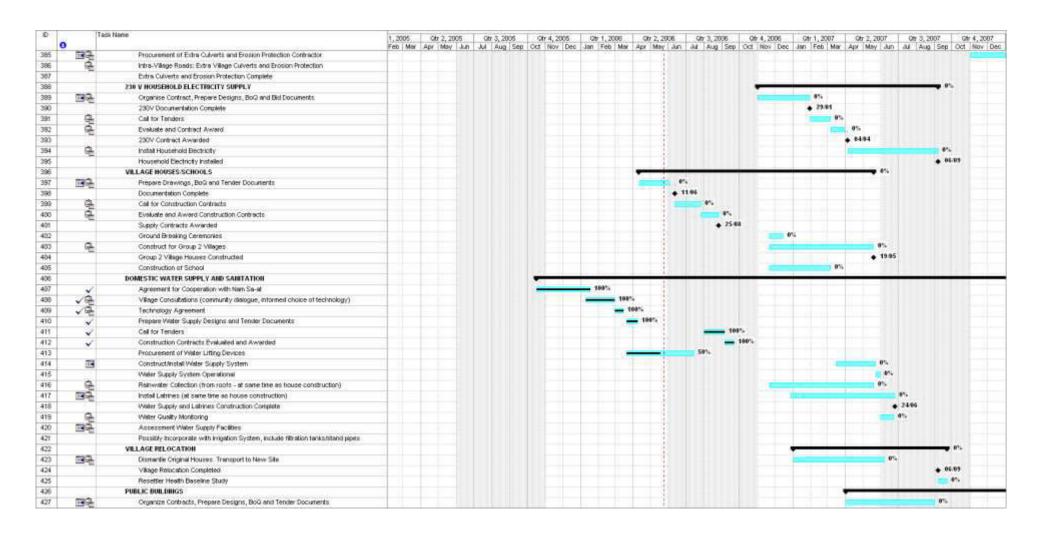


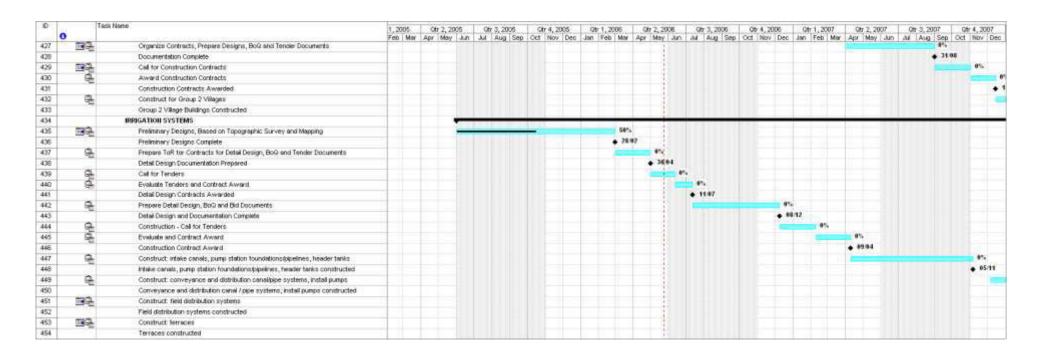














# Nam Theun 2 Power Company Ltd.

# Nam Theun 2 Hydro-Electric Project

# Monthly Progress Report covering activity in June 2006

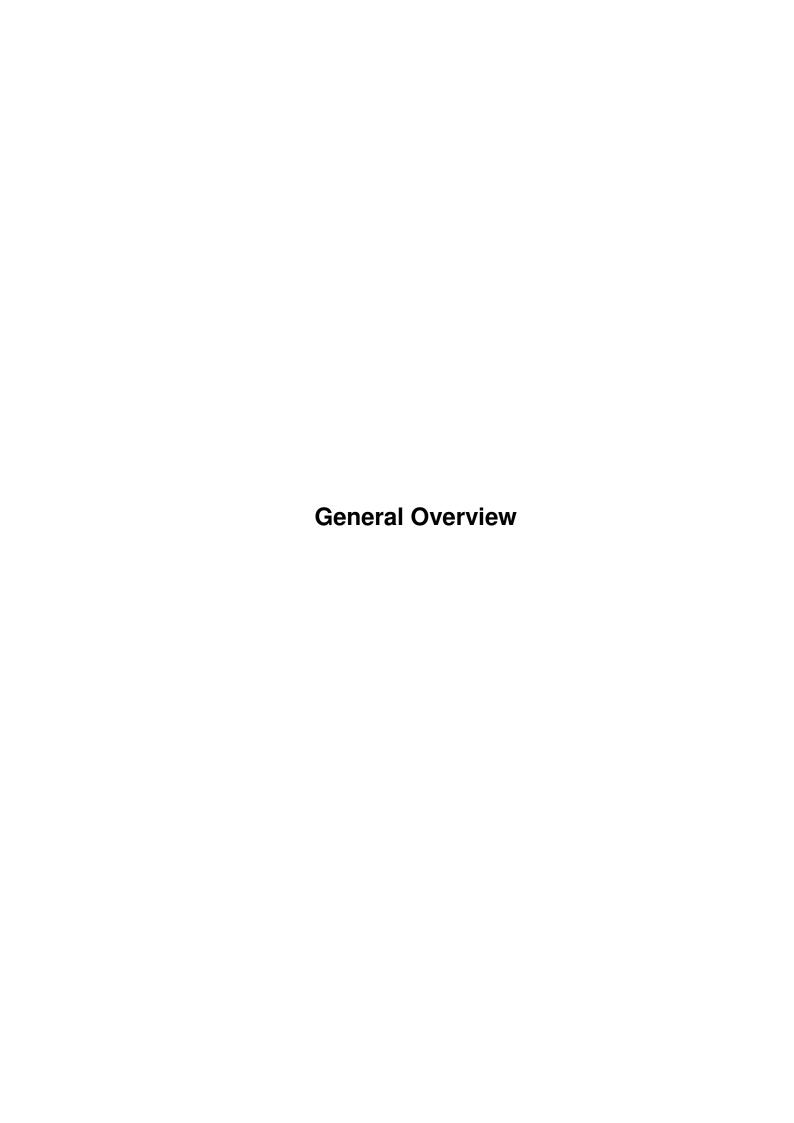
Part C: Environmental & Social Report

# **Table of Contents**

1 0	GENERAL OVERVIEW	5
1.1	Staffing NTPC, GOL (EMU, RMU, DWG) and Partners	8
1.2	Unanticipated Project Impacts	9
1.3	Additional Plans and PIP updating	9
1.4	Grievance procedure	9
1.5	Communication	9
1.6	Procurement	10
2 5	SOCIAL ACTIVITIES	12
2.1	Physical Cultural Resources, Project Lands, Camp Followers	12
2.1.		12
2.1.		
2.1.	3 Camp Followers	15
2.2	Public Health Regional and Resettlement Programs	19
2.3	Nakai Plateau Resettlement	
2.3.		
2.3.		
2.3.	J 1 &	
2.3.		
2.3.		
2.4	Downstream Areas Development Plans	48
3 E	ENVIRONMENTAL ACTIVITIES	50
3.1	General	50
3.2	Wildlife Programmes	
3.2.		
3.2.		
3.2.4	1 6	
3.2.		
3.2.		
3.3	Water Quality Monitoring and Assessment Programme	53
3.4	Environment Management Unit Technical Assistance	60
3.5	Environmental measures linked to construction	60
4 II	NTERNAL AND EXTERNAL MONITORING	62
5 0	GOL RELATED ACTIVITIES	65
_		

.	h	ın	Δ	2	n	n	۴

5.1	Watershed Management Protection Authority (WMPA)	. 65
5.2	Optimization of salvage logging on the Nakai Plateau	. 65
5.3	Social issues	. 65



# 1 General Overview

#### **Procurement:**

#### Procurement:

NTPC procurement activity is much active and remains critical for the timely implementation of measures. Further to the amendment of the NTSEP Project Agreement, the 2 long awaited NOLs have been provided in June (Partial NOL for the use of NAMSAAT for water supply and sanitation and Partial NOL for the use of PCL for UXO)

At the end of June, the World Bank committed one of its Procurement Specialists to audit the procurement process for NTSEP activities, and most especially post review contracts. Although no official report has been issued, informal debriefing shows positive outputs.

#### Project lands:

- Resettlement Action Plans (RAP): RAPs were completed by June 20th and made available for comments on the NTPC website
- Transmission Line: procedures for Land Access and Final Compensation for LPA 57, in Savannakhet Province continued, for the Districts of Xe Bangfai, Xaibouli and Kaysone Phomvihanh with the preparation of last set of compensation forms. DCWG Mahaxai was consulted for the preparation of compensation forms for PAPs affected by the transmission line.
- Nakai, Gnommalat / Downstream Channel: Removal of infrastructure in LPA 26a was assessed and removal of obstacles along new road Zone D. Provisional Compensation for disposal areas DT3 and DT5 was paid; Provisional compensation forms for PAPs in LPA 38c-AR1 were prepared and requisition submitted. Contract for UXO clearing was signed. Locations and construction quality of temporary bridges across D/S were coordinated with HC and District Governor.
- Livelihood restoration: Implementation of livelihood restoration options continued with strong emphasis on NTFPs. First contracts have been signed and more contracts are under negotiation. First 2000 seedlings of Jatropha were planted in Mahaxai.
- Gnommalat: consultation on land reallocation (4 villages in Gn. District)

# Public Health:

- Infrastructure: rehabilitation works at 4 Health Centers and District Hospitals are almost completed. Contracts have been signed for the Gnommalat hospital and 2 Health Centers, but works are postponed until the next dry season.
- Equipment: One ambulance is awaiting custom clearance; the second ambulance is on order.
- <u>Training, capacity building:</u> laboratory staff training for 4 technicians conducted in Thakhek. Essential Obstetric care training meeting conducted in July for the four districts. An annual meeting was conducted for the four districts and the province.
- <u>Supervision:</u> Routine supervision of the health center staff's activities was conducted during the month.
- <u>Transition Resettlement</u>: monthly Maternal and Child Health clinic was conducted in Nong Boua.

#### Nakai Plateau resettlement

#### Infrastructure:

• <u>Extra topographic survey and mapping:</u> The extra work at Areas 1 and 2 is complete. Extra survey at Area 13 for the Ban Thalang irrigated agriculture area is ongoing.

June 2006

- <u>UXO search and clearance:</u> The contractor has completed the four northern VG1 full resettlement areas and as much of Area 13 housing area for Ban Thalang as is currently possible. They are also working on Area 22 for Ban Khone Khen. There is an ongoing contract for UXO community awareness and on-call roving response teams with the contractor. The roving unit disposed of 40 UXO items at Ban Nakai Neua.
- <u>Timber houses</u>: The construction of timber houses in Area 16 (Pilot Village) for 8 families resettling from Ban Keng Gnao is almost complete. Few walls components are still missing but the necessary sawn timber should be made available early July to allow the final completion. The contractors awarded the timber houses construction contracts at areas 17 Bouama, 18 Phonsavang and 19 Sop On have already mobilized and have started the construction works. The 3 contracts for the northern villages of Sop Ma Sop Hia, Nong Boua Kham and Sop Phene have not yet started due to necessary additional preparation works on the site (site clearance, access etc.).
- <u>Roads and tracks</u>: Road construction has progressed well despite some problems of heavy rains and some equipment breakdowns.
  - The construction of access roads to and within the three southern VG1 resettlement areas is about 80% complete. Some more tracks have been added to the contract works.
  - The construction of the Southern Resettlement Road is about 30% complete.
  - The construction of the access tracks to and within the four northern VG1 resettlement areas is about 50% complete.
- <u>Irrigation:</u> A contract was signed for the construction of the irrigation area extension at the Pilot Village for the Keng Gnao resettlers and preliminary works commenced.
- <u>Villages Layout</u>: The preparation of preliminary resettlement village and agricultural layouts for the VG2 villages is continuing by ESD personnel in consultation with villagers.
- 24 sets of the same equipment were delivered to site for installation in Ban Done and Ban Khone Khen. Resettlers from northern villages have been provided with additional individual containers.
- Electricity: A contract was signed for the supply of generating sets for the Group 1 resettlement villages. A contract for the electrification of the 8 new houses at the Pilot Village will be signed in July. The design of the resettlement village electrification systems is underway and complete at five villages.

## Livelihood Plans:

#### Forestry:

- Achievement of sawn wood production target difficult.
- In June NTPC commenced taking steps to strengthen local VFA management.
- The construction of an activated carbon production plant near the Km4 Complex has commenced

#### Agriculture / Livestock:

- Pilot village and demonstration farm activities continue to be focused more on the villages to be resettled,
- Reception of the Integrated Livelihood Implementation Plan.

#### Downstream Program:

- NTPC team continues to prepare twenty pilot villages with ongoing consultation for the finalization of the above study. Livelihood activities implementation has already started in one pilot Village.
- Integration of the comments received from IFIs on Downstream Implementation Plan.

June 2006

#### **Environment:**

- The Water quality sampling is continuing with 27 parameters monitored at 12 surface water sites.
- Completion of activities for the baseline survey for fish and aquatic species in upstream and downstream rivers, review of the field report (May 22<sup>nd</sup>). Preliminary results show a general degradation of the habitats fish population on the XBF, since 1996, not linked with construction activities, but most likely to increased cattle raising (buffaloes).
- Review of the final report of the elephant programme submitted by WCS. There are delays in DNA analysis, preventing a full assessment of migration patterns. However, line transect and dung decay data provide a population estimate of 142 elephants (95% CI = 92, 207)

## Monitoring:

- IMA Appointment is responsibility of GOL, with NTPC funding.
- To speed-up the process, NTPC and the GOL decided that NTPC will handle the administrative procurement process on behalf of the GOL, while GOL will perform the evaluation and selection.
- Consultants' Qualification Selection method (CQS) was chosen. Advertisements have been posted in local (Vientiane Time) and International (Bangkok post and UNDB Online) media during the second half of May 2006. In June, 18 Expressions Of Interests were received from various firms or organizations and evaluation methodology was set up. However, the evaluation did not start due to the decision to enlarge the scope of works of the IMA so that to combine both Social and Environmental activities. GOL, IFI and NTPC recognized that it will benefit from the synergies existing between both activities for most the E&S programmes. Further to the enlargement of the scope of works, decision was taken to re-advertise. Firms or organizations which already expressed their interest pursuant to the first advertisement will be notified of the changed scope of works and will have the possibility to complete their proposal to cope with the extra requirements. Re-advertisement will be posted during the second half of July. Due to the higher estimate price of the services; the "CQS" selection method might be changed.

# 1.1 Staffing NTPC, GOL (EMU, RMU, DWG) and Partners

# NTPC E&SD Staffing

#### Legend:

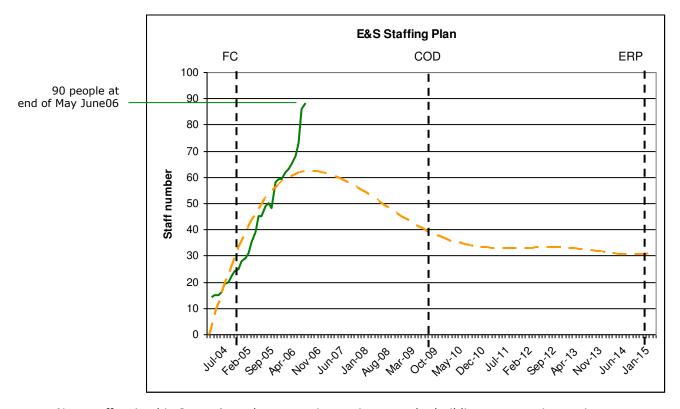
Scheduled staffing plan

Actual staff recruitment

FC = Financial Close

COD = Commercial Operation Date

ERP = End of Resettlement Period



New staff arrived in June: A road construction assistant and a building construction assistant.

In addition to NTPC staff, individual consultants are working full/part time with NTPC teams

The construction of the Nakai Residential Complex in Oudomsouk for use by the NTPC E&S team is on-going (complex of 54 rooms/studios/apartments and 6 villas).

# EMU Staffing

No change from previous report.

# RMU and DWG Staffing

No change from previous report.

# o Partners

No change from previous report.

June 2006

# 1.2 Unanticipated Project Impacts

No change from previous report.

# 1.3 Additional Plans and PIP updating

# o PIP / AIP

Draft version of AIP posted on NTPC secure website on 29 of May 2006. Comments have been received since from IFIs. Final version of AIP will be posted by 28<sup>th</sup> of July 2006.

# Additional Plans

Resettlement Actions Plans (5 RAPs): all RAPs were completed on June 20<sup>th</sup> and posted on the NTPC secured website for review by IFI on June 28<sup>th</sup>.

RAP 5 however is being finalized, following the final design of each of the 32 sections of the Transmissions Lines progressively provided by the HC.

# 1.4 Grievance procedure

During the month of June 2006, the Chiefs of DGC's of NK and GML in collaboration with RMU and Project lands Team have assessed the claims from villages Grievance Committees and the findings were the followings:

- 55 claims from Nakai in which 14 about misunderstanding (9 on land compensation, 5 on asset compensation); 40 were related to additional compensation(16 out of 23PAP affected more than 10% request payment in cash by the reason that they are Government staff, old-retired persons lived with children workers and cannot join the livelihood restoration program; 23 were related to omissions/mistakes and missing from the previous final compensation; one community claim again, derived from the water wells dried-out and requests eight more wells). The other claim related to the damage to the rice field by the Contractor outside the Concession area to be solved by the respective agency.
- 57 claims were received from Gnommalat DGC Chief: 41 of misunderstanding(26 already paid but still claim,8 waiting to pay and 7registered but not affected); 15 derived from omissions, mistakes and missing; one claim from B. That regarding water quality, skin irritation and fish disease at Nam Kathang Noi being checked and investigated by concerned agencies.

In summary, from the misunderstood issues/claims, the DGC and DWG will go to inform or clarify back to the PAP ,for the claims related to compensations, the PL. Team , after checking, prepares the request for additional compensations, and the Chief of DGC will send the others not concerned directly to the compensation to respective Authorities . we have to remind that in Gnommalat area, there is no final compensation yet

# 1.5 Communication

IRN advocacy NGO visited the site on 7 and 8 June and met with local representatives of IFI.

June 2006

# 1.6 Procurement

Further to the amendment of the NTSEP Project Agreement, the following 2 long awaited NOLs have been provided in June.

- Partial NOL for the use of NAMSAAT for water supply and sanitation (Contracts C623 and C691 only),
- Partial NOL for the use of UXO contractor for UXO (phase 1 only).

In June, procurements have been mainly, but not only focusing on:

- the procurement process for the implementation of the downstream programme (evaluation of CVs, signing contracts with team members and contractor ),
- the procurement process for the procurement of the Independent Monitoring on behalf of the GOL (Receipt of Expressions of Interests, Preparing the evaluation process),
- the contractual follow up of contracts in activity.

At the end of June, the World Bank committed one of its Procurement Specialists to audit the procurement process for NTSEP activities, and most especially post review contracts. Although no official report has been issued, informal debriefing shows positive outputs.

# **Social Activities**

Physical Cultural Resources, Project Lands, Camp Followers

## 2 Social Activities

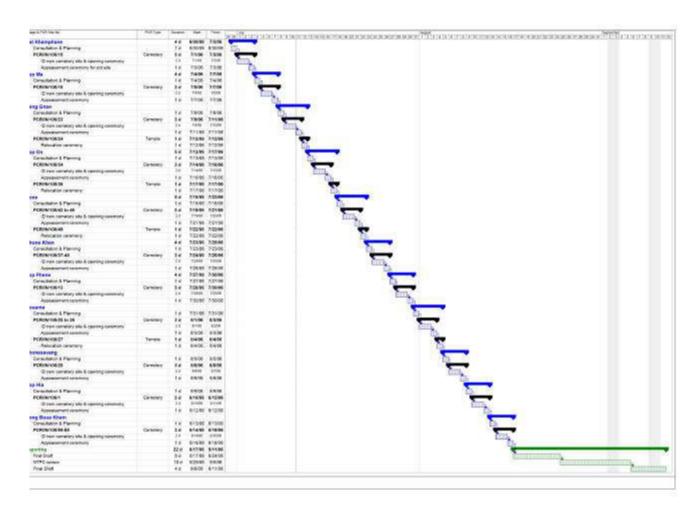
## 2.1 Physical Cultural Resources, Project Lands, Camp Followers

## 2.1.1 Physical and Cultural Surveys & Salvage

During the period of June 2006 the IoCR finalized the report which documents the consultation and compensatory measures for the spirit sites of those villages entering transitional resettlement during the second and third quarters of 2006. The following compensatory measures are presented in the report:

Village	PCR Site ID	PCR Type	Compensation Measure	Date
Sop On	PCR/IN/100/35	Spirit Site	Appeasement ceremony	1 June 2006
Sop Phene	PCR/IN/100/14	Spirit Site	Appeasement ceremony	8 May 2006
Done	PCR/IN/100/46 PCR/IN/100/47 PCR/IN/100/48	Spirit Site	Appeasement ceremony	11 May 2006
Hat Khamphene	PCR/IN/100/16 PCR/IN/100/17	Spirit Site	Appeasement ceremony	8 May 2006
Khone Khen	PCR/IN/100/41	Spirit Site	Appeasement ceremony	10 May 2006
Sop Ma	PCR/IN/100/19 PCR/IN/100/20	Spirit Site	Appeasement ceremony	4 May 2006

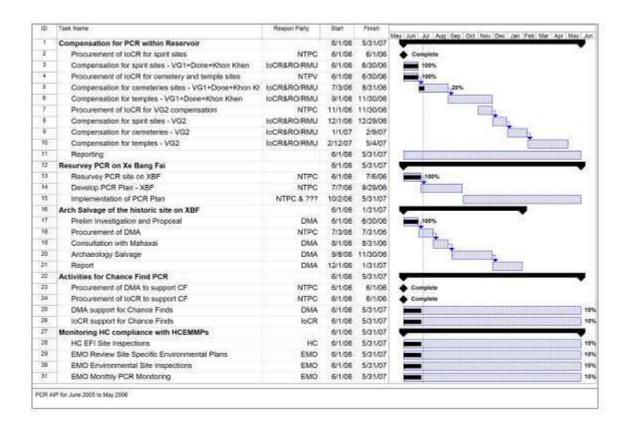
On 30 June 2006, the IoCR mobilized to site to provide consultation and compensation measures for the cemetery and temple sites of those villages entering transitional resettlement during the second and third quarters of 2006. Activities will include identification of a new cemetery site in community forest in the vicinity of their new village. Opening up of a new cemetery site will require a ceremony and UXO clearance prior to use. A ceremony will be performed at the old cemetery site to appease the cemetery spirits. The compensation measures had been previously identified during consultations with the custodians which were undertaken in 2005 and early 2006. Activities are scheduled to last until mid-September.



On 21 June 2006, the monthly PCR monitoring was undertaken by the EMO. The PCR monitoring continues to focus on PCR sites located in the vicinity of the Downstream Channel. The following table presents the village and their PCR included in the PCR monitoring. The IoCR will be mobilized to provide a consultation, and possibly an appearament ceremony, for the potential disturbance that construction activities may have on the spirit site:

Village	PCR ID	PCR Type	Issue
Thamphuang	PCR/ADJ/38/15	Spirit site	No issue at present but Spoil Disposal DT13 will be established at the front of this cave. DT13 seems to impact to the site entrance.
Tham Beng	PCR/ADJ/38/16	Prehistoric	No issue

#### **PCR Schedule:**



## 2.1.2 Project Lands

Main events in June:

- Resettlement Action Plans (RAP): All RAPs were completed on June 20<sup>th</sup> and posted for review by IFI on the secured NTPC website. RAP 5 however is being finalized, following the final design of each of the 32 sections of the Transmissions Lines progressively provided by the HC.
- <u>Transmission Line</u>: compensation procedures for Land Access and final compensation for LPA
   57, in Savannakhet Province continued. Procedures in Mahaxai were started with DCWG
- Nakai, Gnommalat / Downstream Channel: Provisional Compensation for disposal areas DT3 and DT5were paid; moving of infrastructure in LPA 26a continued; obstacles along new road in Zone D were removed.
- <u>Livelihood restauration</u>: implementation of livelihood restoration program was continued with a stronger emphasis on NTFPs; contract for orchid preservation and development was signed but beginning of implementation will start only by end of July; nursery operation for Jatropha is expanding and first 2000 seedlings were planted in Mahaxai; contract for improvement of rattan and bamboo was negotiated and will be implemented in July; production of new Taro varieties for export were negotiated and first seed multiplication will start in August; contract for horticulture development was completed and the first implementation phase will start in July.
- <u>Gnommalat:</u> land reallocation for 27 PAPs continued with the beginning of UXO clearing of allocated land; another 2.5 ha were identified for development and redistribution near LPA35 for 9 PAPs.

### Baseline Studies

The collection of Baseline Study data is complete except for road 12 and 8b.

## Meetings & Consultations

NTPC/HC "Access to Land" coordination meetings continue to be held to coordinate activities and address specific land access issues. 2 meetings were held in June, focusing on (i) removal of obstacles along new road in Zone D and (ii) construction quality issues for temporary bridges over the channel

- Downstream Channel likely modifications required to Downstream Channel spoil/borrow areas, as a result of insufficient, suitable borrow material for construction; final report should be presented in July; and
- Transmission Lines consultations with the provincial and district representatives as well as villagers. About 71 infrastructure assets were finally identified for relocation.

### Provisional Compensation

Provisional compensation was provided to 45 PAPs in LPA 38a DT3 and DT5 and additional calculations prepared for LPA 38c-AR1.

#### Resettlement Actions Plans (RAPs):

RAP 1-5 were completed on June 20<sup>th</sup> and posted on the NTPC secured website for review by IFI on June 28<sup>th</sup>. RAP 5 however is being finalized, following the final design of each of the 32 sections of the Transmissions Lines progressively provided by the HC.

#### **Oudomsouk Urban Planning Resettlement Action Plan:**

No significant activity in June.

#### <u>Livelihood restoration</u>

The rice improvement program started in May, for 148 PAPs, in Gnommalat (87) and Mahaxai (61), out of the 160 farmers who participated at the training at Thasano Rice Research Station between March 26<sup>th</sup> and April 4<sup>th</sup>. Progress of implementation is closely supervised by DCWG officers in a very satisfactory way. Fertilizer for demonstration fields were procured and distributed.

A land area of around 44 ha was identified near Gnommalat for redistribution to PAPs which have lost their entire productive land. The land allocation for the 27 PAPs was agreed and signed by all parties in May. Contract for UXO clearing was signed and operation started in June.

Aquaculture programs (existing fishponds): 10 PAPs participate in the improvement of their fish ponds, planning has been done, implementation will follow. Implementation continued in June.

Contracts for improvements for large livestock and small livestock are under negotiations and will be implemented in July and August.

NTFPs: a new site was prepared for a fruit tree nursery (1000 m2 at DAFO office in Gnommalat, 7,000 seedlings were prepared in June and 2000 planted in Mahaxai,); the contract for orchid development for commercial purpose (2 units for Nakai, 2 for Gnommalat and 2 for Mahaxai) was signed but can only start with the implementation by the end of July. Additional cooperation contracts for the improvement of rattan and bamboo are under negotiation and can be implemented in July.

The contract for horticulture development was completed and implementation will start in July.

#### Handover of lands to Head Contractor

No Project Lands were required to be handed over to the HC under the Head Construction Contract (HCC) during the month of June 2006.

#### 2.1.3 Camp Followers

 Population Management: Monitoring of labor and population movement:

This activity is placed under direct control of RMU since January 2006.

### Human Trafficking Control

This activity is placed under direct control of RMU since January 2006.

#### Infrastructure Development

No changes from previous report.

#### Public Health

#### Water Quality monitoring of domestic water supply:

Under the Camp Followers Health Program, the WQMAP is monitoring faecal coliform contamination in domestic water supply of restaurants in Nakai and Gnommalat District. The presence of faecal coliform indicates contamination from human or animal faeces.

The WQMAP will continue to conduct faecal coliform analysis at five restaurants in Nakai District and ten restaurants in Gnommalat District on a seasonal basis to assess whether activities under the Camp Followers Health Program are contributing to improvements in the quality of domestic water supply.

On 27 May and 30 June 2006 the WQMAP conducted faecal coliform analyses of the domestic water supply for five restaurants in Nakai District and ten restaurants Gnommalat District, respectively.

With the exception of PH5, the faecal coliform level exceeded the Lao standard for drinking water at all restaurants. The elevated faecal coliform levels recorded in these restaurants indicate a high pathogen load which poses a high risk to human health. These restaurants that exceed the Lao standard should continue to avoid direct consumption of the water and boil the water prior to washing vegetables and cooking pots.

			Wat	er Use			Lao WQ		
Site No.	Groundwater Supply		Groundwater Supply		Cooking	Washing Veg	Washing pots	Faecal Coliforms (FC/100 mL)	Standard for Drinking Water
	Nakai District		•	,		•			
PH1	Lined, covered well	Χ	Χ	$\checkmark$	$\checkmark$	80			
PH2	Lined, covered well	Χ	Χ	$\checkmark$	$\checkmark$	6			
PH3	Unlined, semi-covered well	Χ	Χ	$\checkmark$	$\checkmark$	192			
PH4	Unlined, uncovered well	Χ	Χ	$\checkmark$	$\checkmark$	164			
PH5	Unlined, uncovered well	Χ	$\checkmark$	$\checkmark$	$\checkmark$	0			
	Gnommalat District								
PH6	Unlined, uncovered well in a rice paddy surrounded by standing water and animal excreta. ~ 3m deep.	Х	Х	√	$\checkmark$	32			
PH7	Unlined, covered well. ~5m deep.	Х	Х	Х	√	39	0		
PH8	Lined, covered well. ~10m deep.	Х	Х	√	√	25	0		
PH9	Nam Gnom	Х	Х	Х	√	48			
PH10	Restaurant has modified its groundwater supply from Thamphouang cave to a well located at the rear of the restaurant.	Х	Х	√	√	8			
PH11	Lined, semi-covered well. ~9m deep.	Χ	Χ	$\checkmark$	$\checkmark$	5			
PH12	Lined PVC Pipe for pumping GW. ~6m deep.	Χ	Χ	$\checkmark$	$\checkmark$	69			
PH13	Unlined, uncovered well. ~6m deep.	Х	Χ	$\checkmark$	$\checkmark$	24			
PH14	Unlined, uncovered well.~7m deep	Χ	Χ	$\checkmark$	$\checkmark$	27			
PH15	Lined, covered well. ~10m deep.	Χ	Χ	$\checkmark$	$\checkmark$	18			

This has been indicated to the district authorities and measures to stop using this water for washing vegetables and other food items that can be consumed raw and for washing hands and dishes.

It is a difficult measure and may not be adhered to by restaurants. Chlorination of stored water is the other alternative.

This problem will be closely monitored and measures taken to save the public from the dangers of consuming contaminated raw foods.

Peer leaders training among service women and restaurant owners was conducted in Khamkheut district from 21<sup>st</sup> – 24<sup>th</sup> June in Lak Sao. 12 service women and 10 restaurant owners attended the meeting. The training for other districts is being planned.

Page 16 /68



**Figure:** Locations of Groundwater Quality Sampling Stations for the Public Health Program, Nakai and Gnommalat Districts

STIs and its control: No changes from previous report.

## Traffic Safety and Regulations

<u>Development of regulations / Review and strengthening of regulations:</u> No changes from previous report.

<u>Road Safety</u>: Monitoring with RMU of the road safety training for 35 schools & 26 villages along the roads serving NT2 in KK, NK, GML & MHX and preparation of summary report for that training.

## Social Security and capacity building for local agencies

Support and technical assistance for District Police Offices: No changes from previous report.

<u>Establish Intersectoral Task Force on Population management and security:</u> No changes from previous report.

# **Social Activities**

**Health Programs** 

## 2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during May 2006:

#### <u>Upgrading health infrastructure:</u>

- The rehabilitation works of Kendaeng, Nadou, Mahaxai and Nakai Health Center and District Hospital are almost completed. Final inspection in first week of July 2006.
- Work in Nakai and Laksao roof renovation works are delayed because of the delay in supply of roofing material (Onduline sheets). Expected to arrive mid-July.
- Contract has been awarded to the best bidder for the construction of the two health centers in Gnommalat. Construction will start soon after the rainy season. Final date of start to be reviewed with the contractors in September 2006.
- The bidding process for the 2 health centers in the resettlement areas for Ban Done and Nong Boua Kham will start jointly with the other community buildings.

#### Equipment:

- One ambulance has arrived in Vientiane waiting for customs clearance. The second ambulance is on order.
- Medical equipment in Lot I, III and IV will start arriving in mid-July.

#### Training, capacity building:

- Peer leaders training among service women and restaurant owners was conducted in Khamkheut district from 21<sup>st</sup> 24<sup>th</sup> June in Lak Sao. 12 service women and 10 restaurant owners attended the meeting. The training for other districts is being planned.
- A five day Laboratory staff training for four technicians was conducted in Provincial Hospital Thakhek from 26<sup>th</sup> -30<sup>th</sup> June.
- Essential Obstetric Care training meeting was conducted from 27<sup>th</sup> 29<sup>th</sup> June for 19 participants from four districts. The participant went through a common format of management for most common complications of pregnancy, which will be laminated and used in the labor rooms in all hospitals. All participants except one were females. A standard obstetric register was developed in the meeting to be used by both provincial and district hospitals for recording births. This will include all essential details of mother and the baby. Provincial Obstetrician and Senior medical officer, reproductive health participated in the program.
- Two health workers from Nakai District after completion of training are working with resettled population along with RMU District Facilitator.
- A combined annual meeting for the four districts and the province was held at the provincial health office, Thakhek on 6<sup>th</sup> June.

#### Supervision:

- Routine supervision of the health center staff's activities was conducted during the month
- Maintained the updates of the Public Health section of the NTPC website.

### Surveillance and Monitoring:

• STI health education session with cement factory workers in Mahaxai district.

#### Resettlement Program:

- Combined analysis of the data has been completed and standard command file prepared for future first level analysis. This will allow consistent analysis of the data enabling easy comparisons in different villages as well as within the village over time.
- The Nongboua village health checks report has been updated in view of comments received and further developed into a Lao report for easy reading and understanding by district health staff and the development staff working in the village, as well as those villagers who can read. The report will be made available for general use by next month.
- Monthly MCH clinic for Nongboua village was conducted as planned on 1<sup>st</sup> June on the Children's Day. 34 women in reproductive age and 19 children under five years of age attended the clinic.

#### Other activities

- A visit was made to the downstream area to meet the district health offices in Nongbok and Xe Bangfai districts and Beungxe village to study the area and to plan the health education and awareness program in the area in hygiene and STI work.
- Because of dengue fever outbreak in Nongbok district, provincial health officer requested assistance form the project towards supply of some essential medicines. Assistance was provided.
- Three patients (all women) were referred to provincial hospital under Equity Fund from Resettlement villages for treatment. One of them is further referred to Vientiane.

#### Abbreviations used in this section:

DCD District Community Development

DH District Hospital
DHO District Health Office

HC Health Center

HPMD Health Properties Management Division ICHC Integrated Community Health Center

IFMT Institut Francophone pour la Medecine Tropicale

MCH Maternal and Child Health

MOH Ministry of Health

ORPP Outbreak Response Preparedness Plan

PH Provincial Hospital
PHO Provincial Health Office

HPMU Health Program Management Unit UNPFA United Nations Population Fund VHC Village Health Committee

VHV Village Health Volunteers WHO World Health Organization

Public Health Infrastructure & Equipment, vehicles			
Buildings	Progress during the month	Progress to date	
Consultancy services for preparation of bidding document		100%	Delayed consultancy with Ministry of Health leading to delayed start infrastructure programs
Khammouane Provincial Hospital		100%	Only refurbishment of emergency ward. The balance according to hospital needs is transferred to medical equipment and ambulance
District Hospital	5%	95%	Refurbishment work in Nakai, Mahaxai and Khamkeut Districts will be completed by end of July 2006. Gnommalat District Hospital new construction will start in October and likely to be completed before next rainy season. Initial expenses are for land clearance and transformer for GMLT DH.
Health Center	0%	100%	Refurbishment work for Nadou and Kengdaeng Health Centers will be completed by end of June 2006. Khetphid and Nasok HCs and Nongbouakham Integrated Community Health Center (ICHC) - in Resettlement Health Program - new construction will start in October. (Note: Two additional ICHCs belonging to health program are under Infrastructure budget)
Infrastructure maintenance			Most of the infrastructure maintenance will be required after 2008 onwards.



Nakai District Hospital after refurbishment

Nadou Health Center after refurbishment

Medical & Other	Progress during the	Progress	
Equipment	month	to date	
Medical and Lab Equipment			
Consultancy for preparation of bidding document		100%	Delayed consultancy with Ministry of Health leading to delayed procurement program
document	3%		Lot II items have been distributed to 4 district hospitals (DHs)
Medical Equipment (KMN Provincial Hospital, 4			Lot I, III and IV being shipped to Laos by successful bidder. Expected to arrive in 2-3 months (includes big items like X-Ray and Ultrasound), for 4 DHs and KMN PH
District Hospitals and 6 Health Centers)			In addition, some biochemistry and laboratory equipment is on order as well. Further supply of medical equipment will be assessed according to need after completion of the construction work.
Ambulance Equipment and other sur-charges			One ambulance has been equipped with the emergency equipment and three sets of emergency equipment have arrived in Vientiane. Additional cost relates to vehicle insurance and essential accessories.
STIs Program			Develop STI services at provincial and district levels, including introductory workshops. (This item originally was budgeted under medical equipment hence in this section
Peer education			Peer education program - service women, restaurant/bar/ guesthouse owners - Ongoing
Non-Medical Equipment			
Photocopier	99%	1%	One for each DHO and the Khammouane PHO
Computers & printers	59%	41%	Two sets to each district health office and two sets to Khammouane Provincial Health Office
Audio-visual equipment (television and DVD player)	22%	78%	One set of television and DVD player to district health offices and health centers for health education program. Additional BCC equipment will be provided in 2006-07
Fridge, water cooler, LCD projector, fax and other items	12%	88%	One set to each district health office and district hospital and a fridge to Khammouane Provincial Health Office.
Hospital beds (Khamkeut)	54%	45%	30 steel beds with mattresses to Khamkeut District Hospital
Hospital furniture (KMN Provincial Hospital, 4 District Hospitals and 6 HCs)			Hospital furniture will be provided according to the need after completion of refurbishments and new construction work
Bed Nets, including impregnation	70%	30%	2,875 nets for 21 villages of Mahaxai, 3,011 nets for 35 villages of Gnommalat, 3,234 nets for 15 villages of Nakai and 2,364 nets for 15 villages of Khamkeut. Nets will be supplied regularly during the life of the project. Vector control measures/equipment will be provided according to need.
Other package non- medical equipment			Other package of non-medical equipment will be provided according to the need after completion of refurbishment and new construction work
Road safety communication			This money will be spent in conjunction with overall road safety program in NTPC project areas.
Vehicles			
Motorbikes	20%	70%	12 motorbikes (6 from project and 6 donated by NTPC) distributed to DHOs and HCs. Plans of replacement mid project.
4WD Pickups	79%	21%	Four 4WD pickups procured and distributed one each to Nakai, Mahaxai, Gnommalat Districts and one to Khammouane Provincial Health Office. Vehicle use policy has been developed in conjunction with the GOL for exclusive use of health work.

Medical & Other Equipment	Progress during the month	Progress to date	
Ambulances	119%	-19%	Two ambulances have been handed over to Khamkeut and Gnommalat Districts. The other two: one has arrived and is waiting for customs clearance, the second one is expected to arrive soon. Forth ambulance was ordered after a request from Provincial Hospital for replacement of the old one.

Public Health Program - including awareness programmes			
Supplies - Drugs, kits, forms and manuals.	Progress during the month	Progress to date	
Drug and Medical Supply			
KMN Provincial Hospital	62%	38%	Drug revolving fund for emergency and STI Program
District Hospital	17%	83%	Drug revolving fund for four districts
Health Center	21%	79%	Drug revolving fund for four health centers
Community level (Village Drug Revolving Fund)	59%	41%	Drug revolving fund for 68 villages.
Community level (TBA kits)	33%	67%	Traditional Birth Attendant kits to 96 trained TBAs
Office and Vehicle Operating cost			Operating costs have been transferred to 4 DHs/DHOs and KMN PH/PHO 2 time per year, including health centers.
KMN PH/PHO	8%	92%	
DHs/DHOs	2%	98%	
HCs	3%	97%	
Others (training materials, printing forms, etc)	6%	94%	Including BCC materials
Health Education and Awareness Program	Progress during the month	Progress to date	
STIs including HIV/AIDS	5%		Apart from regular health education program in health facilities, special health education and awareness activities are organized on special events such as World AIDS Day and boat racing festival.  Substantial number of people from the community attends these public events - 22 public event sessions were held in four districts and in Thakhek since September 2005 to date.  Separate session was held for, GOL, NTPC and RMU staff Special focus was also given to construction contract staff during the new house construction in the resettlement areas.
Operating cost for PCCA/DCCA			PCCA and DCCAs are responsible for carrying out education and awareness activities in the area of STIs including HIV/AIDS. Their capacity is limited but slowly improving. It is important to support them in this program for sustainability.
Relocation/medicinal plants			Initial work was carried out. Further studies will be carried out in conjunction with National Traditional Medicinal Research Center after resettle population move into their permanent housing.
Consultancy fees (Road safety, PHC, psychosocial, etc.)			This money will be spent in conjunction with overall road safety program in NTPC project areas.

Strengthening Human Resource in Public Health			
Supervision and Monitoring	Progress during the month	Progress to date	
Incentive			Incentive were distributed two times to provincial, district and health center in all project target areas, while only one time were provided to village health workers since they were trained in the past few months.
Field visits for supervision and			Resettlement Health Program - bi-weekly visits to all resettlement sites for review of environmental and health situations, including emergency care for any patients.
support			Regional Health Program - through integrated outreach program consisting of health center, district health, provincial health and HPMU staff visiting health centers and villages.
Integrated Outreach Program			Integrated outreach work consist of more comprehensive health education and awareness on a number of health topics such as maternal and child health, STIs including HIV/AIDS, malaria, diarrhea, respiratory infections, hygiene and sanitation, road safety
			Regular review of service delivery to district hospitals and health centers by district health staff.
Strengthening Health Service Delivery			Referral system for emergency patients has been developed and is linked to quarterly review and training program.
			Emergency obstetric care referral system is also developed and will be reviewed quarterly
			Maternal and Child Health service is being organized at monthly intervals for resettled populations. This will be followed by all health centers in their respective villages.

Training	Progress during the month	Progress to date	
Community level	6%	94%	Seven TBA training sessions (96 participants), seven VHV training sessions (101 participants) and seven VHC training sessions (66 participants). Periodical training and refresher program will continue throughout the life of the project.
			Five training sessions including three TOT (MCH, STI, TBA and peer educator) (102 participants)
Health Center, District and Provincial levels	20%	80%	Training sessions for all level of health workers will be repeated at periodical intervals depending on the subject matter.
			Laboratory services training is planned for June-July 2006
			STI Program - Peer educator training in 4 districts
Long Term	31%		Two long term training session, namely emergency medicine and ICHC of three months (9 participants) and one month (two participants) respectively. Khamkeut District still to have emergency training.
			Long term training for X-Ray and Ultrasound will be conducted in August onwards.
Study Tours		90%	All district hospital and health center staff were taken for study tours to Integrated Community Health Center (ICHC) in Vangvieng and Taleo (59 participants)
Workshop on how to identify psychosocial/drug abuse problems			It requires different methodology to assess the situation. The focus group discussions in future will reflect on this social problem if it exists in the communities
On the job training			This activity is incorporated with on the job training during supervision and support.

Meetings	Progress during the month	Progress to date	Monthly meetings are held in each district and Khammouane Provincial Health Office. These meetings provide an opportunity for educational updates on conceptual and methodological aspect of health service delivery along with the achievements and future plan
Create Outbreak Detection and Response Preparedness Unit		100%	Implementation of the National Avian Influenza awareness program in conjunction with the provinces (Khammouane, Bolikhamxay and Savannakhet)
Meetings at provincial and district levels	9%		Regular meetings at provincial and district levels
Quarterly meeting at HC (VHVs, HCs)			Plans to start in the next quarter
Health education materials and activities - design and production	2%		Support under health education program for all health facilities in the project areas.
Develop the procedures for the referral system			Referral system methodology to be developed and training conducted in Jun-Jul 06
Zonal Health Committee Meeting (4 x per year for each ICHC; and for DH)			It will be implemented once the ICHC is in place
Adapt ICHC accounting and management system			New system will not be introduced. Instead, GOL system similar to other areas in the province will be implemented

Public Health Monitoring and Surveillance	Progress during the month	Progress to date	
Task force meeting			To be redefined as the present definition is difficult to define.
Routine data collection/HIS			Routine data collection and collation. (Note: considerable backlog to be completed)
Outbreak Response Preparedness	100%		Report published and distributed in English.
Outbreak Response Operational	10%		Translation of English report and distribution, followed by training workshops.
Scientific support			Scientific support and areas of support are being redefined. Possibility of getting assistance from additional sources.
Existing data analysis 2004	100%		
Midterm survey	0%		Will be carried out in 2008-09, with planning starting in mid-2008
Special surveys	5%		One Health checks and survey in Nongboua Village. Others will be carried out in the new resettled villages after 100% completely moved.

Equity Fund	Progress during the month	Progress to date	
5% of total budget			With the fast track resettlement program in operation, there has been an increasing need for emergency provision for individuals.

# **Social Activities**

**Nakai Plateau Resettlement** 

#### 2.3 Nakai Plateau Resettlement

#### 2.3.1 General

<u>Transitional resettlement</u> continued throughout June – villagers continued to participate in the clearing of their housing and agricultural plots, collection of building materials for temporary houses, construction of temporary houses, toilets, wells, schools etc. The enthusiasm of the villagers has continued for three months, with the process is being closely monitored and supported by NTPC, District and RMU staff, to ensure that relocation does not proceed without appropriate management (health, schooling, access etc.....). Villagers are organized in units who work as a team to establish the essential infrastructure required prior to moving in to their temporary houses – which are at least of an equivalent standard to their source village houses.

Rice and protein distribution programmes are in place (a mix of fresh and dried meat, eggs and vegetables was determined as appropriate by the NTPC Health team based on nutritional considerations), and basic household "kits" are distributed – these include water containers, washing gear and mosquito nets. District health officials are monitoring all transition families for any signs of ill health requiring treatment, and school uniforms are being provided as required.

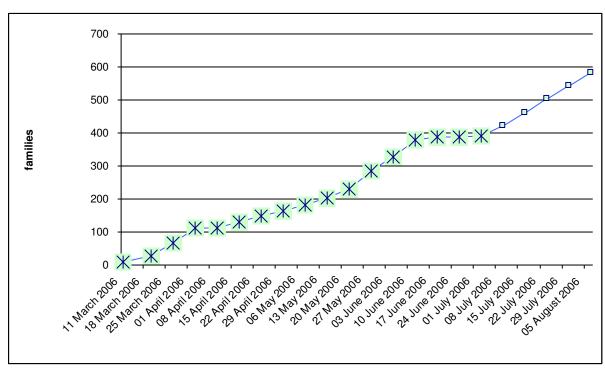
The rate of movement to transition slowed somewhat during the latter half of June, in order to allow the residents of Ban Done and Khone Kaen to prepare their temporary houses. This rate is expected to pick up again in July.

It should be noted that Nong Boua Kham village, originally included as part of VG1, has been tentatively removed from the "transition list". This is because: (i) there is no significant risk to this village from the cofferdam; (ii) unlike the other transition villages who were situated along the banks of the Nam Theun/Nam On and who have moved to a more accessible location with transition housing equal or better to their original housing and better facilities, Nong Boua Kham is situated along the national highway north of Oudomsouk. Accessibility and facilities are already good and are unlikely to be improved by transition resettlement. It is planned that Nong Boua Kham will be relocated during the next dry season.

#### **Transition Timetable**

Week Starting:										
, ,					SopHia	Sopma				
	Kaeng Yao	Sop On	Ponsavang	Bouama	Nam Nian	Hadkampan	Sophene	Ban Done	Khon Kaen	Total
		-			(vietic)	Kaeng Yao				households
Move to Area:	16	19	18	17	8a	8	11	21	22	
11/03/06	8									8
20/03/06		20								28
27/03/06		40								28 68
03/04/06		44								112
10/04/06										112
17/04/06			19							131
24/04/06			11	5						147
01/05/06			11	5						163
08/05/06				20						183
15/05/06				20						203
22/05/06				18	10					231
29/05/06				6	19	15	12			283
05/06/06					7	22	12			324
12/06/06						29	23			376
19/06/06							9			385
26/06/06										385
03/07/06								3		388
10/07/06								15		403
17/07/06								15		418
24/07/06								29	10	457
31/07/06								40	20	517
07/08/06								40	22	579
Total families	8	104	41	74	36	66	56	142	52	579
first 8 families me	oved from Kan	na Vao to M	Jona Boua Dil	ot Village (a	roa 16) on 11	March 2006				
mai o iaiiiiies iiii	Jveu IIOIII Nae	any rautor	vong boua Fill	or village (a	16a 10) UII I	ivial CIT 2000				
* NOTE: Nong B	oua Kham (to	Area 9), ha	s been delaye	d as Ban Do	one and Khor	Kaen are a hi	gher priority	/		
						ay be moved a			th VG2b	

The following chart shows the actual to date cumulative movement of families as scheduled in the above table.



As of the end of June 2006 there have been a total of 392 households resettled (approximately 1960 people) to transition housing. Transition resettlement will continue to move at a controlled rate with some six hundred families expected to be living on their new plots of land and participating in the development of their new homes by early August 2006.

#### **Transitional Livelihoods:**

Preparation of agricultural land has commenced in four new transition villages – Nong Boua, Boua Ma, Phonsavang and Sop On.

Currently 50% of agricultural plots have been cleared at new Sop On, 25% at new Phonsavang, and 5% at new Boua Ma. All the agricultural plots of the 8 Ganeg Yao families that moved to the Pilot Village have been cleared.

Training and assistance in home gardens is on-going and most transition resettlers have productive gardens for home consumption and trade.

The opportunity to supply labor for work associated with UXO clearance and village construction is provided to all villages, in addition to food support in the case of transition resettlers.

There is a full time presence of NTPC and District supervisors and community facilitators in each village.

Most NAKAI activity is now focused on implementation of Transition Relocation.

Two schedules are presented in the following pages:

- The first schedule shows the phases of resettlement for the various villages listed in order of potential impact by cofferdam and main dam
- The second schedule shows progress of the respective tasks associated with resettlement of the same villages.

			statistical ir	mpact in 2006 erdam)	statistical ir (part	mpact in 2007 . dam)				2006		200	07	2008		
number	village name	hh # (2006)	10%	1%	10%	1%	new area	New area code	T1 T2	T3 T4	T1	T2	T3 T4	T1 T2	T3 T4	
8	Ban Hat Khamphane	23	3	3	3	3	8	N1	preparation of transitional phase	transitional phase	relocatio	n completed				
9	Ban Sop Ma	23	3	3	3	3	8	N1	preparation of transitional phase	transitional phase	relocatio	n completed	1.1			
10	Ban Keng Gnao	20	3	3	3	3	8	N1	preparation of transitional phase	transitional phase	relocatio	n completed				
10	Ban Keng Gnao	8	3	3	3	3	16	N2	preparation of transitional phase	transitional phase	relocatio	n completed	tly built			
13	Ban Sop On	104	3	3	3	3	19	N3	preparation of transitional phase	transitional phase	relocatio	n completed	dam par			
14	Ban Done	142	3	3	3	3	21	N4	preparation of transitional phase	transitional	phase	relocation	_			
15	Ban Khone Khen	52	3	3	3	3	22	N5	preparation of transitional phase	transitional	phase	relocation	" <u>.</u>			
5	Ban Sop Phene	56	2	3	3	3	11	N6	preparation of transitional phase	transitional phase	relocatio	n completed	Flood		R e s	
11	Bouama	74	2	3	3	3	17	N7	preparation of transitional phase	transitional phase	relocatio	n completed	i i		e r v	
12	Ban Phonsavang	41	1	3	3	3	18	N8	preparation of transitional phase	transitional phase	relocatio	n completed	11		o i r	
1	Ban Sop Hia	34	1	2	3	3	хх	Nx	relocation of lower hh on	n of transitional tran	sitional phase	relocation	on completed		i m	
1	Ban Sop Hia (first group)	30	1	2	3	3	8a	N9	upper part of the old village	transitional phase	relocatio	n completed	11		p o u	
	Ban Nam Nian (first group)	6	0	0	3	3	8a	N9					11		n d i	
4	Ban Nong Boua Kham	57	1	2	1	2	9	N10	preparation transitional phase	transitional phase	relocatio	n completed	11		n g	
3	Ban Thalang	79	0	1	1	2	13	N11		pnase	sitional phase	relocatio	on completed			
6	Ban Nakai Neua	88	0	1	1	2	1	N12	_	priase	sitional phase	relocatio	on completed			
2	Ban Nam Nian	30	0	0	3	3	хх	Nx			sitional phase	relocation	on completed			
7	Ban Nakai Tai	179	0	0	1	2	2	N13		preparation of transitional phase tran	sitional phase	relocation	on completed			
16	Ка Оу	10	0	0	0	0	19	N3			preparation o phase	f transitional	transitional phase	relocation completed		
16	Ка Оу	15	0	0	0	0	21	N4			preparation o phase		transitional phase	relocation completed		
17	Ban Oudomsouk / Phon Phan	103+56	0	0	0	1		N14			preparation o phase	f transitional	transitional phase	relocation completed		

										Trai	nsition																			June	2006
				Topo survey	Village layout design (Housing)	Village layout design (Agric.)	up Hill relocation	Access track	UXO temp area	Logging temp housig area	drill wells, hand pumps	Temporar y Schools	Temp. toilets	Building Temp. houses	Expected Commencem ent of Transition Resettlement	Transition Support - food, health, household goods	Target Date - full transition	UXO whole areas	Logging whole area	Road Construct ion	Stump Removal	Clear housing area	House Building	Dismantle house and transport	Water Supply	Electricity	Communit y Buildings	Agric land preparatio n	Other non- farm activites	Irrigation	Target Date - Permanen t Houses Complete
New area code	new area	village to move in this area	hh # (2006)																												
N1	8	Ban Hat Khamphane	23				NR								May-06		T2/06						С			р	р				T4 / 06.
N1	8	Ban Sop Ma	23				NR								May-06		T2/06						С			Р	Р				T4 / 06.
N1	8	Ban Keng Gnao	20				NR								May-06		T2/06						С			Р	Р				T4 / 06.
N2	16	Ban Keng Gnao	8				NR	NR		NR		NR			Mar-06		T2/06		NR	Р							NR			Р	T3/06
N3	19	Ban Sop On	104				NR								Mar-06		T2/06									Р	Р				T4 / 06.
N3	19	Ка Оу	10				NR										T2/07									Р	Р				T4 / 07.
N4	21	Ban Done	142												Jul-06		T3/06														T1 / 07.
N5	22	Ban Khone Khen	52												Aug-06		T3/06														T1 / 07.
N6	11	Ban Sop Phene	56				NR								May-06		T2/06						С			Р	Р				T4 / 06.
N7	17	Bouama	74				NR								Apr-06		T2/06						С			Р	Р				T4 / 06.
N8	18	Ban Phonsavang	41				NR								Apr-06		T2/06						С			Р	Р				T4 / 06.
Nx	xx	Ban Sop Hia	34						С								T4/06	С													T1 / 07.
N9	8a	Ban Sop Hia (first group)	30												May-06		T2/06						С			Р	Р			<del></del>	T4/06
N3	8a	Ban Nam Nian (first group)	6												May-06		T2/06						С			Р	Р				
N10	9	Ban Nong Boua Kham	57				NR	Р		С	Р	Р	Р	Р	Nov-06		T3/06		Р	Р	Р	Р	С		Р	Р	Р				T1 / 07.
N11	13	Ban Thalang	79														T1/07													<del></del>	T1 / 07.
N12	1	Ban Nakai Neua	88														T1/07														T1 / 07.
Nx	xx	Ban Nam Nian	30				NR		С								T4/06	С													T1 / 07.
N13	2	Ban Nakai Tai	179				NR										T1/07														T1 / 07.
N4	21	Ка Оу	15				NR		С								T3/07	С													T4 / 07.
N14		Ban Oudomsouk / Phon Phan Pek	103+56				NR		С								T3/07	С													T4 / 07.
		NR Not Re	elevant			Р	In	procure	ement	1		С		Contract chase	signed, m	nobilizatio	n		Implem	entatio	n - On (	going			Task o	complet	ed				

#### 2.3.2 Infrastructure

The wet season has started and persistent heavy rains in June caused the three road construction contractors to stop work for some days. However the rains in June were far less than in 2005 and relatively good progress has been made.

## Topographic survey and mapping of indicative locations

The contract for an extra 201 ha of survey and mapping and installation of Nakai Reservoir FSL beacons between Areas 1 and for Nakai Tai and Nakai Neua is completed.

The contract for the survey and mapping of an extra 237 ha near Area 13 for the Ban Thalang irrigated agriculture area is ongoing.

There is still no final resolution to the question of where the (ex Nam Pan) Sop Hia and Nam Nian resettlers will be resettled. This is the remaining area to be surveyed and mapped. Consultations with GOL and with resettlers are on-going, however it is anticipated that those resettlers whose final choice is to move to the plateau will be relocated to the previously identified Area 7.

## Finalization of village location – Village layout Design

<u>Village Development Plans:</u> All VG1 layouts have been completed (except for that portion of Sop Hia and Nam Nian that was previously scheduled to move to Nam Pan). The contract the preparation of layouts for the remaining villages is underway as shown in the table below.

Name of the original villages in VG2	New village area	Village layout	Agriculture Layout
Thalang	Area 13	Complete	More survey required
Nakai Tai	Area 2	Preliminary	More survey and mapping completed and draft layouts prepared as a basis for consultations
Nakai Neua	Area1		More survey and mapping completed and draft layouts prepared as a basis for consultations
Done	Area 21	Complete	Complete
Khone Khen	Area 22	Complete	Complete

#### UXO search and clearance

The contractor has continued to make good progress during the month. The northern VG1 resettlement areas (11, 9, 8A and 8) are complete and as is the search and clearance of portion of the VG2 housing area at Area 13. The remaining portion of Area 13 will need to be cleared at a later date, once agricultural lands are better defined and villagers are ready to relocate from their existing houses. The contractor has moved to the south and are completing search of Area 22 for Ban Khone Khen and the extra areas previously topographically surveyed and mapped at Areas 19 and 21. Vegetation cutting at Areas 1 and 2 for Nakai Neua and Nakai Tai are underway.

Since November 2005 to date, the contractor has searched and cleared around 700 ha of resettlement area. To the end of May 2006, 118 UXO items have been found and destroyed. These are mainly bomblets, but include 3 bombs, RPG rounds and fuses.

The contractor also has a contract for "Resettlement Area UXO Community Awareness and Emergency Response Teams." An awareness survey of the resettlement villages was completed to identify each village's needs.

In May, the response team visited three villages to check on reported suspect items. Two visits were false alarms but at Nakai Neua, 39 bomblets and one rocket was found and destroyed. Apparently the villagers had been dumping UXO items found in an old bomb crater.

## Roads and drainage

There are now three ongoing road construction contracts. As stated previously, rains have reduced progress in June as have some equipment breakdowns. However overall progress is considered good, and an important objective at present, that of ensuring road access to resettlement sites for the coming rainy season, .is likely to be met.

#### Southern Access roads to and within villages:

The contractor has continued work on the construction of access roads to and within the new villages of Bouama (area 17), Phonsavang (area 18) and Sop On (area 19) and has made good progress, despite the rains in May. It is estimated the works are still about 80% complete. This is because households from Ban Ka Oy who were previously going to be resettled at Area 21, will now be resettled in Area 19 and this has necessitated extra access tracks in this area.

#### Southern Resettlement Road:

The contract for the construction of the Southern Resettlement Road, 11.765 km long, is about 30% complete. Clearing is complete, as are most of the cross-drainage culverts, and embankment compacted fill is underway.

#### Northern Access roads to and within villages:

The contractor has continued work on the construction of access roads to and within the new villages of Sop Ma (area 8), Vietic Sop Hia (area 8a), Nong Boua Kham (area 9) and Sop Phene (area 11) and has made relatively good progress, despite the rains. It is estimated the works are about 45% complete.

#### House Construction

Contracts for the construction of timber houses for VG1 resettlers were awarded and three companies have commenced construction. The eight houses at the Pilot Village, area 16, for the recently arrived transition resettlers from Keng Gnao are now complete. The problem with the delivery of sawn hardwood is improving but still causing delays to the contractors. The delays are due to:

- original surveys by GOL overestimated the volume of construction hardwood species available;
- · VFA sawmill equipment still in procurement;
- Restrictions on transporting logs to/from other sawmills (traffic management concerns)
- Complicated and time consuming procedures (tax exemption, permissions etc.)

#### Other contracts are planned to start as follows:

Areas and Villages concerned	Contrac	t No. r	Start Date		
Area 17 for Bouama	0504	Area 16	20 March 06		
Area 16 for Keng Gnao	C604	Area 17	19 May 06		
Area 18 for Phonsavang	C6	05	16 May 06		
Area 19 for Sop On	C606,		21 Apr 06		
Area 8 for Sop Ma / Hat Khamphane	C607	Area 8a	deferred to dry season		
Area 8A for Sop Hia	2007	Area 8	deferred to dry season		
Area 9 for Nong Boua Kham	C6	08	deferred to dry season		
Area 11 for Sop Phene	C6	09	deferred to dry season		

The Contractors for Area 19 (Sop On), 18 (Phonsavang) and 17 (Bouama) have completed the construction of the work camps and have started construction of the houses. The contractor for

Area 19 has made good progress, with most of the concrete piers in place and is now concentrating on completing the structural timber framework and roofing. Contractors for Area 18 and 17 are stockpiling and planning timber and concentrating on completing the concrete piers.

## Community Buildings

Each resettlement village will have a primary and nursery school, village office and meeting hall, market, warehouse and a rice mill and workshop. There will also be two clinics, five seed processing and agricultural storage facilities and five organic fertilizer facilities located at various villages. The sizes of most of the buildings will vary according to village size. Designs have been prepared for most of the Pilot Village community buildings, however many resettlement villages will be larger and more designs are required.

After bidding procedures, a contract was signed in June for the supply of the architectural consultancy services. A team from the contractor has visited the Nakai Plateau to inspect the community buildings already constructed at the Nongboua Pilot Village and Oudomsouk Primary School. They discussed the various designs with the relevant RO personnel and have submitted an Inception Report.

The drawings and Bills of Quantities for the two Health Centers at Ban Done and Ban Nongbouakham were completed under a separate contract for the design of Public Health Infrastructure.

## Domestic Water Supply and Sanitation

Resettlement village water supplies will be a combination of:

- Rainwater collected from house roofs, via guttering and down-pipes to a 2,000 liters capacity tank; and
- Deep machine drilled boreholes equipped with hand pumps.

<u>Toilet/bathrooms</u> will be installed at every house and there will also be some at the community buildings. The construction of the VG1 resettlers' rainwater collection facilities and latrines has been included with the housing construction contract.

Boreholes with hand pumps: A contract with the Champasack Provincial Nam Saat drilling team has been established and signed for the construction of 109 boreholes in 10 resettlement areas, 5 district hospitals and Health Centers and in possible other impacted Project Land areas in addition to the already completed 16 boreholes that were urgently required for the transition relocation – in the three southern resettlement sites at Area 19, 18 and 17. This intervention is planned to last for 7 months as indicated in the tentative schedule below.

					2006								2007
New Area	Name of Village/Health Center/Hospital	No of BHs required	No of BHs already completed under other contracts	Maximum No of BHs to be completed until January 2007	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.
1- Resett	lement areas												
16	Ban Nong Boua (Pilot village)	7	4	3								3	
17	Ban Bouama	11	4	7		2		2	2		1		
18	Ban Phonesavang	8	2	6	3				3				
19	Ban Sop On	17	6	11	3	2	2	2	2				
8	Ban Sop Ma/ Hatkhampan/Keng Nyao	11		11		3	2	2	2	2			
8a	Ban Sophia Vietic	7		7		2	2			3			
9	Ban Nong Boua Kham	10		10			2	2		3		3	
11	Ban Sop Phene	9		9		2	2	2		3			
21	Ban Done	22		22		3	3	3	3	3	4	3	
22	Ban Khon Kaen	8		8			1	1	2		4		
Sub total	1	110	16	94	6	14	14	14	14	14	9	9	0
2- Health	Centers and District Hospitals												
	Gnommalath Hospital	1		1							1		
	Khed Phit Health Center	1		1							1		
	Nadou Health Center	1		1							1		
	Nasok Health Center	1		1							1		
	Kaeng Deng Health Center	1		1							1		
Sub Tota	12	5		5	0	0	0	0	0	0	5	0	0
3- Projec	t lands												
-	Oudomsouk	15	15										
	Pon Pan Pek	5	5										
	Others - To be finalized and adjusted during present implementation period	10		10									10
Sub Tota	13	30	20	10	0	0	0	0	0	0	0	0	10
GRAND 1	TOTAL	145	36	109	6	14	14	14	14	14	14	9	10

## Irrigation Systems

A contract was signed for the construction of the extension area to the Pilot Village irrigation scheme for the resettlers from Ban Keng Gnao with the same contractor that constructed the Pilot Village scheme. Preliminary roadworks have started and the Contractor is procuring all the pipes and fittings required for the works.

The preparation of irrigated agricultural layouts is part of the resettlement village planning exercise and this has been reported on above.

Permanent irrigation agriculture cannot commence until there are transmission lines are installed to power the irrigation pumps until there is Nakai Reservoir water to pump from (apart from areas 17, 18 and 19, which will have the use of water from the Theun Duane and Houay Malai).

## Electricity

A contract for the procurement of generating sets for VG1 resettlement villages was signed during the month. The generators will provide electricity for lighting until permanent transmission lines along the new Road 8B and Southern Resettlement Roads are installed.

The Senior Electrical engineer is continuing with the design of the resettlement village electricity layouts. He will continue with this activity in between the supervising installations at various sites – the NTPC Nakai Residential Complex, VFA Sawmill and Gnommalat District Hospital. To date designs have been completed at five villages.

There has been a delay with the signing of a small contract for the electrification of the eight houses at Area 16 with EDL. It is now expected to be signed in July.

### 2.3.3 Nakai Plateau Forestry Development Program

- 1) The forestry livelihood component activities are designed to strengthen of the Nakai Plateau Village Forestry Association (NPVFA) that was formed in June 2003. The goals and objectives of these activities are to allow the Association to implement sustainable forest management and operate a profitable forest industry business to provide additional income to support resettled families and further improve incomes from managed forest resources.
- 2) The Concession Agreement between GoL and NTPC provides the NPVFA, acting on behalf of the resettled communities, with the exclusive utilization rights to the timber and non-timber forest products within a defined resettlement area of approximately 20,000 hectares. Forest management contracts and long term forest management plans have been prepared, approved and signed by the Government of Laos and the Nakai Plateau Village Forestry Association on 2<sup>nd</sup> August 2005. This involved retyping and remapping of the better quality forest, degraded forest and protection forest zones for inclusion in the plan.
- 3) The management plan includes a calculation and provision for harvesting and sawing 6,000 cu.m. of logs each year for the production of added value timber products. In the initial 3 year period, 2006 2008 it was planned for activities to cover the salvage logging and clearing for housing, irrigation and farming and selling of wood products, including tendering to supply timber for resettlement houses.
- 4) To implement activities NTPC has assisted the NPVFA to obtain various business licenses and commenced procurements of equipment's and services required in May 2005. Most vehicle and logging equipment purchases, office and accommodation buildings have been completed in the first half of 2006. Factory buildings are 90% completed and 50% of processing equipment supplied. Electricity and plant installation is expected to be completed before end August for startup in September 2006. Six Lao and one expatriate advisors were appointed in 2005 and a part time expatriate engaged in 2006 to assist with a larger workload than had originally been planned
- 5) In September 2005 NTPC requested the GoL to supply 33,000 cu.m. of tax free sawn logs from the project reservoir. An area of 2000 ha was indicated by GoL as potentially suitable, but this was later assessed to contain little suitable volume. In December 2005 the tax exemption was approved. NTPC then prepared a harvesting plan based initially on harvesting resettlement areas following UXO clearance operations to permit housing and irrigation development. This plan, based on GoL 100 % inventory surveys, was submitted to GoL in January 2006 to approve salvage harvesting 16.400 cu.m. of hardwood species suitable for construction and 4,900 cu.m. of softwoods (mainly pine).
- 6) The GoL approved the NPVFA, as holder of the cutting rights to undertake the harvesting of trees and sawing of timber under contract to NTPC to permit benefits to be returned to the resettled households. NTPC has undertaken to pay the operating costs of harvesting and sawing timber for project construction and to pay a NPVFA performance fee based on sawn wood volumes delivered to building contractors. Harvesting commenced in January and sawing by local sawmills in the Nakai and Lak 20 areas commenced in March.
- 7) Demonstration and training activities were commenced prior to financial close. These included a furniture training factory, establishing a tree nursery and establishing 17 hectares of non-timber forest product plantations and 50 hectares of enrichment planting. Since financial close other key development activities have included:
- Establishment of a further 25 hectares of non-timber forest products plantations
- Forest inventories and reservoir boundary demarcation surveys
- Demonstrations of charcoal production in kilns at individual family and group level, to be linked to supply of charcoal for activated carbon production and export
- Pencil wood production for export to Thailand.

Activity	June Result	Total to Date	Target to end June	Total 2006 Target
Logging Production (cu.m.)				
Log volumes harvested	5008	22,113	21300	24,720
Volume hardwood harvested.	1,972	10,100	7,420	19,820
Volume softwood harvested.	3,036	12,013	3,900	4,900
Construction hardwood (21 species) harvested	1,472	7,272	7,420	19,820
Non-construction hardwood species harvested	502	3,828	-	-
Construction hardwood logs sawn	564	2,222	3,710	9,900
Sawn wood Production (cu.m.)				
Sawmill production	282	1,139	3,710	9,900
Sawn wood delivered to house construction	262	321	2,000(?)	8,000 (?)
Log Sales				
Log volume (pine) sold	1,398	5,304	3,900	4,900
Log volume (pine) not sold	3,036	5,699	-	-
Log volume non construction species not sold	502	1470	-	-
Furniture Production				
Units produced (tables , chairs , cupboards, frames	50	350	400	800
Charcoal production				
Kiln Construction - Large	1	1	2	10
Kiln Construction - Small	4	-	4	20
Charcoal output (tones)		0.6	4	1000
Brick Production				
Kiln Construction	1	1	1	2
Brick Output	-	15,000	15000	80,000
Plantation				
Weeding and Herbicide Application	5	84	84	126
Fertilizer and grass sowing – soil improvement trials and demonstrations	5	84	84	210
Re-fencing and weeding natural regeneration	30		30	30

Results Comment and Other Significant Events

- 8) The achievement of sawn wood production targets for resettlement housing is made difficult by:
- Poor quality 100% forest wood volume surveys made in 2004 and early 2005 have resulted in wood harvest planning producing harvest yield errors in the order of 100 to 200 %. Only 35% of the 30,000 cu.m. of logs required appear to be available in the resettlement area zone available for salvage logging.
- Very low levels of sawmill productivity at Nakai and Lak 20. Flooding of Nam Theun at Thalang is affecting sawn wood deliveries. To recover lost production time, emphasis must be given to commissioning the new VFA sawmill to work 16 hour days. Electricity may be installed to test run equipment at end of August.
- Illegal logging activities are apparently taking place on VFA area.
- The continued cutting of pine logs, despite NTPC advisor agreement with VFA to stop on 8th May, has resulted in a high volume of smaller pine logs remaining that are proving difficult for VFA to sell because of high tax charges. Protection of these logs against fungi and insect attack will be expensive because of the large volume involved.
- Log measurement and grading practices by local officials that lack consistency, being influenced by whoever is the buyer of the logs in log sales.
- Wood graded as unsuitable for house construction is to be regarded as salvage wood that was
  necessary to remove from housing and irrigation sites to allow construction works to proceed.
  Investigations are commencing to use this wood for other project construction purposes,
  charcoal production or sawing with some diffusion chemical treatment.
- 9) In June NTPC commenced taking steps to strengthen local VFA management. A two phase approach is proposed. This will involve in phase one, a stronger NTPC control of the management process combined with a focus on capacity building of the NPVFA. This phase will be for a period of three years followed by a transition into phase two wherein the VFA will take 100% control and responsibility for its own operations.
- 10) A meeting was held 21 June in Thakhek between the Provincial Governor and the Chief Executive Officer of NTPC with their advisors. The GoL advised that logs harvested from salvage areas that were unsuitable for construction purposes and therefore sold by VFA who had been approved to harvest the logs, but not supplied with a quota to sell approved by the GoL. The Governor proposed the ownership of the logs be transferred back to the GoL to allow 17,000 cu.m. to be deducted from the NTPC tax free quota to be reduced to approximately 9,500 cu. m. Therefore the balance of tax free logs available to NTPC is now approximately 23,500 cu.m.
- 11) The construction of an activated carbon production plant near the Km4 Complex has commenced. This will provide a market outlet for local charcoal producers.
- 12) Early action in July is needed to introduce more strongly enforced regulations for workers in operations due to the expanded NTPC insurance coverage. Emphasis is required on safe working practices and accident prevention measures.

#### 2.3.4 Nakai Plateau Agricultural and Livestock Development Program

The NTPC teams are now focusing on the transition resettlement villages.

During the transition resettlement period, we encourage the resettlers grow the several vegetable as temporary vegetable garden and mushroom cultivation for the house consumption. The resettlers are now moving their own animals (e.g. buffalo and cattle) to new locations and we provide the necessary material for the animal shed. The relocation of animal of each transition resettlement village should be completed in July 2006.

The final report of the proposed integrated livelihood implementation plan has been received.

## ${\scriptstyle \circ\, Transition\ resettlement\ villages}$

Activity  1. Establishment of temporary vegetable garden at Sop Ma and Sop Hia.	as follow: Onion: 40 kg Morning glory: 10.5 kg Longbean: 2 kg Coriander: 16.5 kg Cucumber: 4 kg	Output / Result Completed at the two villages Sop Ma: 1,889 m2 Sop Hia: 875 m2	Assessment It is mainly for house consumption and the surplus product can be sold.
2. Crop seed supply and agriculture tools distribution	Provided agriculture tool: Hoe: 222 Spade: 111 Siem: 111 Hay Fork: 111 Knives: 222 Crowbar: 111 Watering can: 107	The distribution of such tools is completed	This agriculture tools are used for agriculture land clearing, vegetable Garden and other use.
	Vegetable seed were distributed as follow: Chili: 3,000 seedlings Eggplant: 2,000 seedlings Tomato: 1,000 seedlings Onion: 80 kg Morning glory: 22.5 kg Long bean: 1.6 kg Coriander: 23.7 kg Cucumber: 4 kg  Field crop were distributed as follow: Feed corn: 36 kg Sweet corn: 36 kg Sweet corn: 30 kg Upland rice seed: 3,817 kg  Actually, the field crop will grow from the month of July	Vegetable production were produced for house consumption and had surplus product for selling as follow:  1. Boua Ma: Morning glory: 47.8 kg Onion: 33.2 kg Coriander: 11.6 kg 2. Phonsavang: Morning glory: 34.5kg Coriander: 2.6 kg Onion: 5 kg 3. Keng Gnao: Morning glory: 28.7 kg Onion: 6.5 kg Mint: 1.7 kg 4. Sop On: Morning glory: 17.2 kg Onion: 4.8 kg	Four villages have received some household income from temporary vegetable garden as follow:  1. Boua Ma: 569,000 kip  2. Phonsavang: 151,000 k  3. Keng Gnao: 160,500 k  4. Sop On: 48,000 k  This wet season we encouraged the resettlers to grow more the rice than other crop and next season would be grown mainly field crop and vegetables
3. Agriculture land clearing	We supported the tools as mentioned above and paid for labor (e.g. 1,000,000 kip/0.66 ha, without take out the stumps and contour bunding)	Agriculture land clearing is still going on as follow:  1. Sop On completed 46.33 ha or 62% of total area.  2. Phonsavang completed 16 ha or  55.7% of 29.04 ha	Expected to complete within the month of July
4. Agriculture land fencing	347 rolls and nail to Sop On and the villager prepared fence post themselves. We paid for fence post and labor to villager.	Agriculture land fencing is completed at Sop On but Phonsavang expected to complete within this month. Agriculture land fencing at Boua Ma is now preparing fence post.	Follow up
5. Wet season crop cultivation	At Sop On, the rice seed were distributed 2,941 kg and other field crop seed including vegetable seed. Organic fertilizer is regularly distributed to apply to vegetable garden.	At Sop On, the rice is grown in 46.13 ha of area and other crop (peanut and feed corn) 1.2 ha  At Phonsavang, the rice is grown is 14.5 ha and corn grown 2.2 ha including feed	Follow up Follow up to take care the crop during vegetative period

	At Phonsavang, the rice seed were distributed 867 kg and other field	corn and sweet corn  At Keng Gnao is completed for growing:	Follow up to take care the crop during vegetative period
	crop  At Keng Gnao, the crop	Rice: 3.36 ha Peanut: 0.11 ha Feed corn: 0.17 ha Sweet corn: 0.25 ha	Follow up to take care the crop during
	were distributed as follow: Rice: 288 kg Peanut: 5 kg Feed corn: 4 kg Sweet corn: 5 kg Fruit trees: 400 seedlings	Fruit trees: 2.56 ha	vegetative period
6. Contour bunding	Conducted the survey and measure of contour line	At Keng Gnao, the survey and measure of contour line is completed while Sop On is completed 45% and Phonsavang 35%	On-going
7. Mushroom production	Provided 1,600 bags of sawdust mushroom spores to Boua Ma and 200 bags for Phonsavang. Constructed 8 mushroom houses for Boua Ma and only 1 mushroom house for Phonsavang.	Mushroom is produced by village as follow: Boua Ma: 44.1 kg and earned 101,000 kip Phonsavang: 26.1 kg and earned 41,000 kip Sop On: 66.1 kg and earned 161,000 kip	Mushroom production is one important component of familial food security and very suitable for every household even vulnerable household
8. Buffalo relocation	The resettlers are undertaken themselves for the buffalo relocation and also cattle but the project provided the string and payment for labor.	Sop Ma is relocated 116 buffaloes and remaining only 38 buffaloes. Sop Phene is relocated 150 buffaloes. Sop Hia is relocated only 25 cattle.	Expected to complete within the month of July or before flood.
9. Buffalo shed	The project provided the nail and payment for labor.	Starting to make 7 buffalo sheds at Sop Ma.	Expected to complete within the month of July.
10. Poultry and pig shed	Supplied the bamboo sheet wall, nail and other	Established the poultry shed as follow: Phonsavang: 10 units including 2 pig shed Sop On: 4 units including 6 pig shed Boua Ma: 6 units Sop Ma: 2 units Sop Hia: 7 unit	On-going and follow up
11. Animal Vaccination	vaccine to the resettled village: Hemorrhagic septicemia (HS): 50 bottle	Animal were vaccinated: Buffalo: 464 heads Cattle: 39 heads Pig: 161 heads Poultry: 1,350 heads	On-going and follow up
	New castle M: 50 bottle Swine fever: 40 bottle	Animal vaccination is done by Village Veterinary volunteer	

## ∘ NB-Pilot Village

During this wet season 2006, Most villagers like to grow the rice in 12.1 ha of planted area. The several vegetable is growing continuously particularly onion, cucumber and morning glory and also some field crop such as: peanut, feed corn and sweet corn.

Activity	Input / Support	Output / Result	Assessment
1. Wet season crop cultivation	Vegetable and field crop seed were distributed to pilot village:  Cucumber: 0.56 kg Coriander: 5.5 kg Onion: 28 kg Sweet corn: 10 kg M. glory: 8.5 kg Longbean: 0.4 kg Feed corn: 10 kg Peanut: 5 kg Spinach: 1 kg Pakchoy: 2 kg Rice seed: 560 kg	Vegetable and field crop are planted in 12.87 ha including 12.1 ha for rice cultivation which is involved 28 households.	On-going and follow up
2. Fertilizer production	Supplied raw materials to produce organic fertilizer (e.g. rice husk, animal dung, rice bran etc.)	9 household produced 4,140 kg of organic fertilizer themselves at NB-agricultural extension center	Applied to their owner vegetable garden. Each household received 460 kg.
3. Vegetable production	Vegetable cultivation is continuously activity throughout the year and the project also supplied continuously the necessity input to villager	During the month of June, only 21 households grown vegetable and the production is follow:	Planted area of vegetable of this month is too small (897 m2/hh) because many people involved to wage labor of VFA.
4. Mushroom production	This month did not supplied anything to pilot village	Produced 42.2 kg of mushroom, 12.7 kg of which is sold and earned 127,000 kip.	On-going and follow up
5. Pasture development	Conducted the survey of community pasture development about 21 ha and would also be surveyed at drawdown area about 184 ha. The project will provide the necessary material to be constructed buffalo shed	Completed of such survey	On-going and follow up. Firstly, buffalo shed would be constructed.

## o NB-Agricultural Extension Centre (Zone I)

The major role and function of the center is to produce organic fertilizer, sawdust mushroom spore and pig, poultry to supply to the resettlement village including pilot village and also provide the crop seed and seedling and technical assistance to the resettlers.

Activity	Input / Support	Output / Result	Assessment
1. Fertilizer production		Produced 13,810 kg of organic fertilizer 4,140 kg of which were distributed to pilot village and 9,960 kg of which distributed to the transition resettlement village and the center also produced 240 liter of Bio-Extract liquid.	The target monthly plan of organic fertilizer production is 10,000 kg but this month can produce more than our target plan about 38%.
2. Vegetable seedlings supply	Produced some vegetable seedlings such as: Chili: 3,000 seedlings Eggplant: 2,000 seedlings Tomato: 1,000 seedlings.	The vegetable seedlings were distributed to:  1. Boua Ma: Chili: 300 seedlings Eggplant: 500 seedlings 2. Sop Ma: Chili: 200 seedlings Eggplant: 500 seedlings Eggplant: 500 seedlings Gnao: Chili: 2,500 seedlings Eggplant: 1,000 seedlings Tomato: 1,000 seedlings.	On-going and follow up
3. Mushroom production	Produced 4,000 bags of sawdust mushroom spore	1,200 bag of sawdust mushroom spore were distributed to Boua Ma and Phonsavang 200 bag	We met exactly 4,000 bags of our target plan. Follow up
4. Demonstration plot on several crop	Maintain demonstration plot during vegetative period of feed corn, peanut, asparagus and chili.	Applied 1,300 kg of organic fertilizer and weeding in the total area 3,850 m2.	Follow up
5. Establishment of forage demonstration plot	Planted forage seed in 9,760 m2. B. Mulato: 10 kg B. Ruziziensis: 10 kg	There is completed and the fence is completed too.	Follow up

## $\circ$ Theun Douan-Agricultural Extension Centre (Zone II)

Activity	Input / Support	Output / Result	Assessment
1. Organic fertilizer production	Produced 2,113 bag of sawdust mushroom spore	Produced 5,425 kg of organic fertilizer, 3,250 of which supplied to Phonsavang and also 900 kg of which supplied to Sop On.	The target monthly plan of organic fertilizer production is 5,000 kg but this month can produce more than plan at about 8.5%.
2. Mushroom production		Mushroom production just started this month at TD-center to supply to Sop On, Phonsavang, Boua Ma and other resettlement villages.	distribute to the resettlers but will be distributed to the
3. Frog breeding	Frog breeding is done for the first time of this wet season but it is going on.	Produced 1,500 small frog	To be distributed to villagers after two months
4. Fruit trees propagation		Produced 110 grafted branches of mango	To be distributed to the resettlers in next month

## ∘ Nakai Neua - Fruit Trees Propagation Centre

Activity	Input / Support	Output / Result	Assessment
Distribution of fruit trees seedlings	Fruit trees seedlings were distributed to Keng Gnao as follow: Jack fruit: 10 seedlings Mango: 60 seedlings Mandarin: 120 seedlings Litchi: 50 seedlings Lemon: 60 seedlings	The fruit tees seedlings already planted on the contour bunding at the irrigated land area (0.66 ha/hh)	Follow up
2. Grafted seedling production		Produced the grafted seedlings (marcotted branches): Mango: 322 Litchi: 134 Lemon: 738 Mandarin: 16	Grafted seedlings is not yet cut out from parent plant as follow: Mango: 2,244 Lemon: 1,611 Litchi: 665 Jack fruit: 184 Mandarin: 260
3. Fruit trees seedlings in the nursery	We have some fruit trees seedlings in the nursery and ready to distribute to the resettlers as follow: Mango: 1,902 Mandarin: 2,879 Lemon: 5,040 Litchi: 1,739 Jack fruit: 210		
4. Organic fertilizer production	Produced 1,200 kg of organic fertilizer	Provided 200 kg of organic fertilizer to Sop Ma and Sop Hia. We are distributing continuously of the fertilizer to apply into their vegetable garden	We have now 6,820 kg of organic fertilizer in the stock to be distributed the transition villages

## Forestry Land Use Planning Allocation and Management (FLUPAM):

As mentioned on the previous monthly progress report, the demarcation of village boundary of six villages (Phonphanpek – Nong Boua – Boua Ma- Phonsavang – Sop On – Ban Done) is completed but the land use planning and land allocation is completed of 4 villages such as: Nong Boua, Boua Ma, Phonsavang and Sop On. We are now proceeding to conduct the village boundary demarcation of Phonphanpek – Oudomsouk – Nakai Neua – Nakai Tai and so on.

FLUPAM activity is one component related directly to livelihood restoration of the resettlers. NTPC staff collaborated closely with RMU, DWGs, Village authority and even mass organization of the village to undertake / implement carefully this activity. The village boundary demarcation must be agreed by all parties concerned particularly village authority / villagers and then we conducted the public consultation to make sure understanding of the villager about the land that they have in their own village by using the land use planning and land allocation map. Those maps are now under analysis for the land use potential for each village and then we can use of such land for livelihood restoration.

## 2.3.5 Fisheries Reservoir Program

No change from the previous report.

## 2.3.6 Community Development Program

Non-farm CD

Micro-credit: Village saving groups have been monitored in June in 8 villages (195 members)

Education: Meeting in Sop Phene, SopHia, SopMa, Bouama, SopOn and Phonsavang on nursery school in the relocated villages. Handover of play grounds in these villages and land clearance of the emplacement for new nursery school in Bouama.

Weaving groups monitoring in SopHia and Thalang.

Tailor group monitoring in Theun Douan and SopOn.

Monitoring and provision of rice, protein at SopOn, Phonsavang, Bouama, SopMa, Nongboua extension, Sop Phene and SopHia.



Land Clearing - Nursery Bouama

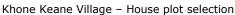
#### o On-farm CD

Collection of economic data before relocation in Done, Khone Kaen, Thalang, Nakai Tai, Nakai Neua.

### o ICD

Consultations in Khone Kaen, Done for agricultural and house plots selection. Training of Water User Group leaders at Nongboua village.

Resettlement village relocation planning activities in Done and Khone Kaen.







## o PCR & RS (CD)

Village Resettlement Office workshop on roles and responsibilities have been held in Bouama, SopMa, SopPia, Sop Phene, Nongbouakham.

Village Resettlement Committee quarterly meeting held on 27 of June in Oudomsouk.



VRC Quarterly Meeting on 27 - 28 June 2006

VRC Workshop on role and responsibilities



on 13-14 June 2006



**Social Activities** 

**Downstream Areas** 

# 2.4 Downstream Areas Development Plans

No change from previous report.

Page 48 / 68



# 3 Environmental activities

### 3.1 General

In addition to the monitoring of the HC's construction activities, reported in the Construction section of the report, and the PCR activities reported in section 2.1.1, the main activities of the Environmental Management Office in June 06 have included the following:

- Water quality sampling (27-30 June) and analysis
- Procurement activities for the Elephant Program including (i) Interim HEC Monitoring; and (ii) Elephant Program Phase II.
- Finalization of the Terms of Reference and of the advertisement for Expression of Interest for the Terrestrial Program.
- Request for proposals for the Wetlands Program.
- Revision of the field report for the baseline survey for fish and aquatic species in upstream and downstream rivers (Wildlife Program Element B).
- Review of the EMU TA Inception Report resulting in a revised version.

### 3.2 Wildlife Programmes

The description of the various elements of the components of the wildlife programme is included for reference.

# 3.2.1 Fish Impacts in upstream and downstream river species

This programme includes the following activities:

- 1. Species and habitat inventory (NT, XBF)
- 2. Monitoring of fish productivity
- 3. Fish migration studies in NT, NPA and XBF
- 4. NT habitat and flow studies
- 5. Modification of downstream NT habitat
- 6. Implementation of flow adaptive management programme and related activities
- 7. Incorporating river protection into the management of the NNT and Corridors

The baseline survey for fish and aquatic species in upstream and downstream rivers (Wildlife Program Element B) was conducted during the period of 18 April to 12 May 2006. The baseline survey was undertaken by the ichthyologist and his team with support from Living Aquatic Resource Research Center (LARReC). The objectives are to obtain a baseline fish and aquatic species (decapod crustaceans, turtles and amphibians) distribution and a habitat inventory in the downstream and upstream sections of the Nam Theun and Xe Bang Fai, including the Nam Phao/Nam Kata catchments.

The baseline survey is now complete and a field report was submitted on 22 May 2006. NTPC has reviewed the report and comments provided to consultant on 29 May 2006. The field report is under revision.

The final report is scheduled to be submitted on 31 July 2006.

### 3.2.2 Terrestrial animals in the inundation area

This programme includes the following activities:

- 1. Pre-impoundment species and habitat inventory, distribution and movement
- 2. Post-impoundment species and habitat inventory, distribution and movement (non-inundated part of the NP)
- 3. Development of a post-impoundment species management programme
- 4. Implementation of a post-impoundment species management programme
- 5. Finalization of the TOR for the survey components of the wildlife programme (fish and terrestrial animals).

During June 2006, activities included finalization of the Terms of Reference. A program for terrestrial wildlife species (excluding the Asian Elephant) found on the Nakai Plateau will be

implemented. The Nakai Plateau includes both within and outside the inundation area of the Nakai Plateau but excludes the wetland areas within the Nakai Plateau which are already covered by a specific plan, and excludes the Nakai-Nam Theun National Biodiversity and Conservation Area (NNT NBCA).

It will consist of (i) pre-impoundment species and habitat inventories with the objective to collect information on distribution and movements on the Nakai Plateau, and interactions between species, (ii) development of a post-impoundment species management program, (iii) implementation of this program during the construction phase, including post-impoundment monitoring of a number of species to determine how the reservoir has affected wildlife populations.

The program will have to be re-advertised because activities now include the development of the management plan and therefore the scope of work differs significantly from that previously advertised.

### 3.2.3 Asian Elephant Program

This programme includes the following activities:

- 1. Pre-impoundment inventory and survey of habitats, distribution, movements.
- 2. Implementation of a pre-Reservoir impoundment elephant management programme.
- 3. Post-Reservoir impoundment monitoring of movements and distribution.
- 4. Training of local authorities in conflict response and emergency response.
- 5. Establishment and implementation of an elephant conflict response team.
- 6. Development of a transitional strategy for reservoir impoundment.
- 7. Implementation of a reservoir impoundment elephant strategy.
- 8. Implementation of post impoundment elephant programme.

Phase I of the Elephant Program is being conducted by Wildlife Conservation Society (WCS). Phase I includes items 1, 4 and 5 above. The training, survey and monitoring components of Phase I have been completed and the Final Report for Phase I was submitted on 31 May 2006.

A population estimate of 142 (95% CI=97,207) individuals (established by WCS) based on the line transect and dung decay data. This compares to previous estimates of between 100-400 individuals. The population will also be estimated using fecal DNA capture-mark-recapture. However, a review of the Final Report has identified that the report is still lacking a full assessment for the majority of activities under the TOR; including (i) population estimate based on fecal DNA; (ii) seasonal movements based in DNA capture-mark-recapture; (iii) HEC - analysis of extent; (iv) habitat/resource use; and (v) feasibility of creating artificial salt licks. The report is still under revision.

WCS has been identified as the consultant likely to conducted Phase II of the elephant program. During June 2006, the Terms of Reference have been finalized, a contract drafted and submitted to WCS for comment and submission of a cost proposal. The objectives of Phase II are to develop and implement an elephant management plan for pre- and post-inundation management of elephants on the Nakai Plateau. Activities will include a continuation of HEC monitoring and training the villagers in passive and active crop protection measures.

During the period between the end of Phase I and the commencement of Phase II, HEC monitoring shall continue to obtain data on the spatial and temporal distribution of HEC on the Nakai Plateau and surrounding areas. The Terms of Reference and cost proposal have been finalized. A contract has been drafted and submitted to WCS for comment.

# 3.2.4 Transitional Strategy for Reservoir Impoundment

This programme includes the following activities:

- 1. Development of a strategy and measures targeting wildlife during salvage logging of the Nakai Reservoir.
- 2. Development of a transitional strategy for reservoir impoundment.
- 3. Training of local authorities in wildlife emergency response.
- 4. Establishment and implementation of an emergency response team.
- 5. Public awareness programme.
- 6. Prevention and prohibition of wildlife trade.

The Terms of Reference are being finalized prior to re-advertising.

### 3.2.5 Wetland Conversion and Formation Program

This overall program includes the following activities:

- 1. Pre-impoundment species and habitat inventory, distribution and population.
- 2. Development of a strategy for species and habitat management after impoundment.
- 3. Implementation of habitat and species management programme.
- 4. Implementation of biodiversity aspects of reservoir management plan.
- 5. Patrolling of special conservation areas (WMPA).
- 6. Post-impoundment monitoring of populations and distribution.
- 7. Post-impoundment reservoir fish productivity and species monitoring.

The consultant previously identified for the Wetlands Program indicated that he no longer has the resources to commence activities during the dry season 2006. Procurement is still underway for activities 1 and 2 above. The Terms of Reference have been finalized and a contract drafted. The consultant has been requested to provide a detailed proposal and work plan to commence activities at the start of the next dry season. The proposed commencement date for the pre-impoundment baseline species and habitat inventory has been reschedule to September 2006.

# 3.2.6 Adaptive Management Programmes

An Adaptive Management approach will be implemented for the following programmes:

- 1. Wildlife Programme (all components)
- 2. Riparian release downstream of the Nakai Dam
- 3. Water release in the Nam Kathang
- 4. Water release from the regulating pond to the downstream channel

Page 52 / 68

# 3.3 Water Quality Monitoring and Assessment Programme

NTU: Nephelometric Turbidity Unit.

TSS: total suspended solids (mg/L)

During June 2006, the WQMAP monitored 27 parameters at twelve surface water sampling sites. The eleven surface water sampling sites are located upstream and downstream of construction areas on the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bang Fai. Given the ongoing elevated sediment load in the Nam Kathang the spatial distribution of turbidity was assessed along the Nam Kathang.

#### June 2006 Field Observations

Sample collection and field analysis was conducted during 27-30 June 2006. Laboratory analyses will be reported in July 2006. The major field observations and measurements are as follows:

- Turbidity in the Nam Kathang had decreased significantly when compared to the previous month. The reduction in the Project induced turbidity coincides with improvements made in the management of suspended solids in the Access Adit and Power House discharges. Improvements in management include (i) continuous application of a coagulant (polyaluminium chloride); (ii) installation of flash mixing to facilitate initial coagulation; (iii) redesign of sedimentation basins to facilitate flocculation and settling; and (iv) using pumps to extract settled sediment.
- The figure below shows the improvements in turbidity for June 2006. Turbidity remains within the Project guideline for the majority of the length of the upper Nam Kathang. The exceedance of the Project guideline approximately 1.5 km downstream from the Access Adit discharge was a result of in-stream excavation activities at the Nam Kathang Diversion. The exceedance is localized and limited to a small section of the upper Nam Kathang.



Spatial Distribution of Turbidity in Nam Kathang - May to June 06

#### May 2006 Water Quality Results

The laboratory analytical results for May 2006 are presented in the table below. As a screening procedure, the results have been compared with Project and river-specific guidelines. Values highlighted in yellow represent exceedances. Comparison of measured values with guidelines is intended as an initial screening step to assist in data interpretation. Exceedances can then be considered on a site-specific basis to assess whether a measured value poses an environmental or human health risk. The significant exceedances are discussed below,

Page 53 / 68

### Nam Theun

- Despite a few exceedances the water quality in the Nam Theun can still be considered good. With the exception of elevated ammonia at SW2, there is no evidence that construction activities are having a negative impact on water quality of the Nam Theun.
- Ammonia exceeds the Project guideline at both the upstream control site (SW1) and downstream of the of the Ban Thalang Permanent Bridge (SW2) construction area. Elevated ammonia at SW1 is likely to be sourced from decomposition of organic nitrogen in runoff from forested and agricultural areas. Poor sanitation infrastructure and livestock are another source however human and livestock populations are low in this area. These non-Project sources of ammonia also exist upstream of SW2 and inputs of ammonia may be coming from the village of Ban Thalang. However, elevated ammonia at SW2 may also be generated by Project activities, including (i) ammonia containing sediment being released during excavation activities for the Ban Thalang Bridge coffer dams; and (ii) construction workers not using the appropriate toilet facilities provided, and (iii) incorrectly designed, built, and/or operated sanitary waste treatment facilities.

#### Nam Kathang

- Water quality in the Nam Kathang continued to be adversely impacted by construction activities and in particular the discharges from the Access Adit, Powerhouse and Regulating Dam construction areas. Fourteen parameters exceed their respective guidelines downstream of the Regulating Dam (SW9).
- Turbidity and TSS significantly exceeded their respective Project guideline. Downstream of
  the Regulating Dam the measured turbidity was over five times the guideline and TSS is
  40 times the guideline. The analytical results supports field observations with highly turbid
  water being discharged into the Nam Kathang from the Access Adit, Powerhouse and
  Regulating Dam construction areas. During the May 2006 sampling event turbidity
  exceeded the Project guideline for over 15 km downstream of the Access Adit discharge.
- Organic and inorganic nitrogen-based nutrients exceeded their guidelines downstream of the Regulating Dam (SW9). Given that no communities residing upstream of this sampling site the likely sources of these elevations are surface soil excavation activities at the Regulating Dam leading to the release of organic and inorganic nitrogen. It is possible that outflows from the RNT wastewater treatment works are contributing but further monitoring will be required to confirm this.

For nitrate, levels are below the WHO guideline (50 mg/L) for nitrate to protect bottle-fed infants from methemoglobinemia and therefore not deemed to be a risk to human health.

For nitrite, although the level is above the WHO guideline of 0.2 mg/l is for long term exposure, it is still within the WHO guideline of 3 mg/l for methemoglobinemia in infants (short term). The WQMAP will continue to monitor whether the elevated nitrite levels persist.

There is no human or environmental health based guideline for TKN but rivers with TKN concentration below 1 mg/l tend to be classified as good. Although levels at SW9 exceed 1 mg/l, that is not considered a direct threat to either the environment or human health.

- Silica exceeded the river-specific guideline at SW9. This elevation is consistent with excavations works at the Regulating Dam which are likely to contain silicate containing sandstone and rocks. There are no environmental protection or human health-based guidelines for silica in water therefore the levels measured are not deemed to present a risk to environmental or human health.
- Elevations in pH, alkalinity and calcium were consistent with each other. Although dry season levels of these parameters are generally higher in lowlands areas because of groundwater inputs this does not explain the sharp elevation at SW9. It is possible that blasting of limestone bedrock may be contributing to these elevations. However, none of these exceedences are deemed to pose a risk to human or environmental health.
- Faecal coliform counts exceeded the Project guideline downstream of the Powerhouse and Regulating Dam. Although some livestock use the upper Nam Kathang as a source of water, construction workers are still observed not using the sanitation facilities provided. Faecal coliform levels from these two sources will be exacerbated by elevated TSS which act as a substrate for growth. Elevated levels of faecal coliform are indicators for elevated bacteria and pathogen load in the water which pose a risk to human health. Communities should continue with the practice of boiling surface water prior to consumption.

### **Nam Gnom**

- With the exception of elevated faecal coliform, the water quality in the Nam Gnom continued to be good with few significant exceedences of the Project or river-specific quidelines.
- Consistent with alkalinity, calcium levels slightly exceeded the Project guideline. During the dry season there is a higher proportion of groundwater from surrounding limestone karst formations in the surface water flow. The measured alkalinity and calcium is considered representative of ambient condition for the dry season and does not pose a threat to the environment or human health.
- Faecal coliform counts exceeded the Project guideline downstream of Ban Thathod. The sampling site is upstream of construction activities or camps and therefore not considered to be Project-related. This elevation is resulting from poor sanitation infrastructure and livestock around the community of Ban Thathod. Elevated levels of faecal coliform are indicators for elevated bacteria and pathogen load in the water which pose a risk to human health. Communities should continue with the practice of boiling surface water prior to consumption.

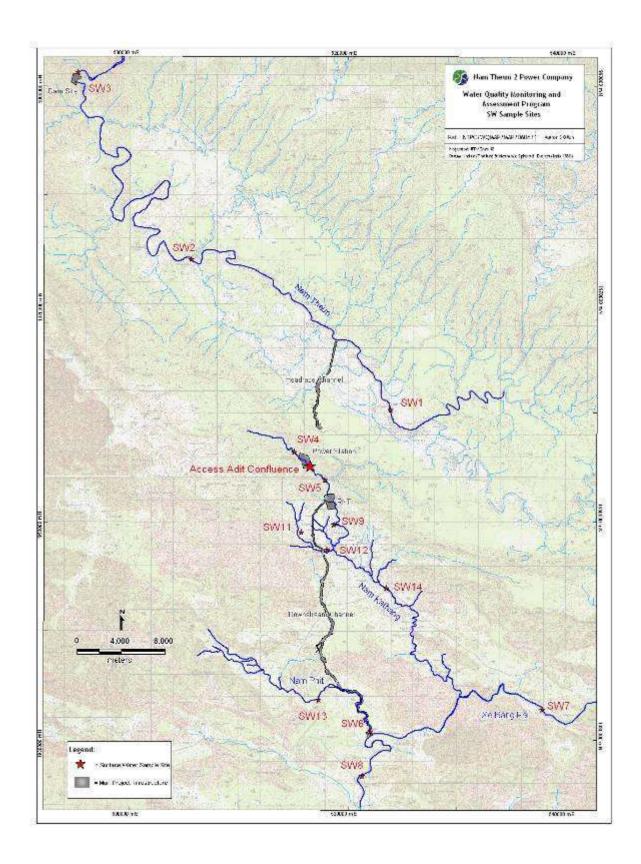
#### **Nam Phit**

- With the exception of elevated TSS, the water quality in the Nam Phit continues to be good.
- Calcium slightly exceeds the Project guideline for the same reasons as discussed for the Nam Gnom above. The lowlands areas are dominated by limestone geology and high calcium levels are consistent with higher groundwater inputs in dry season surface water.
- TSS exceeds the Project guideline in the Nam Phit. This elevation is consistent with recently cleared vegetation along the banks of the Nam Phit for UXO clearance.

### Xe Bangfai

 The water quality in the Xe Bangfai continues to be good and there is no evidence that construction activities, which are having a negative impact on the Nam Kathang, are impacting the Xe Bangfai.

Page 55 / 68



		wo	River-	Nam Theun			
Parameter	Unit	Guidelines	Specific Guideline	SW 1	SW 2	SW 3	
Sampling Date				27/05/06	27/05/06	27/05/06	
Sampling Time				07.28 h	12.35 h	11.00 h	
Water Depth	(m)			1.2	1.8	8.4	
Sampling Method				grab	grab	grab	
Air Temperature	(°C)			23.8	32.4	30.2	
Cloud Coverage							
Water Temperature	(°C)			26.2	27.8	27.8	
pН	, ,	6.0-8.0		7.32	8.12	7.56	
DO	(mg/L)	> 5.0		7.6	7.74	8.72	
% DO Saturation	(%)			104.4	105.3	107.2	
Conductivity	(µS/cm)	< 350 or <750 *		49.1	56.5	71.8	
Turbidity	(NTU)	< 200		5.8	9.87	13.4	
Total suspended solids	(mg/L)	< 40 or <80*		3.4	4.8	5	
Alkalinity	(mg/L)	_11	36.4	19.8	18.6	22.1	
Ammonia-nitrogen	(mg/L)	< 0.5		0.791	1.20	0.077	
Nitrate-nitrogen(NO <sub>3</sub> -N)	(mg/L)	< 3.4		0.241	0.162	0.124	
Nitrite-nitrogen(NO <sub>2</sub> -N)	(mg/L)	< 0.2		$ND^1$	0.006	$ND^1$	
Kjeldahl nitrogen(TKN)	(mg/L)	_11	1.030	0.557	0.446	0.557	
Potassium (K)	(mg/L)	_11	1.06	1.07	1.26	1.27	
Sodium (Na)	(mg/L)	300		3.7	3.0	4.1	
Manganese (Mn)	(mg/L)	< 0.5		0.022	0.031	0.02	
Total iron (Fe)	(mg/L)	< 1.0		0.292	0.371	0.358	
Lead (Pb)	(mg/L)	< 0.05		$ND^3$	$ND^3$	$ND^3$	
Calcium (Ca )	(mg/L)	50		3.51	2.66	3.26	
Magnesium (Mg)	(mg/L)	< 15		1.08	0.84	0.94	
Silica (SiO <sub>2</sub> )	(mg/L)	_11	10.3	6.97	7.49	9.95	
Sulphate (SO <sub>4</sub> -2)	(mg/L)	< 500		5.56	4.65	3.43	
Chloride (Cl-)	(mg/L)	< 250		1.75	2.04	1.26	
Total mercury (Hg)	(mg/L)	< 0.001		0.0002	0.0003	0.0004	
Arsenic (As)	(mg/L)	< 0.05		ND <sup>5</sup>	0.0003	$ND^5$	
BOD	(mg/L)	< 15		0.6	0.6	0.6	
COD	(mg/L)	< 40		17.3	14.1	11.0	
Total phosphorus	(mg/L)	< 0.2		0.010	0.016	0.010	
Faecal Coliform	(C/ 100mL)	150		27	44	38	

<sup>11</sup> No Project or internationally recognized guideline available therefore the river-specific guideline shall be adopted as the trigger

Parameters which exceed the Project trigger.

Non-detectable (Detection limit = 0.001 mg/L)

<sup>4</sup> Non-detectable (Detection limit = 0.005 mg/L)

<sup>6</sup> Non-detectable (Detection limit = 0.0003 mg/L)

Non-detectable (Detection limit = 0.16 mg/L)
Non-detectable (Detection limit = 0.010 mg/L)

Non-detectable (Detection limit = 0.0002 mg/L)

<sup>7</sup> Non-detectable (Detection limit = 2.0 mg/L)

 $<sup>^{\</sup>star}$  350  $\mu\text{S/cm}$  for Nam Theun; 750  $\mu\text{S/cm}$  for lowlands rivers

<sup>40</sup> mg/L for all rivers in all seasons with the exception of 80 mg/L for the Xe Bangfai in wet season

		WQ Guidelines	River- Specific Guideline	Nam Kathang			Nam Gnom		
Parameter Unit	Unit			SW 4	SW5	SW 9	SW 14	SW 11	SW 12
Sampling Date				26/05/06	26/05/06	26/05/06	25/05/06	26/05/06	26/05/06
Sampling Time				08.49 h	10.00 h	09.30 h	10.36 h	10.40 h	13.05 h
Water Depth	(m)			0.2	0.2	0.2	0.8	0.3	0.5
Sampling Method				grab	grab	grab	grab	grab	grab
Air Temperature	(°C)			32.4	30.3	30.4	27.8	30.8	38.2
Cloud Coverage									
Water Temperature	(°C)			28.3	28	29.4	28.6	24.8	29.4
рН		6.0-8.0		7.63	7.94	8.21	7.94	8.16	7.93
DO	(mg/L)	> 5.0		7.22	6.52	7.51	7.16	10.35	8.19
% DO Saturation	(%)			95.4	84.5	99.5	98	127.4	109.3
Conductivity	(µS/cm)	< 350 or <750 *		329	315	349	365	344	277
Turbidity	(NTU)	< 200		3.04	870	> 1,100	43.5	9.75	31.5
Total suspended solids	(mg/L)	< 40 or <80*		1.7	340	1,780	36	18.8	29.3
Alkalinity	(mg/L)	_11	133.8	94.3	109	485	144	189	151
Ammonia-nitrogen	(mg/L)	< 0.5		0.131	0.295	2.72	0.211	0.025	0.113
Nitrate-nitrogen(NO <sub>3</sub> -N)	(mg/L)	< 3.4		0.029	6.4	13.2	0.313	1.05	0.512
Nitrite-nitrogen(NO <sub>2</sub> -N)	(mg/L)	< 0.2		$ND^1$	0.167	0.651	0.037	0.012	0.006
Kjeldahl nitrogen(TKN)	(mg/L)	_11	1.089	$ND^2$	0.452	3.28	0.339	0.452	0.566
Potassium (K)	(mg/L)	_11	1.56	2.04	2.86	8.30	1.70	0.478	4.11
Sodium (Na)	(mg/L)	300		7.06	19.00	36.2	6.95	1.25	1.24
Manganese (Mn)	(mg/L)	< 0.5		0.024	0.178	1.07	0.098	0.028	0.039
Total iron (Fe)	(mg/L)	< 1.0		0.09	7.65	15.2	1.02	0.28	0.701
Lead (Pb)	(mg/L)	< 0.05		$ND^3$	$ND^3$	$ND^3$	$ND^3$	$\mathrm{ND}^1$	$ND^1$
Calcium (Ca )	(mg/L)	50		33.1	33.8	160	39.9	54	39.8
Magnesium (Mg)	(mg/L)	< 15		5.4	5.25	14.6	2.95	2.3	2.25
Silica (SiO <sub>2</sub> )	(mg/L)	_11	16.2	14.7	14.3	29.4	8.53	7.16	8.34
Sulphate (SO <sub>4</sub> -2)	(mg/L)	< 500		66.2	32.8	21.8	13.3	1.72	3.03
Chloride (Cl-)	(mg/L)	< 250		0.19	8.06	8.06	6.7	0.58	1.55
Total mercury (Hg)	(mg/L)	< 0.001		$ND^4$	$ND^4$	$\mathrm{ND}^4$	$\mathrm{ND}^4$	$ND^2$	$\mathrm{ND}^2$
Arsenic (As)	(mg/L)	< 0.05		0.0014	0.0047	0.0047	$ND^5$	$ND^3$	0.0019
BOD	(mg/L)	< 15		0.7	0.9	1.3	1.2	1.1	0.7
COD	(mg/L)	< 40		3.2	17.6	19.2	16.0	35.2	15.7
Total phosphorus	(mg/L)	< 0.2		0.030	0.037	0.057	0.013	0.017	0.010
Faecal Coliform	(C/ 100mL)	150		78	234	194	54	248	112

11 No Project or internationally recognized guideline available therefore the river-specific guideline shall be adopted as the trigger

- Non-detectable (Detection limit = 0.001 mg/L) Non-detectable (Detection limit = 0.16 mg/L)
- Non-detectable (Detection limit = 0.005 mg/L) Non-detectable (Detection limit = 0.0002 mg/L)
- Non-detectable (Detection limit = 0.0003 mg/L)

- Non-detectable (Detection limit = 0.010 mg/L)
- Non-detectable (Detection limit = 2.0 mg/L)

Parameters which exceed the Project trigger.

\* 350 μS/cm for Nam Theun; 750 μS/cm for lowlands rivers

<sup>40</sup> mg/L for all rivers in all seasons with the exception of 80 mg/L for the Xe Bang Fai in wet season

			River-	Nam Phit
Parameter	Unit	WQ Guidelines	Specific Guideline	SW 6
Sampling Date				25/05/06
Sampling Time				11.55 h
Water Depth	(m)			0.8
Sampling Method				grab
Air Temperature	(°C)			25.2
Cloud coverage				
Water Temperature	(°C)			25.5
pH		6.0-8.0		7.81
DO	(mg/L)	> 5.0		7.86
% DO Saturation	(%)			104.1
Conductivity	(μS/cm)	< 350 or <750 *		412
Turbidity	(NTU)	< 200		85.7
Total suspended solids	(mg/L)	< 40 or <80*		73
Alkalinity	(mg/L)	_11	252.6	229
Ammonia-nitrogen (NH <sub>3</sub> -N)	(mg/L)	< 0.5		0.099
Nitrate-nitrogen(NO <sub>3</sub> -N)	(mg/L)	< 3.4		0.352
Nitrite-nitrogen(NO <sub>2</sub> -N)	(mg/L)	< 0.2		0.006
Kjeldahl nitrogen(TKN)	(mg/L)	_11	0.688	$ND^2$
Potassium (K)	(mg/L)	_11	0.19	0.414
Sodium (Na)	(mg/L)	300		0.874
Manganese (Mn)	(mg/L)	< 0.5		0.04
Total iron (Fe)	(mg/L)	< 1.0		0.349
Lead (Pb)	(mg/L)	< 0.05		$ND^3$
Calcium (Ca )	(mg/L)	50		59.4
Magnesium (Mg)	(mg/L)	< 15		5.45
Silica (SiO <sub>2</sub> )	(mg/L)	_11	8.8	8.67
Sulphate (SO <sub>4</sub> -2)	(mg/L)	< 500		3.03
Chloride (Cl <sup>-</sup> )	(mg/L)	< 250		0.58
Total mercury (Hg)	(mg/L)	< 0.001		ND <sup>4</sup>
Arsenic (As)	(mg/L)	< 0.05		$ND^5$
BOD	(mg/L)	< 15		0.8
COD	(mg/L)	< 40		12.8
Total phosphorus	(mg/L)	< 0.2		$ND^6$
Faecal Coliform	(C/100mL)	150		69

River-	Xe Bang Fai				
Specific Guideline	SW 7	sw 8			
	25/05/06	25/05/06			
	9.38 h	12.55 h			
	1.2	1.5			
	grab	grab			
	31.2	27.1			
	29.6	28.5			
	7.92	8.04			
	8.06	7.98			
	101.5	129.4			
	319	320			
	4.02	6.89			
	2.5	3			
200.6	172	172			
0.134	0.071	0.095			
0.250	0.029	0.044			
	$ND^1$	$ND^1$			
0.559	$ND^2$	0.226			
0.68	0.726	0.589			
	1.86	1.46			
	0.031	0.025			
	0.117	0.185			
	$ND^3$	$ND^3$			
	45.2	46.4			
	3.65	3.75			
10.5	11.6	10.6			
	4.04	3.33			
	0.78	1.17			
	$\mathrm{ND}^4$	$\mathrm{ND}^{\scriptscriptstyle{4}}$			
	ND <sup>5</sup>	$ND^5$			
	0.5	0.5			
	6.4	8			
	$\mathrm{ND}^6$	$ND^6$			
	39	34			

<sup>11</sup> No Project or internationally recognized guideline available therefore the river-specific guideline shall be adopted as the trigger

Non-detectable (Detection limit = 0.001 mg/L)

<sup>4</sup> Non-detectable (Detection limit = 0.005 mg/L)

<sup>6</sup> Non-detectable (Detection limit = 0.0003 mg/L)

Non-detectable (Detection limit = 0.16 mg/L)

Non-detectable (Detection limit = 0.0002 mg/L)

<sup>7</sup> Non-detectable (Detection limit = 2.0 mg/L)

Non-detectable (Detection limit = 0.010 mg/L)

Parameters which exceed the Project trigger.

<sup>\* 350</sup> μS/cm for Nam Theun; 750 μS/cm for lowlands rivers

<sup>40</sup> mg/L for all rivers in all seasons with the exception of 80 mg/L for the Xe Bang Fai in wet season

# 3.4 Environment Management Unit Technical Assistance

On 2 June 2006, the EMO, EMU and EMU TA met to discuss EMU issues which included (i) Priority list of NTPC's Environment Programs; (ii) Assist in elucidating responsibilities on some Environmental Measures as identified in CA; (iii) Overview of environmental grievance procedure; (iv) Overview of environmental training for the construction workforce; and (v) request by EMU for a safety induction of EMU staff. The safety induction for EMU staff was subsequently provided by the HC during June 2006.

During June 2006, the Inception Report for the Technical Assistance to the Environmental Management Unit (EMU) was revised based on NTPC comments which were submitted to the EMU on 20 June 2006. The objectives of the Inception Phase are presented below.

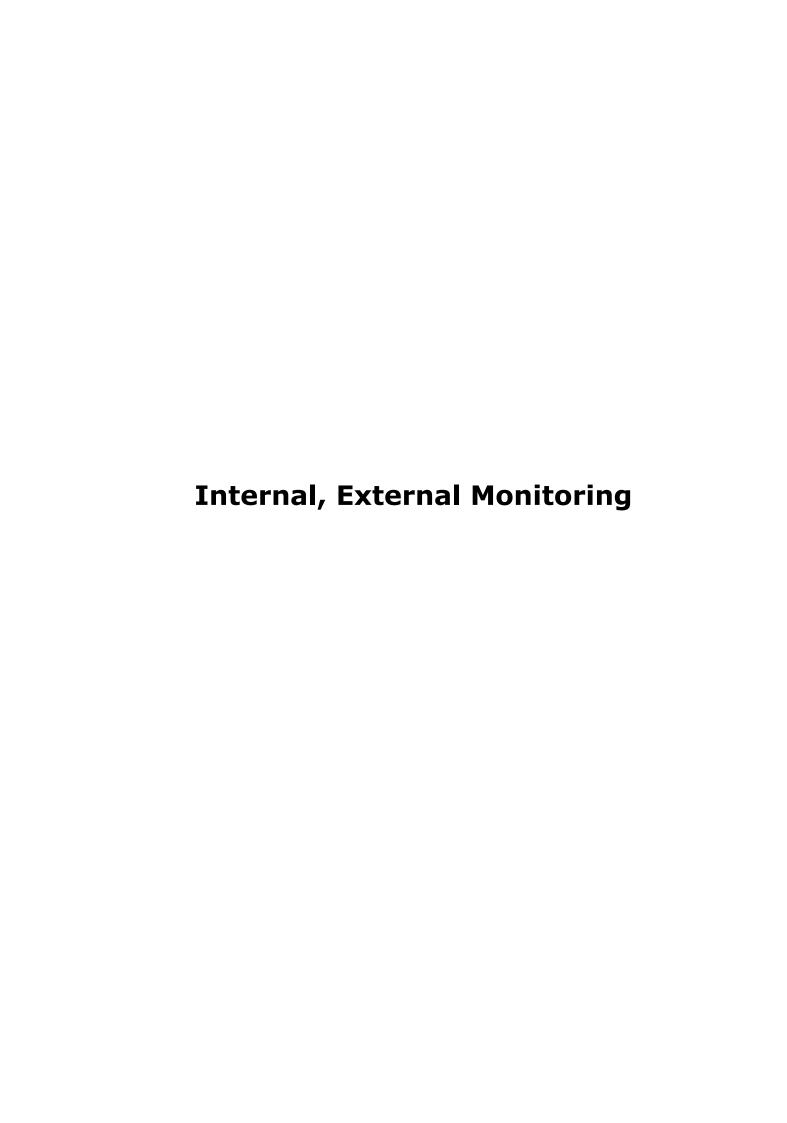
- Identify the core GOL obligations to be implemented by the EMU, with respect to the Environmental Measures
- Assist the EMU to coordinate its work with other governmental authorities and nongovernmental agencies concerned with environmental objectives
- Conduct a training needs assessment or SWOT analysis to identify institutional knowledge gaps
- Develop office management capacity of the EMU
- Advise GOL regarding the requirement for, and contracting of, specialty studies to be conducted over the term of the TA Programme.
- Develop an Environmental Monitoring Programme
- Assist the EMU with the procurement of the Environmental Independent Monitoring Agency
- Equip the EMU office located at the STEA Vientiane, EMU provincial offices, field office
- Identify any variations in the scope of the work of the TA Programme.

On 20 June 2006, the EMO provided the EMU and EMU TA with a presentation of NTPC Environmental Programs. The EMU and EMU TA will use the information provided to identify priorities for monitoring.

### 3.5 Environmental measures linked to construction

The environmental activities linked to construction works are part of the Construction Progress Report (Part B of the whole Monthly Progress Report).

Page 60 / 68



# 4 Internal and External Monitoring

IMA Appointment not finalized by GOL/WB. NTPC and the GOL decided to move forward with NTPC handling the procurement process on behalf of the GOL. Consultants' Qualification Selection method (CQS) was chosen.

Advertisements have been posted in local (Vientiane Time) and International (Bangkok post and UNDB Online) media during the second half of May 2006. Deadline for receipt of Expressions Of Interest was 13th of June 2006.

In the meantime – 29 May 2006, NTPC has officially asked the GOL to designate its personal who will participate in this procurement.

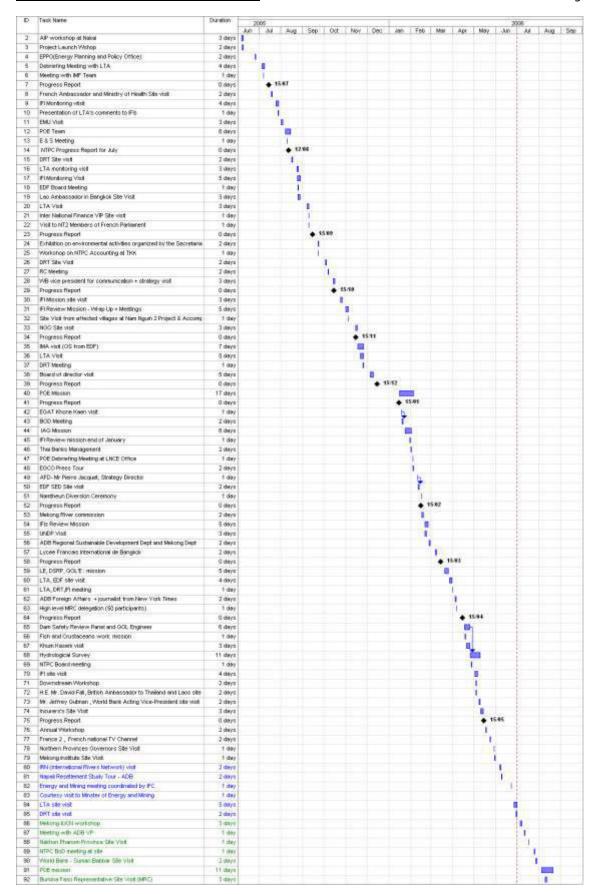
On the 13th of June, 18 Expressions Of Interests were received from various firms or organizations and evaluation methodology was set up.

However, the evaluation did not start due to the decision to enlarge the scope of works of the IMA so that to combine both Social and Environmental activities. The main idea was to benefit from the synergies existing between both activities for most the E&S programmes.

Further to the enlargement of the scope of works, decision was taken to re-advertise. Firms or organizations which already expressed their interest pursuant to the first advertisement will be notified of the changed scope of works and will have the possibility to complete their proposal to cope with the extra requirements. Re-advertisement will be posted during the second half of July.

Due to the higher estimate price of the services, the selection method might be changed.

### Schedule of visits since Financial Close: Visits of the month in blue - Next scheduled visit in green.





# 5 GOL related activities

### 5.1 Watershed Management Protection Authority (WMPA)

NTPC received the quarterly report (1st quarter) of the WMPA in June 2006. The executive summary lists the Principal Achievements for that time period as follows:

Finance and Administration Division:

- Improvement to the current finance and administration structure and manual
- Procurement of vehicles, computers, photocopiers, camera traps, long-tail boats and other field equipment
- Placement of a Finance and Administration Technical Advisor
- Construction of 5 additional rooms for staff accommodation which would be adequate for 15 additional people
- Installation of radio equipment for improved communication with field staff

#### **FLUPAM Division**

- Continuation of the PICAD process in the Ban Navang Kaging cluster
- Visits by senior provincial and district staff to this cluster

### LDC Division

- Conducted information and training courses
- Consultations with villagers in preparation for health, education and livelihood development activities

### 5.2 Optimization of salvage logging on the Nakai Plateau

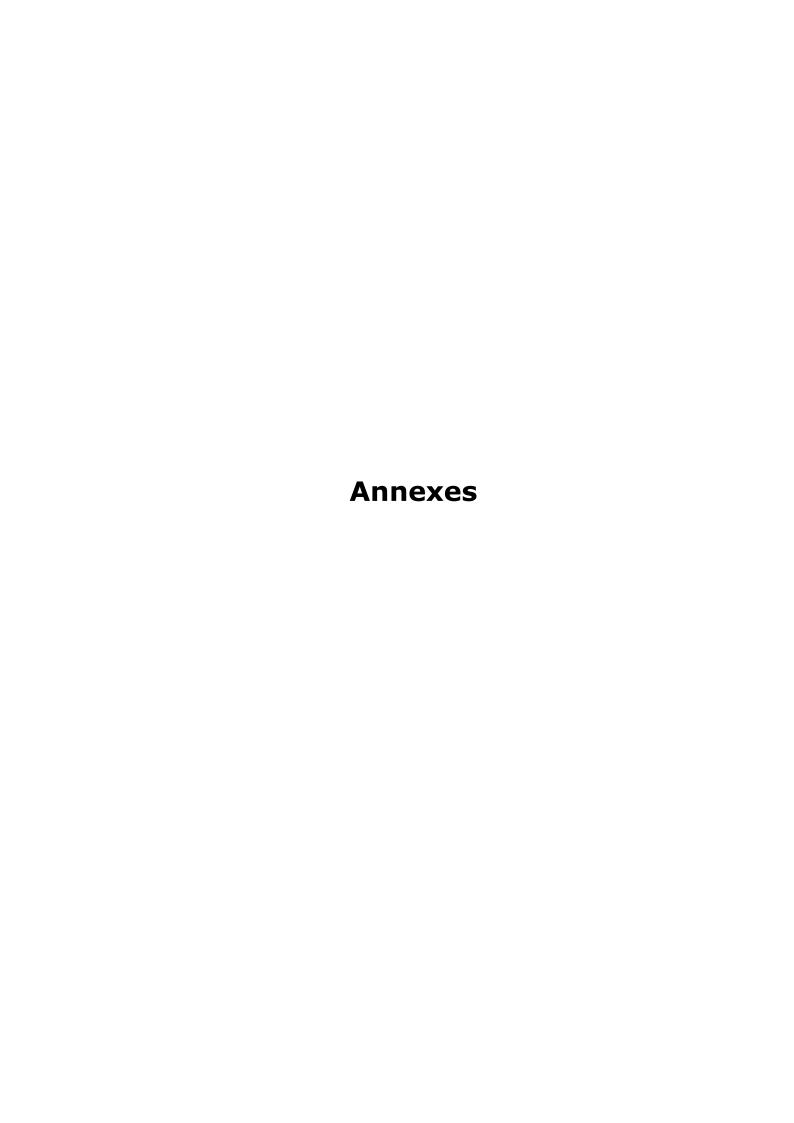
The GOL was in negotiations with potential logging Contractors for the larger diameter timber on the Nakai Plateau with the goal of auctioning off different areas of timber where the Contractor would be responsible for cutting and transport off the Plateau. The GOL plans for logging activities to commence in full after this years' monsoon season. Negotiations were taking longer than expected due to some capacity constraints and financial limitations of the potential Contractors. As a result of these limitations, the GOL has decided to directly contract with Logging Contractors to cut the trees and transfer them to a landing area. A bidding process for purchase of these logs will occur at the landing area. There will likely be more than one landing area where the logs will be auctioned. The winning bidders will be responsible to transport the logs from the landing area to the sawmills, or for sale to a third party. The transport route for the majority of the logs will most likely be the new road exiting near Ban Thongkong on Road 12. A minority of logs will be exited through the Laksao road. A draft of the EIA for the new road will be distributed in July 2006 to concerned parties. A draft report of The Social Impacts of the Salvage Logging Operation has been available since mid-March.

### 5.3 Social issues

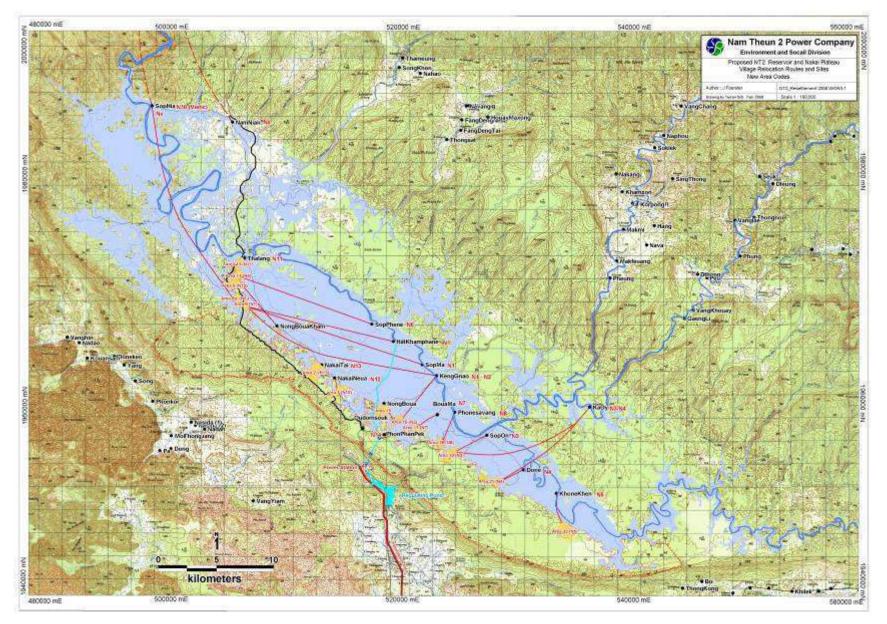
A Resettlement Committee (RC) meeting was held on 21 June 2006 at the new Provincial Guesthouse Number 1 in Thakhek. Some of the topics discussed are as follows:

- RMU Organization Chart has been modified, updated and improved to reflect the changing situation on the ground. Six Villages have been moved to date. The Agricultural Program has begun late and is moving ahead slowly. The UXO Clearance is not yet finished. There are 26 households (137 people) that have moved in from outside the Nakai Plateau to the Resettlement Area. This issue has been reported from the RC Chairman to the central government already and advice / direction has been requested to solve the problem. These families are not part of the Resettlement Entitlements Program and have not received any form of compensation from the Project yet. They are currently living with their relatives.
- Sop Hia / Nam Nian. 36 households have already moved to the new resettlement site on Nakai Plateau. Most of the remaining households are expected to move to Nakai in Phase 2 of the Resettlement. A minority of households may move to Khamkeut which is to be decided at a later date.

Page 65 / 68



Proposed NT2 Reservoir Nakai Plateau Village Relocation Routes



#### Transition Resettlement Schedule

