

Environment and Social Monitoring Report

Monthly Progress Report
January-June 2007 (3/3)

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.

Nam Theun 2 Hydro-Electric Project

**Monthly Progress Report
covering activities in May 2007**

Part C : Environmental & Social Report

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General Overview

1 General Overview

Project lands:

- Replacement house construction in Gnommalat is now 70% complete
- A detailed review of drainage issues associated with spoil deposits adjacent to Ban Phonphanpek and the Ban Sangkeo School was undertaken.
- Livelihood restoration activities continued
- An update of obstacles within the transmission line corridor was prepared.

Public Health:

Following major activities were undertaken during May 2007:

- GMLT DH still requires a number of small items to be completed as part of the construction
- Access to GMLT DH from the main road is in progress in collaboration with Project Lands.
- Land levelling around GMLT DH is urgently required and HPMU is consulting infrastructure for this work.
- Power supply to Naxok has been completed but Khedphit is still not connected because of slow progress at GMLT DHO
- Some furniture items have been delivered but 30% remains to be delivered
- Rehabilitation of MHX DHO is almost nearing completion
- Number of training courses held during the month:
 - Three-Day Training on Emergency Obstetric Care in Nakai, GMLT, MHX, Xe Bangfai, Nongbok, Hinboun and Thakhek Districts, Khammouane Province 2-26 May 2007.
 - One-day training on conducting health checks and survey in Sop Hia village on 6 May 2007
 - Three-Day training of traditional practitioners on the use of traditional medicine/plants in Nakai on 16-18 May 2007. A specially designed questionnaire for the medicinal plant usage was completed by traditional practitioners. This information will be added to medicinal plants database held by HPMU.
 - Two-day training of VHCs, VHVs and TBAs on Acute Respiratory Infections and Diarrheal Diseases in Mahaxai and GMLT districts on 22-23 May 2007 and 24-25 May 2007 respectively
- Collaborated with Traditional Medicine Research Center (TMRC) and Agriculture Section/Nakai SRO for follow up and collection of sample of *Artemisia annua* for Artemisinin content analysis.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) has been analyzed and report writing is in progress
- Conducted health checks and survey in Sop Hia Village on 7-8 May 2007. This health checks marks the first collaborative activity between HPMU and IP. Blood and stool samples were collected by IP team for further analysis.
- NTPC and IP along with partners from MOH, Vietnam and Cambodia took part in the one day workshop in NTPC Office, Vientiane. The objective of the meeting was to determine areas of further studies that are outside the technical and financial reach of NTPC's HPMU
- A special meeting with Sop Hia village community was conducted to explain extra blood sample collection for IP virological studies and consent form read and explained before the head of the village signing it.
- Sop Hia health checks and other HPMU activities were covered for Public Health video production.
- Continue and expand monthly Maternal and Child Health clinics in four districts and prepare the family health files at the same time. So far HPMU have held 388 clinics in 75 villages
- Annual Implementation Plan Meetings were held in Khamkeut, Nakai, GMLT and Mahaxai Districts and Khammouane PHO
- Routine visits to the resettlement villages continued and population health monitored

Nakai Plateau resettlement***Infrastructure:***

- Topographic survey and mapping: The ongoing setting out of house and agricultural plots by Resettlement Office personnel is an on-going activity.
- Villages Layout: No further activity during the month.
- UXO search and clearance: The on-going contract for UXO community awareness and on-call roving response team is still proving successful. In May, 86 UXO items were destroyed. By the end of May the roving units have disposed of 2,096 items including 1,875 bomblets.
- Timber houses: Apart from Oudomsouk Nakai Reservoir PAPs, all the resettlement village house contracts have been signed. There has been a small increase in supply of sawn timber because of the four contracts signed in March with various sawmills and about 540 m3 was delivered in May. This has resulted with the first 3 VG1 signed contracts nearing completion. The sourcing of the unsecured sawn timber is an ongoing activity.
- Roads and tracks: There are three road construction contracts underway. The contracts for the four northern resettlement village access roads and tracks and Oudomsouk Urban Area access roads were completed. The two southern VG2 village contract is about 62 % complete. The contract for the Area 7 and Area 13 agricultural area access roads is about 21% complete. The contract for the roads in Areas 1 and 2 is about 12% complete.
- Irrigation: The construction of the irrigation area extension at the Pilot Village for Keng Gnao resettlers is nearly complete with some roadworks and the marking of pipeline routes outstanding. The yield testing of the bore holes at the pilot groundwater irrigation area at Sop On was completed and the pipeline designs requiring some minor modifications.
- Community Buildings: In April four contracts were signed for the construction of 36 community buildings in ten resettlement areas. All the Contractors are constructing their Camps and transporting construction materials.
- Domestic Water Supply and Sanitation: A total of 167 deep boreholes have been successfully completed out of 194 drilled since the beginning of the operations in December 2005. The total number of failures is now 27 for a global rate of about 13.92%. 155 are now equipped with hand pumps or electric pumps and fully operational.
- Electricity: The design of the resettlement village electrification systems is continuing. A contract was signed for the electrification of Areas 17, 18 and 19. The construction of 3 genset shelters is continuing.

Livelihood Plans:***Forestry:***

- Total volume timber delivery in May to contractors: 202.053m³
- VFA Board held on May 2007.

Agriculture / Livestock:

- Farmers continued to prepare their rice field in the drawdown areas
- Preparation of 0.66 ha field in 13 villages
- 3 new staffs recruited.

Fisheries:

Draft reservoir Fisheries Management Program report has been released to NTPC on 1st April.

Community Development:

In general, the overall progress of CD activities is quite good, which is geared towards potential off-farm income generating activities. Final census of most villages have been completed and yet 4 more to be on going and old Sop Hia village to be finalized.

All households impacted by the reservoir and below 530 have been relocated to a safe location. Except in old Sop Hia and Oudomsouk and will be done within end June 2007.

Socio-economic data are being collected by a team of 17 DWG staff trained (12 more). The data will be useful for both our SRO teams in Nakai, as well as others interested, especially for independent auditors. Our CD Team also collected monthly income-expenditure data of each household in each village to monitor their income derived from various sources and from our Project supports

Routine institutional development activities were also supported through DWG. Training and regular follow up with advices provided proved to be step by step strengthened the local institution in playing their role towards resettlement activities.

Gender issues were regularly monitored and recently a team of expatriate and local gender specialists came to monitor the progress with the Gender mainstreaming team set up in each unit. Report will be providing separately by the team later on.

Beside than rice and protein supports to all resettlers (as agreed by all parties concerned) who have been relocated and basic education support to teachers and children's food, CD is now concentrating to develop revolving fund / credit system in each village to facilitate the investment in off-farm activities proved to be beneficial to the resettlers as a source of income for their family economy. Now weaving, tailoring, wicker works are being supported, since the villagers have done them for quite some time and received some good incomes from these activities.

The villagers received quite a large sum of money from the Project for their labor inputs in houses construction, dismantling their old houses and Disturbance allowance. They were encouraged to put their money in the bank, which are very useful for them in off-farm investment. This will ensure the proper and effective use of their money gained.

Vulnerable households have been supported with additional basic needs and suitable incomes activities will be followed soon.

Grievance have been tackled with care and understanding, but CA entitlements should be the basis for decision by Grievance committee at various level. Summary of cases solved and yet to be solved is in below table.

Downstream Program:

- Sanitation awareness training continued in pilot villages, including 5 schools
- Procurement of sanitation facility materials continued for the pilot villages, with toilet construction progressing starting some villages
- Design of a mini-polder scheme in the lower Xe Bangfai region continued
- Fish catch monitoring continued.

Environment:

- Exportation certificate processing to ship specimens the fish and aquatic habitats baseline.
- Ongoing activities for the baseline wildlife survey, and wildlife management and monitoring plan.
- Ongoing Interim Human Elephant Conflict (HEC) monitoring.
- Submission and review of the Elephant Program Phase I Final Report. Finalization of contractual activities for Elephant Program Phase II.
- Commencement of dyke vegetation activities, and continued survey and construction activities, for the interim wetlands.

- Submission and review of the Environmental Education Syllabus. Commencement of education activities.
- Continued development of the wildlife rescue under the Transitional Strategy.
- Water quality sampling and analysis.

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

NTPC E&SD Staffing

Legend:

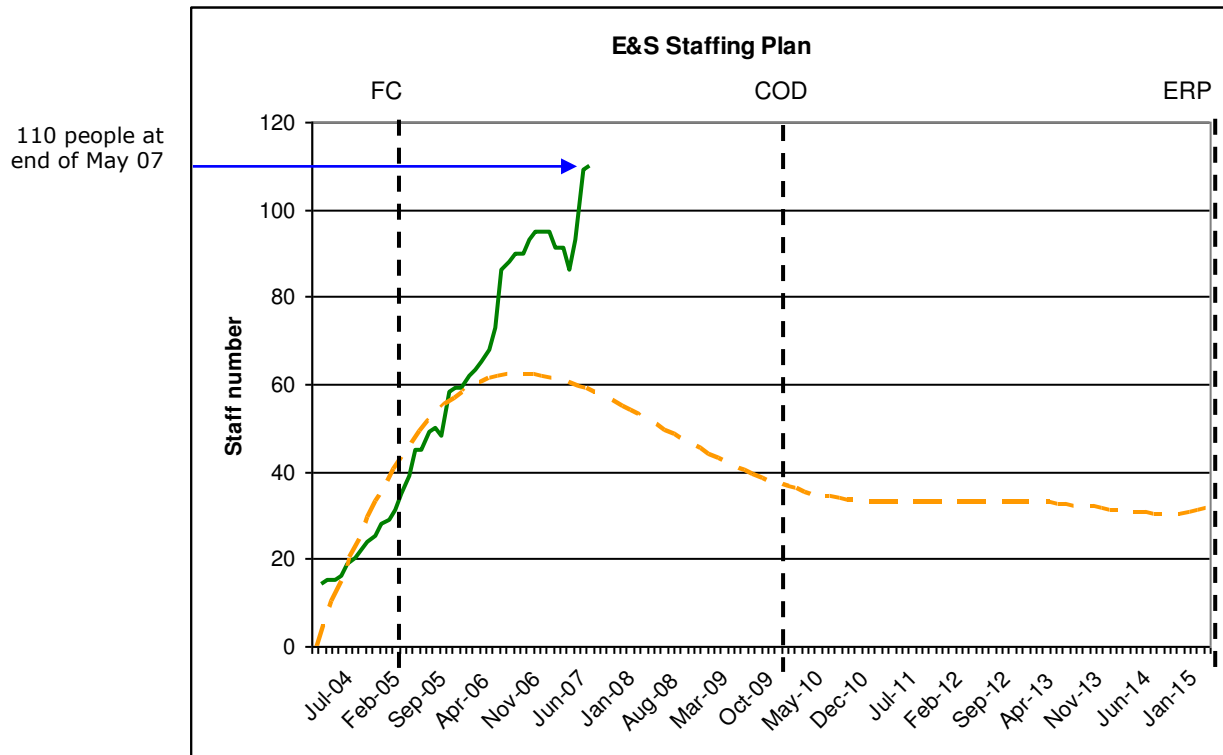
Scheduled staffing plan

Actual staff recruitment

FC = Financial Close

COD = Commercial Operation Date

ERP = End of Resettlement Period



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

Two local staffs retired during of this month.

Three new staff joint with E&S.

The Nakai Residential Complex in Oudomsouk is used by the NTPC E&S team
(complex of 54 rooms/studios/apartments and 6 villas).

EMU Staffing

NT 2 Project Committee responsible for Environment Management Unit has been changed via PM Decision 072 dated 11 January 2007

RMU and DWG Staffing

No change from previous report.

Partners

No change from previous report.

1.2 Unanticipated Project Impacts

No change from previous report.

1.3 Additional Plans and PIP updating

PIP / AIP

No change from previous report.

Additional Plans

No change from previous report.

1.4 Grievance procedure

No change from previous report.

1.5 Communication

No change from previous report.

1.6 Procurement

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

- Award contract for flood control / irrigation engineer consultancy services,
- Award contract for gender specialists / family finance management consultancy services,
- Award contract and kick off meeting for the electrification of resettlement villages within Areas 17, 18 and 19,
- Follow up of vehicles and motorbikes orders through IAPSO and frame agreement contract,
- Register social security for all individual consultants working for the Downstream program and proceed for a variation on their contract accordingly,
- Kick off meeting for the construction of access roads and tracks within Areas 1 and 2,
- Variation order for the construction of resettlement villages community buildings,
- Continue market research for the construction of machine drilled boreholes for domestic water supply,
- Update NTSEP quarterly IDA Financial Monitoring Report,
- Finalize document for advertisements of the results of previous procurements,
- Market research for Thai and Vietnamese contractors for timber houses in Oudomsouk and Community buildings bidding processes,
- Update the NTSEP Procurement Plan,
- Update the Master List for Quarter 3 and Quarter 4 2007,
- Start market research for UXO Clearance for the Project Lands program,
- Award contract and kick off meeting for consultancy services (pre-feasibility studies: irrigation, flood management),
- Procurement process of consultancy services (reservoir impoundment),
- Variation order follow up – medical equipment delivery.

Abbreviations used in this section:

IAPSO	Inter-Agency Procurement Services Office
IC	Selection of Individual Consultant
ICB	International Competitive Bidding
NA	Not Applicable
NCB	National Competitive Bidding
NO	No Objection Letter
NS	National Shopping
PSW	Procurement of Small Work
QCBS	Quality and Cost based Selection (of Consultants)
SSS	Sole Source Selection (of Individual Consultants)

Monitoring:

No change from previous report.

WMPA:

No change from previous report.

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

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

Movable PCR Plan

No special remarks for this reporting period.

PCR within Construction Areas Plan

No special remarks for this reporting period.

PCR within the Reservoir Plan

To date, IoCR has completed consultation for all resettlement villages and completed management measures for almost all VG1 and VG2 PCR sites.

No special remarks for this reporting period.

PCR along the Xe Bangfai Plan

The plan for PCR along the Xe Bangfai will be implemented in coordination with the Downstream Program. One historic site, five spirit sites and twelve temples are located on the banks. The temple sites were surveyed to prioritize monitoring effort and to identify any requirement for pre-operations management measures (relocation of infrastructure or bank protection).

No special remarks for this reporting period.

Chance Find PCR

No special remarks for this reporting period.

PCR Monitoring

On 28 April 2007, the monthly PCR monitoring was undertaken by the EMO. The following table presents the villages and their PCR included in the PCR monitoring.

Village	PCR ID	PCR Type	Issue
Gnommalat Tai	PCR/ADJ/52/12	Historic	No issue
	PCR/ADJ/52/13	Historic	No issue
	PCR/ADJ/52/14	Territorial Spirit	No issue
Nong Ping	PCR/ADJ/52/15	Spiritual Sites	No issue
	PCR/ADJ/52/16	Territorial Spirit	Request for a ceremony to appease the spirits for Transmission Line construction
	PCR/ADJ/52/17	Temple	No issue
Kenglek	PCR/ADJ/52/18	Spiritual Sites	No issue
	PCR/ADJ/52/19	Historic	No issue
	PCR/ADJ/52/20	Cemetery	No issue

IoCR will be requested to provide the necessary consultation and appeasement ceremonies.

2.1.2 Project Lands

Project Lands Status at end of May 2007

		RAPS	1	2	3	4	5
			Khamkheut / Quarry	Oudomsouk	Gnommalath / Mahaxai w/o roads & TL	roads 8 & 12	115& 500kV Transmission Lines
Infrastructures	Relocation of houses	Total number of houses to be rebuilt or relocated	90				~ 97
		Cumulative at end of the month	64				36
		Progress during the month	0				0
		comments	Remaining 26 relocations currently in temporary structures, corresponding permanent structures under construction - should be completed in July 2007				On time with the TL construction schedule, no issue
	Water supply Boreholes + shallow wells	Total number to be drilled		75			
		Cumulative at end of the month		19			
		Progress during the month		0			
		comments		remaining boreholes scheduled to be completed in August 2007			
	Compensations	impact below 10% : Final compensation (payment in cash)	Number of affected hh < 10%	326			639
			Cumulative HH compensated	291			324
			Done during the month	+ 13			0
			comments	Compensation(payments) are based on the value of land, which was to be provided by GoL. These values were given very late by GoL (dec 2006), and payments are now ongoing.			Identification of PAP is still ongoing, based on the designs provided
		impact above 10%	Transitional compensation	Number of affected hh > 10%	438		
				Interim compensation paid in 05	158		
				Interim compensation paid in 06	420		
				Interim compensation paid in 07	~ 410		
		livelihood restoration	number of hh entitled for livelihood restoration	~400			
			number of hh engaged in livelihood programs	323			
			comments	25 hh prefer cash compensation (discussed and agreed with ADB)			On RAPs 4 and 5, no hh is impacted more than 10%

Main events in May:

Baseline Studies & data management

The collection of baseline study data is complete. Efforts are ongoing to establish a comprehensive database for all Project Lands activities, separating all information into 7 datasets according to the sector within Project Lands. Database design and compilation of information is underway.

Meetings & Consultations

Coordination meetings with the DCWG and RMU continued during the month of May 2007.

Compensation

Payment of RMU invoice #5 is scheduled to start in early June.

2.1.2.1 Infrastructure

RAP 2 - Oudomsouk

A requisition was submitted and approved for the supply of concrete culverts to improve drainage. Delivery of materials is expected in early June.

A review of drainage around the spoil platform adjacent to Ban Phonphanpek was undertaken in response to comments received from the LTA, which found that the ground tends to drain away from Ban Phonphanpek, to the north. Approximately 50 m to the north of Phonphanpek, there is a natural drainage line, which tends to drain water to the east. No significant ponding of water (or potential) near Ban Phonphanpek has been noted.

RAP3 – Gnommalat

Construction of 20 replacement houses under C817 is approximately 70% complete. Additional work involving site clearance, 4 additional houses and one 6-room school has been arranged under Variation Order #1 for C817.

5 community boreholes have been installed with hand pumps. 12 new boreholes were drilled and will have hand pumps installed in June. 58 additional borehole locations have been identified with consensus from villages, DWG and RMU and will be installed as compensation for disrupted water supply caused by the construction activities near these villages during the coming months.

A review of drainage issues related to spoil deposits adjacent to the Ban Sangkeo School was undertaken in response to comments received from the LTA. Conclusions and actions are summarized as follows:

- Currently there are two wells located within the Ban Sangkeo compound
 - An open well that was observed to be dry during the dry season, located close to the toilet stalls, and adjacent to an area that experiences drainage problems due to the adjacent spoil deposits.
 - A borehole and hand pump (installed since the LTA visit, as part of a project implemented by the Ministry of Education). The borehole is installed at the back side of the school yard, at an elevation higher than that of the toilet stalls.

NTPC currently does not anticipate installing a well and hand pump at the opposite end of the school yard as it would then be located too far from the school, thereby reducing leading to reduced use.

- NTPC water supply and sanitation / hygiene specialists visited Ban Sangkeo during the week of 11 – 16 May, which resulted in the following actions / agreements:
 - NTPC will construct a soak pit for waste water. Current waste water is not disposed of properly.
 - Coordinate with District Nam Saat to chlorinate the well due to concern of well contamination from improper waste water disposal
 - Test water one month after chlorination
 - Assist district official with education / communication efforts with Ban Sangkeo residents.
- During LTA missions in 2006 it was noted that the spoil deposits behind the school were creating drainage problems, resulting in parts of the school yard (including toilets and the open well) to be flooded. In late 2006, the Head Contractor surveyed the area and then checked the channel area for UXO. In January 2007 the Head Contractor proceeded to excavate the required drainage channel. Since the above work was completed several deficiencies in the channel construction have been observed, namely the following:
 - The channel is not deep enough to fully drain the area behind the school. However, the channel did alleviate the problem of the toilets and the well flooding.

- Culverts in the channel were installed to maintain a local footpath but have been filled with soil.
- Portions of the channel have collapsed due to the initial steep side slopes constructed.

On 12 May 2007 the Head Contractor mobilized staff and equipment to correct the deficiencies noted above. Activities undertaken include:

- Excavating the channel to incorporate more appropriate side slopes
- Lowering the invert level of the channel
- Removing the culverts and foot path and installing a wooden bridge. The bridge is large enough for hand tractors to use.

RAP5 – Transmission Lines

A summary of all obstacles within the 115kV and 500kV transmission line corridor is presented in the following table:

Section Reference	Total number of Obstacles	Houses	Rice Storage	Huts	Rice mill	Other	School	Note
1	2	1	1	1				To be done in June 2007
2	9	0		9				
4	19	14	12	5	1	1		
5	3	1		1		2		Complete
8	3	0		3				To be completed during Aug-Sept 2007
11	10	8	2	5		3		
15	2	0				1	1	
16	1	1				1		
17	6	4	3	3				
18	3	1		3				
19	5	5	3	2				
Total	63	36	21	32	1	8	1	

2.1.2.2 Livelihood restoration

A Livelihood Restoration Team Leader was appointed on April 23. Livelihood restoration programs are undergoing revision to apply an emerging strategy under negotiation between NTPC and DWG, and will be further refined by the Project Lands team in the coming months. Activities will be increased to include substantially more PAPs in 2007 than in 2006; however there are concerns whether all PAPs expressing nearing completion, in collaboration with DWG, and will be adopted when deemed to be appropriate technology prior to commencing construction. Participating PAPs have (for the most part) been identified already and are in the process of finalizing the selection of sites for infrastructure construction. All sites shall be cleared of UXO prior to commencing construction, with many sites already cleared during April and May. 2006 participants will also be heavily involved with the initiation of 2007 participants during farmer-to-farmer training sessions and information exchange.

49 PAPs (RAP 3) affected more than 10% have requested for final cash payments. Each case is currently under review, assessing the self-administered livelihood restoration proposals submitted by each of these PAPs.

Specific activities implemented are as follows:

Specific activities implemented are as follows:

Rice Improvement: 282 PAPs have elected to be involved in 2007. 61 innovative PAPs and 2 DWG staff have started training sessions at the Thasano research station in Savannakhet. The wet season crop will apply the techniques studied with NTPC support for inputs such as seeds and fertilizers. These trainees applied their knowledge, and disseminate techniques, under supervision, to the less innovative farmers during farmer-to-farmer training sessions conducted in the village and in their fields before and during the cultivation season.

Fish and frog production: The Aquaculture Consultant contract started at the end of April. Activities for 2007 shall involve 2006 participants producing hatchlings for the project to purchase and provide to new participants. Activities include survey of possible construction of 67 new fishponds and working with 24 existing fishponds, and construction of 53 frog tanks. Income from fish rearing has started. The most successful family is estimated to have produced 1870kg of fish since the program has started, earning as much as 27,875,940 kip. Frog breeding will commence in early May.

Non-Timber Forest Products: The NTFP and Jatropha consultant commenced his contract in mid-March. Interactions with PAPs has commenced including selection of PAPs to participate, and sites to install seedling production nurseries. Some land clearing has commenced already and will continue until planting is completed around June. Production of seedlings for planting in the field during 2007 has begun at the community nursery adjacent to Gnommalat DAFO. The seedlings were moved to the Gnommalat horticulture nursery due to a lack of water in the district nursery. Seedling bag procurement faced some issues, resulting in a delay of producing additional seedlings to commence in early May. Production of Jatropha seed will not start until 2008; however markets are being sought already. One potential market is in Vientiane – a Korean / Lao joint venture which plans to produce bio-diesel – who have expressed interest in purchasing large quantities of Jatropha seed at 600 kip/kg.

Orchid cultivation: Orchid production requires additional materials and technical support to continue propagation for the 10 participating PAPs in Nakai. However, the consultant is not available to provide these inputs until May 2007. Marketing of orchids needs to be done strategically to avoid overexploitation of naturally grown (wild) orchids. A Vientiane buyer is interested in certifying that PAP producers are reproducing orchids for sale and not harvesting naturally grown orchids, before they will purchase any quantities.

Vocational training: No activity currently. Construction companies installing project lands infrastructure are encouraged to seek carpentry and masonry trainees to work for them.

Forage and Livestock: 5 PAPs involved in 2006 have begun to derive benefit from their forage plots now that construction of livestock pens is complete. These farmers are expressing a strong sense of commitment and are regularly undertaking evening stall feeding of livestock. Harvesting of forage is ongoing and dry-season re-growth has been impressive, mainly due to some unexpected rain during the month of March and April. The 2007 contract for forage and livestock development consultant commences at the beginning of April. The 26 participants for 2007 have started land clearing work and fencepost collection in anticipation of the planting of forages at the onset of the wet season. The 2006 participants' facilities will be useful for evolution of vision and exchange of information for 2007 participants. Evaluation is ongoing for the potential for installation of a community forage plot in compensation for lost community grazing land in DT15, Ban Phone Khaen and Ban Phathoung.

Pig raising: 54 new PAPs have declared interest in participating in pig production in 2007. Pig production consultant has commenced his contract in late April. One important initial task is to identify suitable locations for installing the pig pens. Pen design is to be adapted to be more appropriate to the emerging livelihood/compensation strategy. 2006 participants have been raising their pigs for about 3 months now and they have reached approximately 60 kg live-weight. Some participants have sold their pigs already, when feed sources became depleted. Several pigs fell ill and were sold before reaching full weight.

Mushroom cultivation: The 2007 mushroom production consultant contract commenced and 2007 participants' facilities site selection is completed. All 10 2006 participants are now harvesting between 3-6 kg per day sold at 15,000 – 20,000 kip/kg. One very active family has made income of around 4 million kip already. Participating PAPs have expressed a strong degree of enthusiasm with the mushroom program as the results of their participation are now being felt. 2 PAPs have already earned more income from the mushrooms than their loss of income due to project activities and could therefore be assessed as being better off than before. The challenge now is to provide technical and logistical but not financial support for Phase 1 PAPs to embark on their next batch of mushrooms independently.

Horticulture: PAPs participating in Mahaxai horticulture are saving the proceeds from vegetable sales for purchasing more inputs. In the coming months it is anticipated that more effort will be made to direct PAPs more strongly towards self-sufficiency. The upcoming issue will be if PAPs will remain interested in intense horticulture activities once the rice growing season starts or weather rice growing will take priority.

Replacement land: The 20 ha area behind RNT has been divided into 72 plots ranging in size between 2,000 to 2,500 m². All plots will be supplied with access lanes. The land development and orchard / garden production consultant started his contract on 27th March to work closely with

the 60 (so far participating) PAPs from 4 villages who have accepted a ~2500 m² parcel and will proceed to prepare the land for planting before the 2007 wet season. Negotiation to install perimeter barbed wire fencing is complete and fencepost and wire installation has commenced. The fencing will be erected around the perimeter of each of the three sections. PAP replacement land and owners' retained land sections are separated but the entire area will be fenced to exclude livestock. PAPs require some mechanical earthmoving and tillage to be implemented prior to commencing planting.

Irrigation options for PAPs receiving replacement land are under investigation and will be put in place before the 2007 – 2008 dry seasons.

Project Lands Photographs for the month of May 2007



Mushroom activities



UXO Clearance to support fish pond construction



Village meeting to provide cash compensation



Cash compensation payment





Sangkeo school drainage, before repair

Recently installed well in school yard
(well & pump were not provided by NTPC)

Improved drainage channel

Camp Followers

1. Hand Washing Facilities by Districts:

No	District	Total number of restaurants	Using tapped basin for washing hands	Coverage rate
1	Mahaxai	10	10	100%
2	Gnommalat	29	29	100% (Now only 29 restaurants - one moved out)
3	Nakai	20	19	95%
4	Khamkeut	22	15	68%
	Total	81	73	90%

2. Chlorination of Shallow Well Water by Districts:

No	District	Total number of restaurants	Chlorinating Water in Restaurants	Chlorinating Water in Households	Remarks
1	Mahaxai	10			Nam Papa system
2	Gnommalat	29	25	165	
3	Nakai	20	8	0	
4	Khamkeut	22			Nam Papa system
	Total	81	33	165	

Social Activities

Health Programs

2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during May 2007:

- GMLT DH still requires a number of small items to be completed as part of the construction
- Access to GMLT DH from the main road is in progress in collaboration with Project Lands.
- Land levelling around GMLT DH is urgently required and HPMU is consulting infrastructure for this work.
- Power supply to Naxok has been completed but Khedphit is still not connected because of slow progress at GMLT DHO
- Some furniture items have been delivered but 30% remains to be delivered
- Rehabilitation of MHX DHO is almost nearing completion
- Number of training courses held during the month:
 - Three-Day Training on Emergency Obstetric Care in Nakai, GMLT, MHX, Xe Bangfai, Nongbok, Hinboun and Thakhek Districts, Khammouane Province 2-26 May 2007.
 - One-day training on conducting health checks and survey in Sop Hia village on 6 May 2007
 - Three-Day training of traditional practitioners on the use of traditional medicine/plants in Nakai on 16-18 May 2007. A specially designed questionnaire for the medicinal plant usage was completed by traditional practitioners. This information will be added to medicinal plants database held by HPMU.
 - Two-day training of VHCs, VHVs and TBAs on Acute Respiratory Infections and Diarrheal Diseases in Mahaxai and GMLT districts on 22-23 May 2007 and 24-25 May 2007 respectively
- Collaborated with Traditional Medicine Research Center (TMRC) and Agriculture Section/Nakai SRO for follow up and collection of sample of *Artemisia annua* for Artemisinin content analysis.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) has been analyzed and report writing is in progress
- Conducted health checks and survey in Sop Hia Village on 7-8 May 2007. This health checks marks the first collaborative activity between HPMU and IP. Blood and stool samples were collected by IP team for further analysis.
- NTPC and IP along with partners from MOH, Vietnam and Cambodia took part in the one day workshop in NTPC Office, Vientiane. The objective of the meeting was to determine areas of further studies that are outside the technical and financial reach of NTPC's HPMU
- A special meeting with Sop Hia village community was conducted to explain extra blood sample collection for IP virological studies and consent form read and explained before the head of the village signing it.
- Sop Hia health checks and other HPMU activities were covered for Public Health video production.
- Continue and expand monthly Maternal and Child Health clinics in four districts and prepare the family health files at the same time. So far HPMU have held 388 clinics in 75 villages
- Annual Implementation Plan Meetings were held in Khamkeut, Nakai, GMLT and Mahaxai Districts and Khammouane PHO
- Routine visits to the resettlement villages continued and population health monitored

Abbreviations used in this section:

DCD	District Community Development
DH	District Hospital
DHO	District Health Office
HC	Health Center
HPMD	Health Properties Management Division
HPMU	Health Program Management Unit
ICHC	Integrated Community Health Center
IFMT	Institut Francophone pour la Medecine Tropicale
IP	Institut Pasteur
MCH	Maternal and Child Health
MOH	Ministry of Health
NCCAB	National Committee for Control of AIDS Bureau
ORPP	Outbreak Response Preparedness Plan
PH	Provincial Hospital
PHO	Provincial Health Office
TMRC	Traditional Medicine Research Center
UNPFA	United Nations Population Fund
VHC	Village Health Committee

VHV Village Health Volunteers
WHO World Health Organization

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
Infrastructures, Equipment and Vehicles	Refurbishment and construction of buildings	Refurbishment of Khammouane Province Hospital, 4 District Hospitals and health centers. Construction of 2 new HCs	Water pumps received	Work completed at 100%
	Provision of medical equipment	X ray machines, biochemistry and lab. Equipment, hematology unit, etc....	Training on the use of medical equipment provided to each health facility	100%
	Provision of vehicles	4 ambulances 12 motorbikes 4 4WD pick-ups	Additional equipment for all 4WD pick-ups and ambulances are also provided	100%
	Non-medical equipment	IT equipment, fridges, hospital furniture's, bed nets,	-	85%
Public Health Program, including Awareness Program	Supplies - Drugs, kits, forms and Manuals	Provision of drug revolving funds in KMN provincial hospital, 4 District hospitals, 6 HCs and 68 villages	Ongoing for villages	60%
		Support of office and operating costs	-	Provided every six months
		Provision of training material, forms, etc.	-	75% Ongoing, according to needs
	health Education and Awareness Programs	STIs including HIV/AIDS Regular health education program, special events	Peer education training program for High School Students Health education sessions Feedback meetings on the survey results in Nakai	190 sessions 34 587 participants
		- Relocation of medicinal plants - Training of traditional healers	Logistic problem with Traditional Medicine Research Center (TMRC) The Provincial Food and Drug Officer conducted training of the traditional practitioners. A specially designed questionnaire for the medicinal plant usage was completed by traditional practitioners. This information will be added to medicinal plants database held by HPMU.	1 session 16 participants
Strengthening Human resources in Public Health	Supervision and Monitoring	Provision of incentives		60% ongoing
		Field visits for supervision and support	Resettlement : bi-weekly visits	ongoing
		Integrated outreach program (health education and awareness on specific health topics)	Comprehensive Maternal and Child Health Monthly Clinics will be replacing this	368 sessions 20 209 participants
		Strengthening health services delivery in health centers	Ongoing	Ongoing
		Strengthening health services delivery in villages	Ongoing	388 Monthly MCH Clinics in 75 villages
	Training	Community level (villages)	Ongoing	48 sessions 992 participants
		Health Centers (village – District and Provincial levels)		25 sessions 318 participants

		Long term		6 sessions 17 participants
		Study tour	As and when required	90% All district hospital and health center staff covered
		Workshops on psychosocial problems		Under preparation
		On-the-job training	Practical training on surgery and biochemistry for KK District hospital Ongoing	29 sessions 302 participants
	Meetings	Create Outbreak Detection and Response Preparedness Unit		100% - includes Avian influenza
		Meetings at provincial and district levels	Ongoing AIP meetings were held in four districts and KMN PHO	110 meetings 1 751 participants
		Quarterly meeting at HC (VHVs, HCs)		13 meetings 401 participants
		Health education materials and activities - design and production		ongoing
		Develop the procedures for the referral system		ongoing
		Zonal Health Committee Meeting (4 x per year for each ICHC; and for DH)	Meetings in 4 districts (same as quarterly meeting at HC)	
	Public Health Monitoring and Surveillance	Routine data collection/HIS		ongoing
		Outbreak Response Preparedness	Report completed	100%
		Outbreak Response Operational	As and when required	10%
		Scientific support	As and when required	
		Existing data analysis 2004		completed
		Midterm survey		To be carried out in 2008-9
		Special surveys (initial health checks of resettled households on Nakai)	Data entry, cleaning and analysis – ongoing First collaborative activity between HPMU and IP. Blood and stool samples were collected by IP team for further analysis. NTPC and IP along with partners from MOH, Vietnam and Cambodia took part in the one day workshop in NTPC Office, Vientiane. The objective of the meeting was to determine areas of further studies that are outside the technical and financial reach of NTPC's HPMU	Complete in Village Group I: Nong Boua Sop On Boua Ma Phonsavang Sop Ma Khone Khen Done Ka Oy Sop Hia
		Monthly MCH clinics	Ongoing	388 Monthly MCH clinics in 75 villages
	Equity fund	Payment of treatment for entitled PAPs	As and when required	26 individual referred to TKK hospital and financially supported



Village meeting in Sop Hia Village prior to Health Checks and Survey conducted on 2 May 2007



Health Checks and Survey in Sop Hia on 7-8 May 2007



Training on Diarrheal and Respiratory Infections for Village Health Volunteers in Mahaxai District



Supervision visit to Kengdaeng Health Center on 28 May 2007



NTPC and IP along with partners from MOH, Vietnam and Cambodia took part in the one day workshop in NTPC Office, Vientiane on 12 May 2007



Annual Meeting at Khammouane Provincial Health Office on 31 May 2007

Social Activities

Nakai Plateau Resettlement

2.3 Nakai Plateau Resettlement

2.3.1 General

Dry weather continued throughout May, which allowed continued consolidation of the villages in transition – the eight villages that were established prior to and during the previous wet season, as well as good progress in infrastructure development in newly resettled villages. Access roads to all the villages were maintained in good condition for work to proceed smoothly

Resettlement access roads and intra-village roads are in good condition for the start of the 2007 wet season. However, it is expected that continued maintenance by road contractors will be required throughout the wet season.

Independent consultations were conducted in Sop Hia, for the Ahoe (Vietic) group, in order to clearly ascertain their preferred choices for resettlement and to satisfy stakeholders that these preferences are clearly understood and expressed. The consultation debriefing with the IFIs and POE was held in Vientiane at the end of May 2007. It was the clearly expressed preference of the villagers that 13 households wish to remain in their current location and to work together with the Resettlement Office to develop an appropriate package of infrastructure and livelihood development. This is now under development. The 13 households will be relocated up-hill during June 2007.

Construction of permanent housing is nearing completion on the three southern villages of Sop On, Phonsavang and Boua Ma. Most of these houses will be completed and ready for occupancy before the onset of the wet season, or shortly thereafter. Construction of frames is progressing well in all other villages. Contractors have now mobilized to all villages, with the exception of Oudomsouk, which is expected to be ready to award at the start of the 2007/2008 dry season.



New Phonsavang.

In preparation for the 2007 wet season, potentially affected households were identified in the villages not yet resettled – i.e. Thalang, Nakai Tai, Nakai Neua and Oudomsouk. In the case of Thalang, 20 households elected to move to their new site (New Thalang, which is only about 1 km from the old village) rather than be relocated uphill. These 20 households are now occupying their permanent housing plots on their new sites.



Temporary houses at Thalang, with plots cleared ready for construction of permanent houses.

Rice and protein distribution programmes as described in previous reports is continuing, as are bi-weekly health checks.

The second LSMS (Living Standard Measurement Survey) is scheduled to be conducted in June 2007. This will provide the second batch of 6 monthly household data to be used by the Independent Monitoring Agency. The database for hosting the data is under development, with data entry expected to commence in July 2007.

Transitional Livelihoods:

Currently 100% of agricultural plots have been cleared at new Sop On, 100% at new Phonsavang, and more than 90% at new Boua Ma. All the agricultural plots of the 8 Keng Yao families that moved to the Pilot Village have been cleared. These plots were planted with upland rice during the previous wet season; however the irrigation system extension will be completed during the coming months so that these villagers will soon be fully integrated within the pilot village.

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 village construction is provided to all villages, in addition to food support in the case of transition resettlers.

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

2.3.2 Infrastructure

A summary of the progress on infrastructures is given in the table below:

		Sub Total for villages moved in 2006	Sub Total for villages moved in 2007	Sub Total for villages moved in 2008	TOTAL
Resettlement - summary	Total hh to be resettled	654	477	171	1302
	Houses to be constructed	674	487	171	1332
	Resettled to date (all infrastructures complete)	38	0	0	38
	Resettled to date (transitional)	662	120	0	782
Infrastructures	ha to be cleared (housing plots)	186.1	122.26	40	348
	ha UXO cleared	186.1	122.26	40	348
	ha logged	186.1	122.26	40	348
	ha de-stumped	186.1	62.16	40	288
	ha cleared	184.42	62.16	40	287
	% access road	94%	52%	50%	56%
	% village road	79%	19%	30%	33%
Wood - Timber	m3 Total required (frames,floors,walls)	8433	6164	2177	16774
	m3 required frames	4950	3587	1271	9808
	m3 required floors ONLY PLANKS 2.5 x 15, 2.5 x 20 and 3 x 20	1672	1211	428	3311
	m3 required walls ONLY WALL PLANKS 1.5 x 20	1812	1366	478	3655
	m3 delivered Frame	2492	0	0	2492
	m3 delivered Floors	835	0	0	835
	m3 delivered Walls	416	0	0	416
	m3 delivered total	3743	0	0	3743
Houses	transitional houses built	604	129	0	733
	transitional latrines	174	30	0	204
	Notice to proceed given (date)	0	0	0	0
	Notice to proceed given (number of houses)	674	487	0	1161
	concrete pillars erected (number of houses)	492	19	0	511
	frames and roofs completed (number of houses)	321	1	0	322
	permanent houses completed (both with or without connection to the electricity grid)	125	1	0	126
	permanent latrines completed and operational	282	1	0	283
	rainwater collector systems (1/house) completed	217	1	0	218
	permenenent houses completed (ie. with electricity connection)	38	0	0	38
domestic water	number of tubewells to drill and equip	108	74	17	199
	Successful wells drilled	99	12	0	111
	pumps installed	98	12	0	110

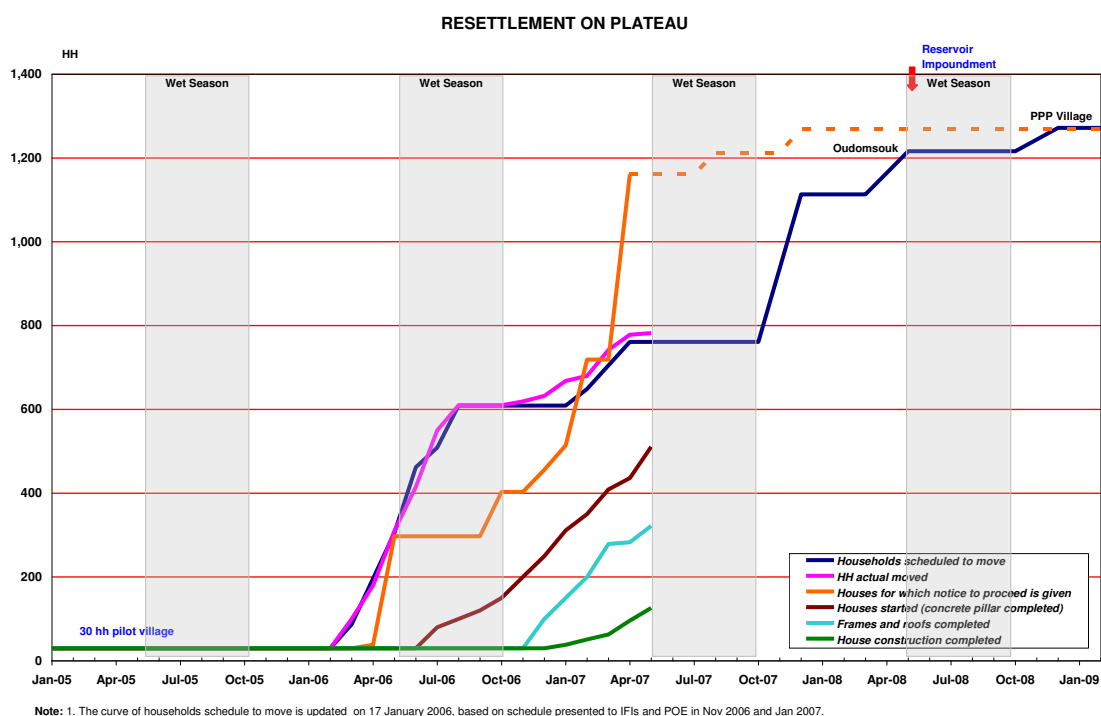


Figure: progress of relocation and house construction

2.3.2.1 Topographic survey and mapping

Apart from the continuing activity of setting out of boundary markers for the resettlers' house and agricultural plots, there were no topographic survey and mapping activities during the month

2.3.2.2 Finalization of village location – Village and agricultural layouts

No further activity during the month.

2.3.2.3 UXO search and clearance

There is an ongoing contract for "Resettlement Area UXO Community Awareness and Emergency Response Teams." The community awareness activities continue to progress smoothly and the system of villagers preparing response forms and placing them in "drop boxes" provided continues to work.

The response team continued to visit villages to check on reported suspect items. May was a busy month with 86 items destroyed in 6 village areas including bomblets, grenades, mortars and rockets. To the end of 2007, 2,090 UXO items, including 1,875 bomblets, have been found and destroyed by the response team.

2.3.2.4 Roads and drainage

Two road contracts were completed during May and there are three ongoing road construction contracts.

Oudomsouk Urban Area B Access Roads

The contract for the construction of access roads in Oudomsouk Urban Area B was completed.

Northern Access roads to and within villages, Contract C701:

Contract C701 for 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), Sop Phene (area 11) and Thalang (area 13) housing area was also completed.

Northern Access roads to and within villages, Contract C979:

Contract C979 for the construction of the access roads to and within Area 7 and for the Area 13 agricultural area. At Area 13 the contractor has cleared all the road and track alignments and completed the construction of a large cross-drainage culvert. At Area 7 all the roads and tracks have been cleared and most of the culverts have been installed. Some progress has been made with embankment construction. It is estimated the works are about 21% complete.

Access Roads and Tracks with Resettlement Areas 1 and 2 for Nakai Neua and Nakai Ta, Contract C999:

Contract C999 was signed for the construction of the access roads and tracks for Nakai Tai and Nakai Neua. Although, for various reasons, this contract was signed rather close to the beginning of the wet season, house construction contractors at the two resettlement areas can work, as previously hired earthmoving equipment has made access and cleared the two housing areas. It is estimated that the works are about 12% completed.

Southern VG2 Access roads to and within villages:

The contract for the construction of access roads to and within the new villages of Done (area 21) and Khone Khen (area 22) is ongoing. Progress improved slightly from the previous slow progress, but a bulldozer remains broken down and track clearing work is being undertaken by an excavator. At Ban Done the pavement on most of the village roads is complete, but agricultural track progress has not progressed. It is a similar situation at Khone Khen. It is estimated that Ban Done is about 72% complete, Khone Khen 62% complete and the total contract works are about 62% complete.

2.3.2.5 House Construction

Timber house construction also included the construction of toilets and bathrooms and a rainwater collection tank. Construction is proceeding on all six contracts for the VG1 resettlers.

Progress with the contracts is as follows:

C604, Area 17 for Bouama, 75 houses (74 for resettlers), Area 16 for Keng Gnao, 13 houses: 8 houses for Keng Gnao resettlers at Area 16 are complete and the other 5 are nearly complete. At Bouama there are 41 houses complete apart from electricity connection and the frames and roofs completed for the remaining houses. The availability of wall planks to finish off the works has improved during the month and it is estimated that about 96% of the required timber has been delivered to the Contractor.

C605: Area 18 for Phonsavang, 42 houses (41 for resettlers) 18 houses are complete apart from electricity connection and the frames and roofs completed for 24 of the remaining houses. It is estimated that about 96% of the required timber has been delivered to the Contractor.

C606: Area 19 for Sop On, 139 houses (134 for resettlers). 21 houses are complete apart from electricity connection and 105 houses are substantially complete, that is roofs are completed. It is estimated that about 74% of the required timber has been delivered to the Contractor.

C607: total 106 houses, Area 8a for Sop Hia first group, 40 houses (39 for resettlers) and Sop Ma 69 houses (67 for resettlers) The works have progressed relatively well with frames and roofs completed at 25 houses at Area 8a and 31 houses at Area 8. It is estimated that about 41% of the required timber has been delivered to the Contractor.

C608: Area 9 for Nong Boua Kham, contract 61 houses (57 for resettlers): Foundation and concrete column works are continuing and completed at 18 houses. No timber works are completed.

C609: Area 11 for Sop Phene, contract 58 houses (57 for resettlers): Foundation and concrete column work is continuing and completed on 46 houses. The Contractor is now being supplied with timber and it is estimated that about 14% of the required volume has been delivered.

For the VG2 villages, seven contracts were signed in February and one signed in March. The total number of VG2 houses to be constructed is now 647 and the total value of the contracts is nearly USD 2.8 million, not including sawn timber. Notice to proceed has been given to all the Contractors. Progress generally is minimal. The contracts are as follows:

C803: Area 21 for Ban Done, Hamlet No. 1, 75 houses: Some progress with concrete foundations and columns. Small volume of sawn timber delivered.

C804: Area 21 for Ban Done, Hamlet No. 2, 78 houses: Some progress with concrete foundations and columns. Small volume of sawn timber delivered.

C805: Area 22 for Khone Khen: Some progress with concrete foundations and columns and 19 houses completed. About 7% of sawn timber delivered

C806: Area 2 for Nakai Tai, Hamlet No. 1, 102 houses: Notice to proceed given and works will start 2 June.

C807: Area 2 for Nakai Tai, Hamlet No. 2, 102 houses: Notice to proceed given and works will start 2 June.

C808: Area 1 for Nakai Neua, 97 houses: Notice to proceed given and works will start 2 June.

C809: Area 13 for Thalang, 84 houses: Notice to proceed given and Contractor is mobilizing.

C101: Area 7 for Sop Hia and Nam Nian second group, 59 houses (58 for resettlers: Some progress with concrete foundations and columns. Works completed on one house which the Contractor is supplying timber.

The following contracts have been signed for the delivery of sawn construction wood:

- C1046 with a Savannakhet based sawmill for 503 m3 at market price.
- C1015 a Nakai Plateau sawmill for 1,800 m3 from salvage logging logs.
- C1016 a Nakai Plateau sawmill for 400 m3 from salvage logging logs.
- C1017 with NPVFA for 800 m3 from salvage logging logs.

The NPVFA are also continuing to provide sawn timber from resettlement area logs. There has been a minor increase in supply in May, and to the end of May about 3,743 m3 have been delivered, about 22% of the total requirement.

Boua Ma. House construction progressing well, as is agricultural land clearing and fence building.

Uxo awareness training for project

2.3.2.6 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, four seed processing and agricultural storage facilities and four organic fertilizer facilities located at various villages. The sizes of most of the buildings will vary according to village size.

The following Contracts for the construction of 36 community buildings were signed in April:

C910: for the following community buildings:

Area 16, Nong Boua	Nursery School and Roofed Market
Area 17, Bouama	Primary and Nursery School, Meeting Hall and Village Office and Market
Area 18, Phonsavang	Primary and Nursery School, Meeting Hall and Village Office and Market
Area 19, Sop On	Primary and Nursery School, Meeting Hall and Village Office, Market and Health Center

C911 for the following:

Area 21, Done and Area 22, Khone Khen	Primary and Nursery Schools only
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C912 for:

Area 8, Sop Ma and Area 8A, Sop Hia	Primary and Nursery Schools, Meeting Halls and Markets
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C913 for:

Area 9, Nong Boua Kham and Area 11, Sop Phene	Primary and Nursery Schools, Meeting Halls, Markets and a Health Center at Area 9
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Progress with the 4 contracts is similar, that is, the Contractors have mobilized and are constructing the on-site facilities and transporting construction materials to the Nakai Plateau.

2.3.2.7 Domestic Water Supply and Sanitation

Boreholes with hand pumps:

At the end of this reporting period, there is an actual total of 167 deep boreholes successfully completed out of 194 drilled since the beginning of the operations in December 2005. The total number of failures is now 27 for a global rate of about 13.92% 155 of these successful boreholes are now equipped with hand pumps or electric pumps and satisfactorily operational.

The objectives set under the contract C675 have all been successfully reached and therefore this contract has been closed on the date of 24 May 2007, exactly 1 year after its signature.

The new contract C1012 to cover, as phase 2 of implementation, the remaining VG2b, VG3 and VG4 as well as to complete Project Lands needs in Gnommalat is now in effect.

As usual, the recapitulative tables showing the actual status of the entire programme implementation as well as the tentative schedule till December 2007 are shown on the following pages.

3- Project lands												
	Oudomsouk May - Area A - SD12B	10	10	0								
	Oudomsouk Primary school - SD12B	1	1	0								
	Oudomsouk old village - SD12B	5	5	0								
	Pon Pan Pek intake PAPs	5	5	0								
	NRC (Nakai) (total 3)	1	1	0								
GML	New 8 Houses (GML)	1	1	0								
GML	Gnommalath horticulture demonstration center	1	1	0								
GML	Gnommalath Tay	12	2	10		2			6		2	
GML	Gnommalath Neua	16	1	15		1			4	7	3	
GML	Ban Lao NaaNgam	8	5	3							3	
GML	Ban Phonlathkhuey	5	1	4		2			2			
GML	Ban Tongmang	3	3	0								
GML	Ban Sangkeo	8	6	2			2					
GML	Ban Nongseng	4	1	3				1	2			
GML	Ban Thad	3	0	3			2	1				
GML	Ban Kobung	3	0	3			1	2				
GML	Ban Koud Pha Dang	2	0	2				2				
GML	Livelihood compensation Mr. Khen (GML Tay)	1	1	0								
Total 3 Project lands		89	44	45	0	5	5	6	14	7	8	0
GRAND TOTAL Domestic WS		293	160	133	0	19	20	20	20	20	17	17
4- Pilot Irrigation scheme												
19	Ban Sop On - Agriculture plots block No 3	6	6	0								
9	Nong Boua Kham CCM	1	1	0								
1	Nakai Neua FTC	1	0	1		1						
Total 4 Irrigation schemes		8	7	1	0	1	0	0	0	0	0	0
GRAND TOTAL incl.irrigation		301	167	134	0	20	20	20	20	20	17	17

Update 31.05.2007

2.3.2.8 Irrigation Systems

The construction of the extension area to the Pilot Village irrigation scheme for the resettlers from Ban Keng Gnao is still not complete. The pipeline water conveyance and distribution system is now complete apart from the marking of the route of the pipelines with concrete posts. There are also some outstanding roadworks.

There was no activity with the preparation of agricultural plot layouts. This work is now complete apart from minor adjustments as required if some problems are found with the existing layouts.

For the pilot irrigation area at Sop On (area 19), using ground water for irrigation, the drilling and development of the boreholes is nearly complete. The bore hole yield tests were completed and some minor design revisions were required. The Agriculture Section have requested some changes to the design to the method of water distribution within the agricultural plots.

2.3.2.9 Electricity

Contract C991 was signed for the electrification of Resettlement Areas 17 (Bouama), 18 (Phonsavang) and 19 (Sop On).

It has been decided to extend the temporary electricity transmission line from the NPVFA along the southern temporary access road to the spur to Area 17 for Ban Bouama. Then the permanent transmission line to Ban Bouama will be installed, as will the step-down transformer. Then there will be no need for the genset in this village. A design and estimate for the works is under preparation in conjunction with the Khammouane Branch of Electricity Construction and Installation (ECI). If the cost estimate is reasonable, then a contract will be signed in June.

The works in Contract C1019 for the construction of shelters for the generators to be installed at Resettlement Areas 17, 18 and 19 is proceeding. The shelter for Area 17 will now be built at the Nakai Resettlement and District Governor's Office. The genset supplied for Ban Bouama will now be installed here so that there are no power distributions (particular with regard to the flood early warning system) during the wet season.

2.3.3 Livelihood

The organization of livelihood overhead management and coordination will be set up soon.

Summary table of Livelihood activities:

Nakai resettlement

Status at end of May 2007

		Sub Total for villages moved in 2006	Sub Total for villages moved in 2007	Sub Total for villages moved in 2008	TOTAL
Agriculture	Target for training (hh/day)	3924	2862	0	6786
	Training delivered - total	767	330	0	1097
	Target for Mushroom production (10 mushroom producers per village trained and supported)	90	50	0	140
	Mushroom producers	75	0	0	75
	Target for fruit trees planted (30 seedling per hh)	19620	14310	0	33930
	Fruit trees planted	1764	0	0	1764
Permanent agriculture land : field of 0.66 ha	Size of permanent agriculture land : field of 0.66 ha (ha)	432	315	0.0	746
	Ha UXO cleared	432	315	0.0	746
	Ha prepared ready to cultivate (following Ag/liv progr)	340	171	0.0	511
	Total fences (wood + living fences) surrounding each field of 0.66 ha : target (m)	156960	114480	0	271440
	Total wood fences (lm installed)...	65280	36720	0	102000
	... including living fences (lm installed)	0	480	0	480
	ha equiped for irrigation	28	0	0	28
	Target for cultivation (ha)	144	105	0.0	249
	Ha cultivated	0	0	0.0	0
	Target for coverplant (fallow improved/pasture in ha)	288	210	0.0	498
	Ha with cover plants (fallow improved/pasture)	18	8	0.0	26.08
Additional permanent agriculture land : field of maximum 3 ha per hh	Size of additional permanent agriculture land : field of maximum 3 ha (ha)	1799	1012	0	2811
	Land mapped	1473	0	0	1473
	Land allocated per hh	0	0	0	0
	Ha prepared ready to cultivate (following Ag/liv progr)	0	0	0	0
	Fences (wood + living fences) surrounding each field of 3 ha : target	346620	252810	0	599430
	Total wood fences (m installed)...	0	0	0	0
	... including living fences (m installed)	0	0	0	0
	Target for cultivation (ha)	600	337	0.0	937
	Ha cultivated	0	0	0	0
	Target for coverplant (fallow improved/pasture in ha)	1199	675	0.0	1874
	Ha with cover plants (fallow improved/pasture)	0	0	0	0
Common pasture under the forest (property of VFA)	Ha to be sowed in pasture (maximum 5 ha per hh)	2863	1193	0	4055
	Land mapped	0	0	0	0
	Land allocated per village	0	0	0	0
	ha prepared (following Ag/liv progr)	0	0	0	0
	Ha sowed in pasture	0	0	0	0
Draw down (seasonal land for cultivation or/and pasture)	Target seasonal land for cultivation or pasture (ha)	1428	742	0	2170
	Ha mapped	1543	724	0	2267
	Ha allocated per village	925	434	0	1359.6
	Ha prepared	0	0	0	0
	Ha sowed in crop	0	0	0	0
	Ha sowed in pasture	0	0	0	0
VFA	charcoal kilns	22	0	0	22
	NTPC planting/growing (none / ongoing)	45	0	0	45
	forest replanting (ha)- enrichment planting	32	0	0	32
	VFA quarterly Board meeting (since Oct 2006)	-	-	-	3
	VFA staff training (target)(man.day)	0	0	0	0
	VFA staff trained (man.day)	0	0	0	0
	tractors	0	0	0	0
	motorbikes	0	0	0	0
	chainsaws	0	0	0	0
	safety equipments	0	0	0	0
	cars	0	0	0	0
	sawmill completion progress (ongoing / completed)	-	-	-	100%
	number of furnitures produced	0	0	0	0

Livestock	Target inventoried animal population in %	100%	100%	0%	0%
	Animal inventoried (%)	100%	80%	0%	81%
	Target registered large ruminants (%)	100%	100%	100%	100%
	Large ruminant registered (%)	63%	62%	0%	55%
	Target vaccinated population (%)	100%	100%	0%	88%
	Vaccinated large ruminants (%)	76%	45%	0	57%
	Vaccinated poultry (%)	78%	37%	0	55%
	Vaccinated pig (%)	57%	33%	0	42%
	Target for shed (nb)	1308	954	0	2262
	Number of sheds for large ruminants	20	0	0	20
	Number of sheds for poultry	273	0	0	273
	Number of sheds for pig	120	0	0	120
	Target for training about breeding per hh (hh/day)	5232	3816	0	9048
	Training about breeding for hh	0	0	0	0
	Target for VVV training (VVV/day)	783	435	0	1218
	including technical training for VVV delivered - total (15 days per VVV)	0	0	0	0
	including methodological training for VVV delivered - total (72 days per VVV)	0	0	0	0
Fisheries	Target for meeting about health animal sensitization for breeders (breeders/day)	54	30	0	84
	Meeting about health animal sensitization for breeders	0	0	0	0
	target staff training	0	0	0	0
	staff training	0	0	0	0
	target resettlers training	0	0	0	0
	training of resettlers	0	0	0	0
	fishing groups to be formed	0	0	0	0
	fishing groups formed	0	0	0	0
	RFA Thalang office	0	0	0	0
	mechanical workshop	0	0	0	0
	jetties	0	0	0	0
	market	0	0	0	0
	boats required	0	0	0	0
	date	0	0	0	0
	boats built/provided	0	0	0	0
	landing sites	0	0	0	0
	fishing gears	0	0	0	0
CD	target staff training (2 people per village, trained every 3 months) - number of training sessions	0	0	0	0
	Training of CD on concept development (attendant)	16	1	0	17
	Training of CD on Management (attendant)	16	1	0	17
	target VRC training (5 people per village, trained every 3 months) - number of training sessions	0	0	0	0
	training of VRC	62	14	0	76
	VRC meetings target	111	50	0	161
	VRC meetings held	52	38	0	90
	consultation process for relocation (%)	9	1	0	10
	Consultation (Site selection, village lay out, house & farm plot)	0%	0%	0	0
	consultation for village relocation activity planning (%)	0%	0%	0	0
	final census prior to relocation (number of persons)	2824	1949	0	4773
	current number of persons	2984	1965	0	4949
	current number of hh	613	416	0	1029
	family registration books (number issued)	406	384	0	790
	off-farm activities (number of families engaged in OFA)	90	4	0	94
	number of vulnerable hh	55	0	0	55
	number of vulnerable hh getting additional support	47	0	0	47
	number of disturb. Allowances paid	0	0	0	0
	Food security - kg of rice distributed	509177	12127.6	0	521304.6
	education material (% of children equiped for the current year)	0%	0%	0	0
grievance process	saving and credit (1 comitee per village)	0	0	0	0
	gender workshops - to be precised	0	0	0	0
	LSMS - number of survey carried out (2 / year - 1st in Aug 2006)	91	108	0	199
	grievance total	67	1	1	69
	new grievance for this month	3	1	1	5
	grievances closed total	63	0	0	63
	grievance closed during the month	46	0	0	46
	total grievances still open	0	0	1	0

Communication

No change from previous report.

Staffing

No change from previous report.

Institutional strengthening

No change from previous report.

Land allocation

No change from previous report.

2.3.3.1 Nakai Plateau Forestry Development Program

2.3.3.1.1 Strengthening VFA

- SMB Board meeting was opened in 26 April 2007 in VFA Office Nakai
- VFA staffs meeting in VFA Office for reorganizing VFA new Organization

2.3.3.1.2 Wood processing installation

No change from previous report

2.3.3.1.3 Logging

Inventory for logging:

No change from previous report

Log Cutting activities

No change from previous report

Log Transportation activities

<i>Description</i>	<i>Location</i>	<i>No of Logs</i>	<i>Volume(m³)</i>
Transportation to 1 st log yard			
Measuring logs in 1 st log Yard (diameter, length and grading)			
Transport logs from Lok A Yard to 2 nd landing log yard Houay Malai	Lok A-Sawmill 1		2,016
From Lok D to Houay Malai	Lok Bto Sawmill 2		345
	Lok A,B to 2 nd landing Houay Malai, Houay Yen		2,192
Measuring Log volume in 2 nd Landing			
Transport to VFA Sawmill	Lok B to VFA Sawmill		
Cross cutting in sawmill	VFA Sawmill		
			4,553

Additional logs from salvage Logging

No change from previous report

Sawn timber activities:

No change from previous report

<i>Description</i>	<i>Location</i>	<i>No of Logs</i>	<i>Volume(m³)</i>
<u>Transport sawn timber from VFA sawmills to Infrastructure storage</u>			
<u>Contract signed with different contractors</u>			
<u>Stumps cutting for furniture manufacturing</u>	Resettlement Area		

2.3.3.1.4 Sawn timber

The provision of timber to the supply of wood for NT2 resettlement housing construction for 3 villages Ban Phonsavang, Ban Sop On, Ban Bouama as mentioned below:

		<i>Log from various sawmill</i>	<i>Receive Sawn timber(m³) from sawmill</i>	<i>Delivery (m³) to contractors</i>	<i>Remained in VFA Storage (m³)</i>
1	Sawmill Lak 20				
2	Sawmill Nakai				
3	Sawmill Xio				
4	VFA Sawmill		165.301		
5	Changed				
	Total		165.301		
1	Total all contractor				
2					
3					
4					
5					
6					
7	Infrastructure NTPC			202.053	
8	Others				
	Total			202.053	
	Storage				

Total volume timber delivery in May 2007 to Ware house: 202.053 m³ (VFA sawmill: 155.138 m³ and VFA storage: 21.964 m³)

<i>Total 2006 up to now</i>	<i>Total Production (m³)</i>	<i>Total Delivery (m³)</i>	<i>Total Remaining VFA storage (m³)</i>
	45191.432	3608.907	1582.525

2.3.3.1.5 Silviculture (plantation, nursery, enrichment)

Nursery

Seedling production:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Ornament Seedling production				
Medicine seedling production				
Transplanting Valuable native species Seedling production				
Changing old seedling bags to new seedling bags	17,729 bags			

Bags preparation:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Filling bags(Soil mixed compost)	4,422bags			
Change small bags to medium bags	10,587 Seedlings bags			
Change small bags to large bags	14 bags			
Transplanting	1,896seedlings			
Fertilizing				
Weeding				
Valuable native species Seed harvested -Vatica cinerea	9 kg			
Seed bed preparation	12 Seedbed			
Bamboo stump	stumps			

Compost production:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
B.E production				
Compost production	kg			
Sawdust transport				
Cow Dung	kg			

Plantation

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Grass cutting, weeding				
Fence maintenance	50 meters			
Land clearing for planting	500 m2			
Fertilizing				
Medicinal planting	seedlings			

Enrichment Planting

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>
Grass cutting, weeding			
Fence maintenance			
Fertilizing			
Fire protection			

2.3.3.1.6 Forage

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Grass cutting, weeding				
Harvesting seed -Ruzisiensis				
Fertilizing	ha			
Fence				

2.3.3.1.7 NTFP

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Making house for Orchid 7x9m				
Planting Orchid with dead stump tree				

Summary working days (WD) for Silviculture: 474 WD

2.3.3.1.8 Furniture, handicraft manufacture

No change from previous report

2.3.3.1.9 Charcoal & brick making

No change from previous report

2.3.3.2 Nakai Plateau Agricultural and Livestock Development Program

2.3.3.2.1 Land Preparation and preparation of the fields in summarized in the following table:

Nakai Agricultural Livelihood Program - Status as of early May 2007

Note: Oudomouk timing to be determined following completion of survey in early 2007
Phon Phan Pack (not reservoir affected) timing to follow survey in early 2007

Villages		Thalang	Sop Phene	Nong Boua Kham	Sop Hia (first group)	Sop Ma	Nakai Neua	Nakai Tai	Area 7	Nong Boua + Keng Gnao	Boua Ma	Phonsavang	Sop On + Ka Oy	Ban Done + Ka Oy	Khone Kene	TOTAL
area																
Total hh to be resettled		79	57	57	36	67	92	194	40	43	74	41	136	147	52	1115
Resettled:		end 07	mid 06	early 07	mid 06	mid 06	mid 07	mid 07	early 07***	mid 06	mid 06	mid 06	mid 06*	mid 06	mid 06	
Permanent agriculture land : field of 0.66 ha	Land allocation in Ha	52	30	30	20	40	61	124	24	26	49	27	90	97	34	736
	Cutting of the trees															
	Preparation of the fields															
	Living fences															
	Wet Season Rice/vegetables on minor portion of plot															
Additional permanent agriculture land : field of maximum 3 ha per hh	Wet Season cover plant on major portion of plot															
	Dry Season Borehole Irrigation **															
Common pasture under the forest (property of VFA)	Land allocation															
	Cutting of the trees															
	Preparation of the fields															
	Fencing															
Draw down (seasonal land for cultivation or land pasture)	Sowing cover plant and rice															
	Slash and burn in ha	10	34.6	28.7	15	13.6	47	73.8	0	16.9	14.9	29.5	15.7	55.5	7.4	363
	Sowing of rice	10	34.6	28.7	15	13.6	47	73.8	0	16.9	14.9	29.5	15.7	55.5	7.4	
	Implementation of pasture															

	finished program
	in progress
	Work on farmers own initiative (against NTPC / RMU instruction for nothern areas, as no UXO investig
	due by mid 07 - not yet started
	due after mid 07 - not yet started

* Sop on only - 30 Ka Oy families moved early 07
** program to be tested in Sop On in 2007 and expanded in 2008, 2009
*** does not include the 18 Ahoie households still remaining in old Sop Hia

For the permanent agriculture ongoing of 0.66 ha/hh:

The land preparation is still in each village.

A large part of the farmers (532) are sowing traditional rice inside the drawdown area. It was the advice from the A&L team for only this first year: the farmers can sow traditional rice inside the drawdown area, because in 2007 before the complete flowing of the reservoir; some lands are still cultivable. So, at the end of the month of May, the sowing of the cover plants in the 0.6 fields is just started by few farmers (16). For the moment, some farmers didn't have finished to prepare their field. The objective now is to try to finish a maximum (more 50 %) of the fields of 0.66ha before the beginning of July.

In the village of Nakai Tai, the work had been completely stopped because of the finding of some UXO in few fields. After this discover the District Governor asked the farmers to stop the work, in waiting a secure situation. So, the farmers are now still waiting to have the guaranties of the secure situation, from UXO contractor and NTPC.

The cutting of the big trees (first step of preparation of the land) is almost finished, by the farmers in the majority of the villages, and by the army in the 3 northern villages (Thalang, Sop Phene, Nong Boua Kham) but all the second step of preparation of the field aren't completely finished in all the villages.

All the following data concerned the work completely finished:

Villages	Nb of house hold	Step 1 of the preparation of the field = cutting the big trees	Step 2 of the preparation of the field = cut the small trees and put out all the big trees and big branches	% of progress for the step 2 of the preparation of the 0.66 ha	Sowing of the cover plant (number of plots)	Step 1 of the living fences = wood fences	Step 2 of the living fences = plantation of the seedlings
Khone Kaen	52 hh	3	45	86.5 %		1	0
Ban Done + Ka Hoy	151 hh	32	76	50 %	2	4	0
Sop On	141 hh	14	98	69.5 %	7	98	0
Phonsavang	44 hh	NC	43	98 %	3	38	0
Boua Ma	74 hh	41	74	100 %	1	7	0
Nong Boua + Keng Gnao	43 hh	NC	28	65 %	5	28	0
Area 7 + Nam Nian	41 hh		16	39 %			0
Nakai Tai	201 hh	38	147	73 %		76	0
Nakai Neua	89 hh	5	87	98.8 %		62	0
Sop Ma	74 hh	5	63	85 %		30	0
Sop Hia	36 hh	37	37	100 %	1	38	0
Nong Boua Kham	58 hh	58					0
Sop Phene	56 hh	56					0
Thalang	79 hh	15					0
Average in %				61 %			0 %

2.3.3.2.2 The land allocation

The 10th of May, a last meeting in Nakai NRO permit to have an agreement between all the participants (RMU, District, DAFO, VFA, NTPC) concerning of the land allocation for the new permanent agriculture field of 3 ha/family, for the 14 new villages of the plateau. So, now, the map is clear between the land for agriculture and the forest lands. Each farmer will have 3 ha of permanent agricultural land. We can start to implement the cover plant during the wet season 2008 with the objective to can start to cultivate with sustainable farming systems in 2010.

Just after this agreement, we have started to organize a meeting in each village to confirm officially to the farmers of this new land allocation, and to start the process of implementation of the new fields. The meetings have been made the 18th in Phonsavang, the 19th in Sop On, and the 21st in Nong Boua. All the other meetings, for the other villages will be making during the months of June and July.

The process of land allocation of the new fields of 3 ha has started in Phonsavang village. The definition of the limits between each field is now in running in this village. As the process is late, the farmers couldn't sow inside these fields for this year, because the date limit for the sowing of cover plants is the 15th of July.

To improve and speed up the work of land allocation, the A&L team will recruit 2 new land allocation officers in June to speed up the allocation process.

2.3.3.2.3 Improvement of the A&L staff and speed up the promotion of new techniques

At the beginning of May, we have made 3 sessions of training for all the extension workers of the A&L team (NTPC and DAFO). The main topic of this training was on the methodology of promotion concerning the new techniques and to speed up the sowing during this new coming raining season in adding some technical advices for the team.

During the month of May, the team direction made some interview with some candidates. Some new staff will start their contract in June as extension worker (4 people), adviser in Marketing and Supplying (2 staff), land allocation officer (2 staff).

2.3.3.2.4 Sensitization of the farmers towards sustainable farming systems

The 29th of May, we have organized a general meeting, in Nakai NRO meeting room, with all the chiefs and the deputy of the villages. This important meeting of work have permitted for us to re explain the key points of the methodology, process and techniques. The chiefs of the villages have the opportunity to discuss together, to give us their point of view, to have some explanations. A detailed official account of meeting will be finalized by the 15th of June.

2.3.3.2.5 The activity inside the Center of Creation and Multiplication (CCM)

During the month, we have started an important activity inside each CCM. This activity is to clean all the CCM, to make the sowing of the rice, to plant the living fences, to sow the cover plants, to repair the fences, to review the storages.

Inside the CCM of Nong Boua Kham a borehole has been drilled to supply in water the entire future CCM (house for staff, nursery for seedlings and fields). The system of water supply in Nakai Neua CCM will be improved soon.

2.3.3.2.6 Other activities

The mushroom production and the organic fertilizer production have been review to continue these activities inside the villages, with a sustainable and profitability approach for the farmers' producers of mushrooms. The A&L team has already organized two workshops to analyses the problems of the past and to start in new conditions. In Nong Boua pilot village, after two years of complete support, the farmers explain that it's impossible for them to continue by themselves the mushroom and the compost productions. The objective will be to can start again these activities, in profitable and sustainable conditions for the voluntary farmers, early of July 2007.

Concerning Livestock, the global and individual inventory of the entire large ruminant, for the 14 villages, has been finished at the end of the month. After a first analyses, we can see that a lot of animals are not identified (ear tags), the covering of the vaccination is not so good. We have already started to identify the Villager Vaccinators Workers (VWW), to create all the methodology and meaning to make some training for these farmers. We could start really when we'll recruit the new coming Health animal staff (to be recruited in June).

The Resettlement Advisor's Report, 5th mission was received reviewed and commented in dedicated report.

2.3.3.3 Fisheries Reservoir Program

The field study has been carried out and a draft report on the Reservoir Fisheries Management Program was released to NTPC on 1st April 2007 for review and comments. Final version expected in June 07

2.3.3.4 Community Development Program

General / Summary:

In general, the overall progress of CD activities is quite good, which is geared towards potential off-farm income generating activities. Final census of most villages have been completed and yet 4 more to be on going and old Sop Hia village to be finalized.

All households impacted by the reservoir and below 530 have been relocated to a safe location. Except in old Sop Hia and Oudomsouk and will be done within end June 2007.

Socio-economic data are being collected by a team of 17 DWG staff trained (12 more). The data will be useful for both our SRO teams in Nakai, as well as others interested, especially for independent auditors. Our CD Team also collected monthly income-expenditure data of each household in each village to monitor their income derived from various sources and from our Project supports

Routine institutional development activities were also supported through DWG. Training and regular follow up with advices provided proved to be step by step strengthened the local institution in playing their role towards resettlement activities.

Gender issues were regularly monitored and recently a team of expatriate and local gender specialists came to monitor the progress with the Gender mainstreaming team set up in each unit. Report will be provide separately by the team later on.

Beside than rice and protein supports to all resettlers (as agreed by all parties concerned) who have been relocated and basic education support to teachers and children's food, CD is now concentrating to develop revolving fund / credit system in each village to facilitate the investment in off-farm activities proved to be beneficial to the resettlers as a source of income for their family economy. Now weaving, tailoring, wicker works are being supported, since the villagers have done them for quite some time and received some good incomes from these activities.

The villagers received quite a large sum of money from the Project for their labor inputs in houses construction, dismantling their old houses and Disturbance allowance. They were encouraged to put their money in the bank, which are very useful for them in off-farm investment. This will ensure the proper and effective use of their money gained.

Vulnerable households have been supported with additional basic needs and suitable incomes activities will be followed soon.

Grievance have been tackled with care and understanding, but CA entitlements should be the basis for decision by Grievance committee at various level. Summary of cases solved and yet to be solved is in below table.

I. Census:**1. Percentages of final census**

Items	Village	This month	Cumulated
1	Sop on + Ka Oy (Area 19)	0%	100%
2	Bouama (Area 17)	0%	100%
3	Phonsavang (Area 18)	0%	100%
4	Done + Ka Oy (Area 21)	0%	100%
5	Khone Kaen (Area 22)	0%	100%
6	Nongboua - Keng Gnao (Area 16)	0%	100%
7	Nongboua Pilot Village (Area 16)	0%	100%
8	Sop Ma (Area 8)	0%	100%
9	Sop Hia (Area 8a)	0%	100%
10	Sop Phene (Area 11)	0%	100%
11	Nakai Neua (Area 1)	20%	70%
12	Nakai Tai (Area 2)	30%	60%
13	Nongbouakham (Area 9)	0%	100%
14	Thalang (Area 13)	10%	80%
15	Phonphanpek	0%	30%
16	Oudomsouk	0%	50%

Notes:

1. 100 % of cumulative figure means the census of the village has been completed, the figures are the basis for all related planned supports to the resettlers as per CA
2. Higher percentages like Nakai Tai, Nakai Neua and Thalang are just under final revision.
3. Lower percentages like Oudomsouk and Phonphanpek are ongoing

2. Final figures of Resettled households & number of persons as per final census

Items	Village	Households	population
1	Sop on + Ka Oy	135	610
2	Bouama	74	353
3	Phonsavang	41	212
4	Done + Ka Oy	147	801
5	Khone Kaen	52	260
6	Nongboua-Keng Gnao	13	60
7	Nongboua Pilot Village		
8	Sop Ma	67	308
9	Sop Hia Area 8a	36	192

Items	Village	Households	population
10	Sop Phene	57	239
11	Nakai Neua	On going	On going
12	Nakai Tai	On going	On going
13	Nongbouakham	57	300
14	Thalang	On going	On going
15	Phonphanpek	On going	On going
16	Oudomsouk	On going	On going

Please See above notes

Some 13 Vietic households will still remain in old Sop Hia for longer period, but regarded as temporary relocation to a higher level, well above 540. The figures with regard to old Sop Hia will be provided during next monthly report

III. Socio – Economic Data Collection (under Khone Kaen supervision-every six month)

No.	Village	No. of HH	No. HH (data collection)	Percentage
1	Nongboua – Keng Gnao	38	38	100%
2	Bouama village	74	74	100%
3	Phonsavang Village	41	10	25%
4	Sop On Village	135	34	25%
5	Done Village	147	37	25%
6	Khone Kaen Village	52	13	25%
7	Sop Phene Village	57	14	25%
8	Sop Ma Village	67	17	25%
9	Sop Hia, Nam Nian – Area 7			
10	Nongbouakham Village	57	14	25%
11	Thalang Village	76	19	25%
12	Sop Hia - Area 8	31	8	25%
13	Nakai Neua village	92	23	25%
14	Nakai Tai village	191	45	25%

There are also monthly basic income-expenditure data collection for each village households by our own CD Team (SRO+DWG and RMU). Results will be provided during next report

IV. Relocation Activities (Temporary)

No	Activities / Locations	Dates	Participants	Outputs
1.	Follow up Relocation Planning activities for Ban Thalang (family under EI 530)	1-4/05/07	SRO: 1 person DWG: 1 person	24 families moved to temporary houses.
2.	Follow up Relocation planning activities for Ban Nakai Tai (family under EI 530)	1-23/05/07	SRO: 1 person DWG: 1 person	25 families moved to temporary houses.
3.	Follow up Relocation Planning activities for Ban Nakai Neua (family under EI 530)	1-19/05/07	SRO: 1 person DWG: 1 person	9 families moved to temporary houses.

Notes: There are also some 4 houses to be relocated around Oudomsouk city (only 2 houses will be entitled to receive new houses).

V. Institutional Strengthening

No	Activities / Locations	Dates	Participants	Outputs
1.	Conduct training on Management to VRC and LNFC at Village level (Ban Nakai Tai and Nakai Neua)	16/05/2007	SRO: 1 person DWG: 1 person 18 attendants (8 women)	Generally good
2.	Conduct training on Management to VRC and LNFC at Village level (Ban Nongboua and Bouama)	18/05/2007	SRO: 1 person DWG: 1 person 17 attendants (6 women)	Generally good
3.	Conduct training on Management to VRC and LNFC at Village level (Ban Phonsavang and SopOn)	21/05/2007	SRO: 1 person DWG: 1 person 21 attendants (8 women)	Generally good
4.	Conduct training on Management to VRC and LNFC at Village level (Ban Done and Khone Kaen)	23/05/2007	SRO: 1 person DWG: 1 person 20 attendants (8 women)	Generally good
5.	Training to CD staff on Planning (In resettlement)	28/05/2007	SRO: 1 person DWG: 1 person 22 attendants (6 women)	Generally good

Village Development Fund Committees establishment (as part of institutional strengthening)

No.	Item	This month	Cumulated	Remark
1	Set up village development fund committee (district level)	100%	100%	Table a
2	Developed Village development Fund – Rule & role and duties for VDF committee (District level)	80%	80%	
3	Village Revolving Fund Committee (VRFC) – role and duties (District level)	80%	80%	
4	Village Revolving Fund Committee (VRFC) – role and duties (village level)	20%	20%	
5	Rule for Village Revolving Fund (Management)	0	0	

Notes: This is to support villagers in managing their own resource as a strong community and to provide fund for those who need for their off-farm income generating activities. The committees are supposed to steer the various resources of the villages for the benefits of all villagers, especially the vulnerable households.

VI. Rice & Protein Support.

1. **Rice:** quantity provided in Kg/ HHs received rice support.

No.	Village	No. of HH	This month	Remark
1	Nongboua – Keng Gnao	9	618	
2	Bouama village	74	5,502	
3	Phonsavang Village	37	2,628	
4	Sop On Village	137	9,452	
5	Done Village	148	12,432	
6	Khone Kaen Village	51	4,044	

No.	Village	No. of HH	This month	Remark
7	Sop Phene Village	57	3,624	
8	Sop Ma Village	67	4,716	
9	Sop Hia, Nam Nian – Area 7	44	3,576	
10	Nongbouakham Village	57	4177	
11	Thalang Village	24	2037	
12	Sop Hia – Area 8a	40	2,976	
13	Nakai Neua village			
14	Nakai Tai village	25	1,638	
15	Sop Hia – Old	17	1,152	

2. **Protein:** quantity provided (Dry and fresh meat) 0.2 kg/week/person. HHs received support.

No.	Village	No. of HH	This month			Cumulated		
			Dry meat (fish)	Fresh meat (fish)	Egg	Dry meat (fish)	Fresh meat (fish)	Egg
1	Nongboua – Keng Gnao	4	10.4	10.4	104			
2	Bouama village		4.8	4.8	48			
3	Phonsavang Village		9.6	9.6	96			
4	Sop On Village		129.6	129.6	1296			
5	Done Village	148	640.8	640.8	6408			
6	Khone Kaen Village	51	208	208	2080			
7	Sop Phene Village	4	4.8	4.8	48			
8	Sop Ma Village	2	1.6	1.6	16			
9	Sop Hia, Nam Nian – Area 7	44	180.8	180.8	1808			
10	Nongbouakham Village	57	240	240	2400			
11	Thalang Village	24	93.6	93.6	936			
12	Sop Hia – Area 8a		0	0	0			
13	Nakai Neua village		14	14	140			
14	Nakai Tai village	25	42.8	42.8	428			
15	Sop Hia - Old	17	16.2	16.2	162			

VII. Education:

1. Teachers' salaries: number of teachers supported / amount paid

a. Primary school

No.	Village	Govt. teacher	This month	Employee Teacher	This month
1	Nongboua – Keng Gnao	2	400,000	1	400,000
2	Bouama village	1	200,000	1	400,000
3	Phonsavang Village	1	200,000		
4	Sop On Village	3	600,000	1	400,000
5	Done Village	5	1,000,000	1	400,000
6	Khone Kaen Village			1	400,000
7	Sop Phene Village	1	200,000	1	400,000
8	Sop Ma Village			2	800,000
9	Sop Hia, Nam Nian – Area 7	1	200,000		
10	Nongbouakham Village				
11	Thalang Village				
12	Sop Hia – Area 8a	1	200,000	1	400,000
13	Nakai Neua village				
14	Nakai Tai village				

b. Nursery school.

No.	Village	No. of teacher	This month	No. of Child Male (Female)	NTPC support (Lunch) per month
1	Nongboua – Keng Gnao	2	800,000	38 (23)	1,254,000
2	Bouama village	4	1,600,000	68 (31)	2,244,000
3	Phonsavang Village	2	800,000	40 (18)	1,320,000
4	Sop On Village	4	1,600,000	85 (39)	2,805,000
5	Done Village	5	2,000,000	95 (45)	3,135,000
6	Khone Kaen Village	2	800,000	46 (15)	1,518,000
7	Sop Phene Village	2	800,000	37 (16)	1,221,000
8	Sop Ma Village	4	1,600,000	56 (21)	1,848,000
9	Sop Hia, Nam Nian – Area 7	2	800,000	37 (18)	1,221,000
10	Nongbouakham Village				
11	Thalang Village				
12	Sop Hia – Area 8a	2	800,000	27 (16)	891,000
13	Nakai Neua village				
14	Nakai Tai village				

c. Non-formal school (4 month per year)

No.	Village	No. of teacher	This month	No. of student Male (Female)
1	Nongboua – Keng Gnao	2	400,000	27 (25)
2	Bouama village			
3	Phonsavang Village	1	200,000	35 (24)
4	Sop On Village	2	400,000	60 (37)
5	Done Village			
6	Khone Kaen Village	2	400,000	35 (26)
7	Sop Phene Village			
8	Sop Ma Village	2	400,000	56 (21)
9	Sop Hia, Nam Nian – Area 7			
10	Nongbouakham Village			
11	Thalang Village			
12	Sop Hia – Area 8a	1	200000	25 (11)
13	Nakai Neua village			
14	Nakai Tai village			

VIII. Off – Farm Income Support

1. Village Revolving Fund (Pasason Fund) / Saving Committees establishment

No.	Village	Establish	No. of members	Saving	Percentage of membership
1	Nongboua – pilot village	22/5/2007	43	86,000	87.75%
2	Bouama village	14/5/2007	53	265,000	66.25%
3	Sop On village	9/5/2007	134	268,000	95.71%
4	Done village	12/5/2007	101	202,000	60.47%
5	Sop Ma Village	26/5/2007	60	300,000	89.55%
6	Sop Phene Village	30/5/2007	47	235,000	82.45%

2. Income derived from off – farm activities

2.1 Weaving group (Sop Hia Area 8a) and Area 7

No.	Village	Income derived from off-farm activities		Remark
		This month	Cumulated	
1	Sop Hia – Area 8 (12 pers.)			Still to be collected
2	Sop Hia – Area 7 (6 pers.)	450,000	650,000	
3	Thalang	60,000		

2.2 Wicker work: On going. Results will be monitored and will be reported later on.

2.3 Tailoring funds: on going. Results will be monitored and will be reported later on.

3. Consultation with Sop Phene and Sop Hia Area 8 a villagers to encourage them to put their incomes (derived from the Project labor inputs) in the BCEL bank – Khammouane branch in their personal saving accounts (saved in BCEL).

No.	Village	No. of House hold	Amount (Kip)	Remark
1	Sop Phene village	56	35,752,500	(5 HH have no family registration book).
2	Sop Hia – Area 8	43	22,462,500	

IX. Grievance

No.	Village	No. of Grievance	New Grievance for this month	Grievance closed Total	Grievance close during This month	Total grievances still open
1	Nongboua – Keng Gnao	1	0	1	0	0
2	Bouama village	6	0	6	0	0
3	Phonsavang Village	4	0	4	0	0
4	Sop On Village	4	0	4	3	0
5	Done Village	44	0	44	0	0
6	Khone Kaen Village	2	0	2	0	0
7	Sop Phene Village	1	0	0	0	1
8	Sop Ma Village	1	0	1	0	0
9	Sop Hia, Nam Nian – Area 7					
10	Nongbouakham Village					
11	Thalang Village	1	0	0	0	1
12	Sop Hia Area 8a	4	0	4	0	0
13	Nakai Neua village					
14	Nakai Tai village					
15	Oudomsouk	6	5	1	1	5
16	Phonphanpek	6	6	0	0	6

X. Vulnerable households Support**Villagers workshop for finding vulnerable HHs**

No.	Village	Date	Participant (women)	Certified Vulnerable	No. of Vul. HHs	NTPC support
1	Nongboua – Keng Gnao				8	8
2	Bouama village				6	4
3	Phonsavang Village				4	3
4	Sop On Village	18/5/06	10 (4)	2	12	9
5	Done Village				5	4
6	Khone Kaen Village				5	4
7	Sop Phene Village				8	8
8	Sop Ma Village				7	7
9	Sop Hia, Nam Nian – Area 7	16/5/07	8 (3)	1		
10	Nongbouakham Village	15/5/07	11(2)	2		
11	Thalang Village	17/5/07	10(3)	4		
12	Sop Hia (Old)					
13	Nakai Neua village	14/5/07	9(8)	3		
14	Nakai Tai village	12/5/07	18(10)	10		

Training to CD staff on project Planning at village level



Social Activities

Downstream Areas

2.4 Downstream Areas Development Plans

Downstream Program - status at end of May 2007

Key dates for the DS program :

- feb 2009 : 3 m3/s on average (first tests of Pelton)
- March 2009 : 5 m3/s on average (tests of Peltons)
- April 2009 : 20 m3/s on average (first tests of Francis 1 + tests on Peltons)
- June 2009 : 40 m3/s
- July 2009 : 90 m3/s
- Nov 2009 : 225 m3/s

Direct impacts are expected to be :

- Reduced water quality and / or higher turbidity (and related fish resource depletion)
- Increased flooding (Lower XBF)
- Possible increased river bank erosion

They will translate into social impacts through :

- fisheries
- access to domestic water
- riverbank gardens
- agricultural and livestock production
- assets and housings (for those located close to the riverbank)

The DS program aims at compensating, directly or indirectly, these potential impacts.

		RIPARIAN							
<i>Total villages Riparian : 86</i>	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	<i>total achieved to date</i>	<i>in progress</i>	Unit	Comment	
VDCC + Villages comitees establishment	86	86	86	39	14	0	Village		
Mini-Polders	+/- 25	5	5	5	0	0	Mini-Polders	3 mini-polders planned to be completed before 2008 WS	
Flood gates rehabilitation	14	7	0	0	0	0	Gates	to be coordinated with GoL program for lower XBF (under definition by GoL)	
WAtter supply (tube wells)	+/- 470	+/- 470	+/- 470	+/- 65	0	0	Tubes Well	all riparian villages along the XBF must have access to dafe water by COD - most of villages are already partly equiped - final desings depending on ongoing consultations with villagers	
(WA)SH program (including sanitation facilities)	86	86	82	19	0	10	Village		
Agriculture, horticulture - TA + support	86	86	86	39	0	14	Village		
Livestock - TA + support	86	86	86	39	0	14	Village		
Fisheries co-management (villages component)	86	86	86	0	0	0	Village	the 15 villages US of the Nam Phit confluence (on XBF) are not concerned by this component	
Aquaculture	86	86	86	46	0	14	Village		
Saving and Credit	86	86	86	39	0	14	Village		
Handicraft	86	86	86	31	0	7	Village		

		HINTERLAND							
<i>Total villages Hinterland : 97</i>	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	<i>total achieved to date</i>	<i>in progress</i>	Unit	Comment	
VDCC + Villages comitees establishment	97	59	7	7	0	6	Village		
Mini-Polders									
Flood gates rehabilitation									
WAtter supply (tube wells)	0	0	+/- 15	+/- 15	0	0	Tubes Well	Implementation scheduled post-COD	
(WA)SH program (including sanitation facilities)	97	59	6	7	0	2	Village	Implementation scheduled post-COD	
Agriculture, horticulture - TA + support	97	6	6	7	0	7	Village	Long term program, Technical assistance over several years	
Livestock - TA + support	97	6	6	7	0	7	Village	Long term program, Technical assistance over several years	
Fisheries co-management (villages component)	97	97	50	0	0	0	Village		
Aquaculture	97	97	TBA	7	6	0	Village	Program to be defined for 2008	
Saving and Credit	6	59	6	7	0	6	Village		
Handicraft	0	0	6	3	0	3			

		Downstream of the dam							
<i>Total villages DS of the dam : 38</i>	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	<i>total achieved to date</i>	<i>in progress</i>	Unit	Comment	
VDCC + Villages comitees establishment	37	37	37	37	0	0	Village	Implementation scheduled post-COD	
Mini-Polders									
Flood gates rehabilitation									
Fisheries co-management (villages component)	37	12	6	0	0	0	Village		
Aquaculture	n/a	n/a	n/a	n/a	0	0	Village	Program to be defined	
Saving and Credit	0	37	37	37	0	0	Village		
Handicraft									

Total villages : the total number of villages identified as potentially impacted by NT2 operation in the so called "Downstream Areas" is 221 at end February, based on new results of fish catch monitoring program. Qualification as "Hinterland" and "Riparian" villages is being reviewed and improved. The reporting since February 2007 includes a third specific category for the 38 villages located downstream of the dam (they were previously reported in the 2 categories : Hinterland and Riparian)

2.4.1 General overview

- Sanitation awareness training continued in pilot villages, including 5 schools
- Procurement of sanitation facility materials continued for the pilot villages, with toilet construction progressing starting some villages
- Design of a mini-polder scheme in the lower Xe Bangfai region continued

- Fish catch monitoring continued.

2.4.2 Baseline Studies, Monitoring

Baseline Studies / Monitoring

Further planning was undertaken during the reporting period regarding monitoring necessary to meet the Concession Agreement obligations.

2.4.3 Reports & Meetings

Meetings

A Downstream Program section leader meeting is scheduled for every Tuesday morning and a full Downstream Program staff meeting once per month. Minutes of meeting are prepared and distributed to enable staff to follow up on items discussed during the meeting. A meeting with representatives from the RMU is also held every other Tuesday after section leader meeting.

Reports

Preparation of a consolidated Downstream Program Implementation Plan continued.

2.4.4 Administration

Personnel issues

Additional administration/financial staff postponed this year. It is expected to recruit additional staff second half of 2007.

Recruitment of four additional drivers will be done during June. It is expected that the new four vehicles will arrive at the end of June 2007 to support the ever increasing level of field activity being undertaken by the Downstream Program.

An additional Downstream Program Hygiene/Sanitation specialist will be recruited by August 2007. Advertising and collection of resumes began in early-June. Interview will be conducted in July.

Other administration

No activity to report

2.4.5 GOL Coordination

During the reporting period, the Downstream Program team held two coordination meetings with the RMU to discuss coordination issues.

2.4.6 Community Organization / Village Development Fund

Village Organization – VDCC

The Community Organizer team together with RMU and DWG's completed the revised roles of village management committee, evaluated their performance and included some adjustment of village fund regulation. Within 20 villages there are two villages which had to elect new VDCC members due to financial problems (Povaneua and Veunsananh). These changes also have involved all household representatives who agreed on village/saving fund rules/regulation conducted at same time. In each village the participation of villagers needs to reach at least 60% of total households. There were 4 villages which had to organize a second meeting because the number of villagers attending the meeting was less than 50% (Beungxe, Povaneua, Mahaxaitai and Khoksavang).

During these meetings villagers requested more TA support from all levels, especially checking for errors in their accounting procedures. Coordination of VDCC and village advisory committee is not satisfactory, primarily because of problems with reporting systems and a lack of discussion with committee. Also, villagers complained that the VDCC operation is not transparent, as some VDCC have taken loans more than amount allocated and family of VDCC members have loan approved more often than other members.

Village Revolving / Saving Funds

Related to the findings from the revision of village programme management within 20 pilot villages, rules and regulation have been adjusted to enforce stricter implementation of procedures.

Please refer to the table below, which provides information on revolving / savings fund program:

Monthly Cash Flows May 2007

A	B	C	D	E	F	G	H	I	J	K	L**
No.	Village Name	No. Members in S&C Group (HH)	Total NTPC Funds Transferred to VDCC Bank A/c to Date.	Total Savings Received from Members	Total Revenue Received from Sale of Passbook, Regn Fee, etc	Total Interest Paid by Bank to VDCC Bank A/c	Total Interest Received from Members Loans	Accumulated Expenses Paid to Date	Members Savings Returned (Sharing Devised)	Members Bad Debts Written Off	Current Total S&C Group Fund Value
	Gnommalath District		542,000,000	33,191,000	1,301,000	1,666,306.73	11,625,000	190,500	393,000	-	589,199,807
1	Phathung	78	150,000,001	12,266,000	480,000	416,979.87	5,031,000	82,500	-		168,111,481
2	Nongping	47	229,999,999	15,865,000	388,000	748,995.16	3,477,000	7,000	274,000		250,197,994
3	Khoksavang	58	162,000,000	5,060,000	433,000	500,331.70	3,117,000	101,000	119,000		170,890,332
	Mahaxay District		1,198,056,546	204,475,000	3,608,000	4,417,407.90	41,443,000	1,767,000	364,000	-	1,449,868,954
4	Mahaxaitai	133	461,728,369	113,095,000	1,425,000	1,191,893.57	7,854,000	220,000	364,000		584,710,263
5	Povaneua	84	220,075,519	26,700,000	920,000	1,065,189.09	10,791,000	572,000			258,979,708
6	Povatai	95	278,485,338	48,914,000	626,000	1,430,195.24	17,604,000	743,000			346,316,533
7	Khamfeuag	95	237,767,320	15,766,000	637,000	730,130.00	5,194,000	232,000			259,862,450
	Xebangfai District		1,336,588,029	89,810,000	2,809,000	4,414,346.57	39,391,500	4,711,000	550,000	-	1,467,751,876
8	Kengpe	65	178,035,291	6,254,000	980,000	784,850.53	7,071,000	745,000			192,380,142
9	Veunsananh	8	144,379,350	3,433,000	270,000	524,815.62	2,901,000	243,000			151,265,166
10	Hatpek	26	65,999,984	1,220,000	180,000	440,745.73	-	135,000			67,705,730
11	Yangkham	172	484,947,196	37,933,000	1,305,000	1,559,205.97	15,834,000	3,426,000			538,152,402
12	Hatkhamhieng	105	463,226,208	40,970,000	74,000	1,104,728.72	13,585,500	162,000	550,000		518,248,437
	Nongbok District		490,883,928	66,065,000	2,289,000	1,255,573.61	39,240,000	2,918,500	3,120,000	-	593,695,002
13	Hatxaifong	54	104,999,974	6,534,000	764,000	543,992.90	8,131,000	612,000			120,360,967
14	Navangneua	121	385,883,954	59,531,000	1,525,000	711,580.71	31,109,000	2,306,500	3,120,000		473,334,035
	Xaybully District		1,061,365,164	108,172,500	4,601,000	4,913,626.91	55,651,000	1,876,500	-	-	1,232,826,791
15	Veunsivilai	68	227,862,395	26,578,000	818,000	712,300.96	6,568,000	506,000			262,032,696
16	Beungxe	94	215,799,326	35,416,000	827,000	860,639.80	25,270,500	426,000			277,747,466
17	Beung Xe (AC SVK)		90,703,574	-	-	45.83	-	-			90,703,620
18	Beungbouathong	101	131,999,967	16,313,000	791,000	791,629.91	2,367,000	106,000			152,156,597
19	Nasang	102	195,999,951	12,405,000	1,048,000	1,246,817.99	14,475,000	598,500			224,576,269
20	Thaphoxai	104	108,999,973	10,088,500	590,000	735,190.65	1,710,500	161,000			121,963,164
21	Nonenakhom	46	89,999,978	7,372,000	527,000	567,001.77	5,260,000	79,000			103,646,980
			4,628,893,667	501,713,500	14,608,000	16,667,261.72	187,350,500	11,463,500	4,427,000	-	5,333,342,429

Fund Activity For May 2007

No.	Village Name	Total No. Loans Disbursed to Date	Total Value of Loans Disbursed to Date (Kip)	Total No. Loans Repaid	Total Value Loans repaid (Kip)	Total Number Loans Outstanding but Not Yet	Total Value of outstanding but not Yet Due Loans (Kip)	Total Number Loans Outstanding and Past Due (Loans)	Total Value of Past Due Loans	Number of Loans Written Off	Value of Loans Written Off (Kip)
	Gnommalath District	69	203,180,000	28	54,736,000	34	132,694,000	14	15,750,000	-	-
1	Phathung	69	61,500,000	28	20,800,000	34	30,200,000	7	10,500,000	-	-
2	Nongping	-	89,380,000	-	9,586,000	-	77,894,000	1	1,900,000	-	-
3	Khoksavang	-	52,300,000	-	24,350,000	-	24,600,000	6	3,350,000	-	-
	Mahaxay District	280	827,730,000	41	151,007,000	224	646,173,000	16	30,550,000	-	-
4	Mahaxaitai	165	269,287,500	26	24,850,000	137	241,387,500	2	3,050,000	-	-
5	Povaneua	115	172,735,000	15	48,372,000	87	97,863,000	13	26,500,000	-	-
6	Povatai		225,252,500	-	28,985,000	-	195,267,500	1	1,000,000	-	-
7	Khamfeuang		160,455,000	-	48,800,000	-	111,655,000			-	-
	Xebangfai District	359	730,471,000	100	284,704,500	206	385,538,000	53	60,228,500	-	-
8	Kengpe		66,469,000	-	14,743,000	-	51,726,000	-		-	-
10	Veunsananh	62	74,862,000	3	500,000	35	59,862,000	24	14,500,000	-	-
	Hatpek		12,200,000	-	-	-	12,200,000			-	-
11	Yangkham	130	296,730,000	61	127,756,500	56	148,395,000	13	20,578,500	-	-
12	Hatkhamhieng	167	280,210,000	36	141,705,000	115	113,355,000	16	25,150,000	-	-
	Nongbok District	278	391,807,000		308,031,000		83,776,000	-	-	-	-
13	Hatxaifong	78	91,050,000	24	58,370,000	54	32,680,000			-	-
14	Navangneua	200	300,757,000		249,661,000	-	51,096,000			-	-
	Xaybulu District	293	926,451,500	193	436,593,000	75	414,253,500	25	75,605,000	-	-
15	Veunsivilai	96	150,047,500	48	65,982,500	46	82,005,000	2	2,060,000	-	-
16	Beungxe	197	395,172,000	145	249,965,000	29	71,662,000	23	73,545,000	-	-
17	Beung Xe (AC SVK)	-	-				-	-	-	-	-
18	Beungbouathong	-	69,103,500		26,843,500		42,260,000	-	-	-	-
19	Nasang	-	209,581,500		75,317,500		134,264,000	-	-	-	-
20	Thaphoxai	-	47,358,000		9,874,500		37,483,500	-	-	-	-
21	Nonenakhom	-	55,189,000		8,610,000		46,579,000		-	-	-
		1,279	3,079,639,500	362	1,235,071,500	539	1,662,434,500	-	-	-	-

2.4.7 Livelihoods*General*

Livelihood development activities in the 20 pilot villages continued during the reporting period.

*Agriculture***1. Jatropha planting (On the job training)**

Jatropha field training combined with integrated cropping was completed in 2 villages, Kengpe and Veunsananh.

Seedlings and seeds were delivered to selected pilot villages for intercropping: 1250 pine apple seedlings, 4 packs sweet corn seed, 10 kilo of cotton seed, 1 kilo of Stylo seed, 1 pack of cassava.

- Participants involved: 33 people, 16 women, 2 trainers (NTPC), 1 DWG representative.
- The methodology and technique are: 4 hh, were tested on integrated cropping, which is mixing different crops together in one plot such as Jatropha, Pine apple, forage (Stylo grass), sweet corn and cotton.
- 60 % of Jatropha nursery was planted in Kengpe and 10% in Veunsananh
- There are some additional plots which are separate single crops for testing as new upland rice variety, sweet corn, and peanut grow in the same areas.

2. Small scale integrated farming trial (Veunsananh village)

So far the activity is about 40% complete; with fish ponds mixed with other crops such as pine apple (around the fish ponds). Jatropha was also planted around the fish pond, together with existing home gardens.

The remaining activities will include planting different crops such vegetable, forage as well as raising pigs above the fish ponds. Those activities will begin in June.

3. **Recession flooding rice production**

- A meeting with National Seed Multiplication Centre was organized in Vientiane together with representatives from the RMU and NTPC.
- The result of this meeting was that NSMC, RMU, NTPC will cooperate and to test flood resistant rice varieties in selected downstream target villages. NTPC will provide logistic and financial support, RMU will be responsible for selecting an area for testing, and NSMC will provide experts, training and seeds.
- The project will be start in June.

Horticulture

1. Completed establishment of a demonstration of home gardens during the wet season for vegetables production in Nongping village. Six household are involved with total area 3,200 m² growing various vegetables species (coriander, green onion, lettuce, long bean) Input distributed for the 6 household included green onions 150 kg, coriander 20 kg, and 3 bags of fertilizer (15-15-15).
2. Established demonstration of sweet corn, peanuts and pine apple growing in Kengpe, Veunsananh and Hatpek villages. Varieties used ATS 2 for sweet corn, Tainan 9 for peanut and sweet Singapore for pine apple. A total of 12 households are involved, with a total area of 8,500 m².
3. Prepared demonstration of rice varieties for test the drought tolerance in Kengpe, Veunsananh Villages. Varieties compared and used R. 258, local.
4. Conducted on the job training for the basic technology practices for the home garden wet season vegetables growing and inter-cropping techniques combined with Jatropha, sweet corn, pineapple. The activity included a total of 37 participants, with 23 women. Training was done in Nongping and Kengpe Villages.
5. Completed assessment and evaluation of dry season rice production in 5 villages. The data collected included yield/hectare, total production, total quantities sold and consumed.
6. Assist VDCC and households in formulating business plan for wet season rice and crops production in Mahaxai district.
7. Conducted feasibility study to establish integrated farming system in Veunsananh Village. The preliminary concept is that there should be combination of crops, livestock and fish ponds.

Aquaculture

Downstream aquaculture activities during the reporting period included:

1. Fish seed producer:
 - During May 2007 Mr. Peunmany and MR. Syphakang at Beungxe village and Mr. Phanh at Navangneua village have produced fish seed as shown in the table bellows:

No	Producer name	village	Produced		
			Tilapia	Common cap	Silver barb
1	Mr. Peunmany	Beungxe	20,000	80,000	150,000
2	Mr. SyPhakang	Beungxe		100,000	110,000
3	Mr. Phanh	Navangneua	5,000	-	30,000

2. Fish were caught in the community fishpond at Khoksavang for household consumption and sold, generating an income of 700,000 kip. At Khamfeuag, the community fishpond is currently being used for tilapia reproduction. During the rainy season villagers will release the fish n 25 newly constructed ponds.
3. Fish culture in rice field and pond culture in dry season in Navangneua, Hatxaifong, Yangkham, Hatkhamhieng, Mahaxaitai and Pova is going. To evaluate fish production the aqua- culturist distributed 36 evaluation forms to district staffs for interviewing and collecting fish production data from 36 households that are target households.
4. The owners of 25 new fishponds in Khamfeuag village are expected to receive training on pond preparation and are making nursing hapas, which are needed for nursing fish fries to be fingerling before stocking the ponds
5. During the month of May 2007 44 new fishponds constructed in Mahaxai and Pova, constructed using village funds.
6. Catfish culture demonstration in cement tank and earth pond has been extended in Nongping, Kengpe, Veunsivilai. To support demonstration farmers Downstream Program was providing support for cement, brick, cement block, fish feed, fingerlings and technical advice. Farmers at Nongping, Kengpe and Veunsananh use their own cement tank and some farmers have built concrete tanks from their own budget.

- Rules and regulations for using fish feed machine have been developed and agreed upon by groups of fish farmers in Beungxe, Navangneua and Pova – Mahaxai.

Livestock Activities

Downstream livestock activities during the reporting period included:

1. Ban Nongping, Gnommalat District.

3 households raising pigs planted legumes combined with maize and cassava (each about 15x20m in size).

2. Ban Navangneua, Nongbok District

1 households raising fish planted legumes and maize alongside of the fish pond area about 50 m2.

3. Ban Pova, Mahaxai District.

3 hh raising pig planted legumes and maize

1. Legume combined with Maize (local variety) =	10X20 = 200m2
2. Legume combined with Maize (pure bred) =	8x19 = 152m2
3. Legume combined with Maize (local variety) =	13x12= 154m2
Total	= 506 m2

Field Visits are made regularly to farmers;

- Extension leaflets on forage Development technique were prepared and, in early May, the participating farmers were given very short, on-farm, practical training in forage establishment
- Farmers are generally content to trial small areas of new forages first to become familiar with them and to assess their applicability to their farming situation before committing themselves to large scale development
- The success of forage development does not depend on how large an area the farmers first plant but on how the Development Workers help farmers to solve their problems;
- On-farm training is much more successful than formal training;
- Field trips for farmers are a good way to encourage them to become interested in forage planting;

Piglet production

To ensure that piglet production is appropriate for farmer in program area, NTPC will promote pig production in 2 villages namely Hatpek, Beungbouathong, starting this quarter. There are 15 farmers including, 9 women who participated in a meeting to discuss pig production. One villager from each village was interested to improve piglet production and growing some forage to provide feed for the pig in the next period. For improving the piglet production, NTPC will provide materials for construction of pig pens and provide technical advice regarding techniques for pig raising. To date, pig raising activities have not been implemented as effectively as initially hoped.

Veterinary

Veterinary activities continued during the reporting period.

Summary of four pig raising groups

No	District/ village	No membe rs	Pigs in the beginnin g	Data collection : 5/2007						
				No Pigs sold	Weight s	Total Kip	No pigs sick	Pigs died	Buying /Newly born	No of pig end of May
1	Nongping	18	125	16	389	4,268,000	52	35	2	76
2	Kengpe	14	58	35	1230	12,362,000	15	4	16	35
3	Povaneua	18	57	50	693	20,640,000	6	1	12	18
4	Povatai	17	68	60	1763	17,630,000	25	12	85	81
	Total	67	308	161	4.075	54,890,000	78	52	115	210

Remark:

- 78 pigs were sick and received treatment
- 52 pigs died in the last 5 months about (17%) from piglet pneumonia and diarrhea

Lesson learnt

- Women have an important role to play in pig raising management and monitoring.
- Women are more active than men on animal primary health care.
- A free vaccination campaign which demonstrates the benefits of vaccination could be useful to increase farmer interest in vaccination their animal.

Handicraft

During the reporting period the following activities were undertaken:

- Weaving groups who were involved in last month TOT training session have been extending their knowledge to other women within their villages.
- Completion of on-the-job training for table covers, blankets and towels, including calculation of investment cost and pricing of each pattern for 45 weavers.
- Organization of a focus group with new weaving group members in 2 villages: Beungxe and Hatkhamhieng. Results indicate that Hatkhamhieng weavers are skilled and can produce silk clothes for markets in Vientiane.
- Negotiation with potential purchasers in Thakhek town (Thakhek tourism office, duty free shop at Thakhek immigration check point and handicraft shops at local markets). However, potential buyers have commented that many products are lower in quality compared to products available in Vientiane market.

Tables below are showing the number of weaving members received funds and their production:

v

No.	Village' Name	Household Involved H/H	Total village fund Received (KIP)	Interest to be paid/6months* 1%/month	Total income from selling production up to date
1	Pova	6	3,000,000	180,000 k	1,264,000 k
2	Nongping	15	8,900,000	534,000 k	1,019,000 k
3	Phathoung	4	2,400,000	144,000 k	0
4	Kengpe	12	2,200,000	132,000 k	1,156,000 k
5	Veunsivilai	9	2,000,000	120,000 k	510,000 k
6	Beungbouathong	14	5,000,000	300,000 k	2,159,000 k
	Total=	60	23,500,000 KIP	1,410,000 KIP	6,108,000 KIP

2.4.8 Infrastructure Related Activities*Water Supply / Sanitation / Hygiene (WASH)*

Downstream WASH staff conducted the following activities during the reporting period:

Sanitation & hygiene training / awareness

- Sanitation & hygiene training for five schools was conducted, which attracted a total of 1,005 participants (480 female):
 - Yangkham primary and secondary school
 - Mahaxai secondary school
 - Phathoung primary school
 - Hatkhamhieng primary school
- Sanitation & hygiene training at village level was conducted in Kengpe and Veunsananh, which attracted 163 participants (79 female)
-

Sanitation construction

- Transportation of NTPC supplied sanitation materials to project villages:
 - Majority of material to be delivered to four villages (Khamfeuung, Phathoung, Yangkham and Hatkhamhieng) was completed during May.

- Delivery of materials remaining to be delivered to five villages (Khoksavang, Mahaxai, Pova, Kengpe and Veunsananh) is in progress. Concrete rings and covers transportation are completed three villages such as Kengpe, Veunsananh and Pova. Mahaxai and Khoksavang will be finished by the end of this month.
- Sanitation construction for villages, schools and health center
 - Construction of septic tanks for village toilet model for four villages has been completed. Wall and roof structure construction is in progress. Construction of toilet for four villages includes 347 participating households, of which now 50 households are 100% complete.
 - School toilet for Khamfeuung is under construction (30 percent complete)
 - School and health center toilet for Yangkham and Hatkhamhieng will start early June.
- Establish general agreement for toilet construction for 9 villages (completed): The agreement has been made base on the existing one but the new version has signature from district health office.
- Conduct the monthly coordination meeting with district counterparts: A meeting was held in Thakhek with district counterparts from three districts (Mahaxai, Gnommalat, Xe Bangfai) and one provincial coordinator.

Water supply improvements

- Further planning for water supply improvements in the pilot village was completed.
- Letters of interest for borehole drilling were collected and evaluated. Bidding for “phase one” is expected to commence in early June.

Asset Protection and / or Relocation (APR)

APR activities are separated into the following components:

- riverbank garden replacement
- access restoration / replacement
- structure relocation / protection (including those identified as being a physical cultural resource)
- irrigation pump modification

Preliminary planning for riverbank garden replacement was undertaken with the livelihood team in Kengpe Village. Preliminary guidelines have been developed for infrastructure and livelihood teams to follow.

Some pontoon pump stations in pilot villages along XBF River were pre-surveyed regarding physical condition as well as operation and maintenance arrangements.

Irrigation activities, including Operation & Maintenance

No irrigation (including O&M) activities were undertaken during the reporting period.

Water Gate rehabilitation

Preliminary surveys for 8 of the 14 water gates included within the Downstream Program have been completed. A detailed survey form was developed which will be used when structures are further evaluated in the future.

Mini-polder construction

A topographic survey for one mini-polder scheme was completed during February. The scheme includes 5 villages: Yangkham, Hatkhamhieng, Somsaat, Naphoktha, and Namphou, three of which are pilot villages. During the months of March and April processing of the field survey data was completed and preliminary design drawings prepared. During the reporting period:

- Design drawings have been revised to improve side drainage, further refinement of cost estimates made.
- Designs for water level staff gauges have been designed, which will be installed at riparian pilot villages (excluding Mahaxai & Pova) to enable data collection during flood conditions.

UXO Activities

UXO clearance was undertaken in Ban Pova (Mahaxai District) to support construction of fish ponds.

2.4.9 Fish Catch Monitoring

General

Presently, fish catch monitoring is ongoing in 48 villages

- 11 villages downstream of Nakai Dam, Khamkeut District, Bolikhamxay Province
- 28 villages downstream of the power station, (Gnommalat, Mahaxai, Xe Bangfai, Nongbok districts in Khammouane Province and Xaibouli Province in Savannakhet Province)
- 9 villages upstream of the future Nakai Reservoir (Nakai District, Khammouane Province)

Village Name	District	Location	No. of FCM hh	Fish Catch Monitoring Activity Status					
				hh Monitoring (Daily basis)	Profile meeting (Yearly basis)	Individual hh interviews (Seasonal basis) 2T/y	Fish trader interviews (Seasonal basis) 2T/y	Large scale fishing gear (Yearly basis)	Traditional community fishing (Yearly basis)
Vangkhor	Khamkeut	Nam Kata	5	+	+	+	-	-	-
Vangpha	Khamkeut	Nam Kata	5	+	+	+	-	-	-
Phonthong	Khamkeut	Lower Nam Phao	5	+	+	+	-	-	-
Chengsavang	Khamkeut	Lower Nam Phao	5	+	+	+	-	-	-
Oudom	Khamkeut	Lower Nam Phao	5	+	+	+	-	-	-
Phonpheng	Khamkeut	Upper Nam Phao	5	+	+	+	-	-	-
Sopphouan	Khamkeut	Nam Phouan/Phiat	5	+	+	+	-	-	-
Khammouane	Khamkeut	Nam Phouan/Phiat	5	+	+	+	-	-	-
Phontan	Khamkeut	Nam Kheo	5	+	+	+	-	-	-
Nongxong	Khamkeut	Nam Ngoy	5	+	+	+	-	-	-
Nakham	Khamkeut	Nam Ngoy	5	+	+	+	-	-	-
11	Sub Total Downstream Dam		55						
Songkhone	Nakai	Nam Xod	5	+	+	-	+	+	+
Navang	Nakai	Nam Mone	2	+	+	-	+	+	+
Kaching	Nakai	Nam Mone	3	+	+	-	+	+	+
Vangchang	Nakai	Upstream Nam Theun watershed	5	+	+	-	+	+	+
Xoklek	Nakai	Upstream Nam Theun watershed	5	+	+	-	+	+	+
Poung	Nakai	Upstream Nam Theun watershed	3	+	+	-	+	+	+
Maka	Nakai	Nam Noy		+	+	-	+	+	+
Houaysarn	Nakai	Nam Noy		+	+	-	+	+	+
Vangkhouay	Nakai	Nam Noy		+	+	-	+	+	+
9	Sub Total Upstream Nam Theun watershed		23						
Ban That	Gnommalat	Nam Kathang	5	+	+	+	+	+	+
Nalathuay	Gnommalat	Nam Gnom	5	+	+	+	+	+	+
Nongping	Gnommalat	Nam Gnom	5	+	+	+	+	+	+
Naxok	Gnommalat	Nam Gnom	5	+	+	+	+	+	+
Phathoung	Gnommalat	Nam Phit / Houay Khama	5	+	+	+	+	+	+
Khoksavang	Gnommalat	Nam Phit / Houay Khama	5	+	+	+	+	+	+
6	Total		30						
Dangkang	Mahaxai	Upstream Upper XBF	5	+	+	+	+	+	+
Nakio	Mahaxai	Upstream Upper XBF	5	+	+	+	+	+	+
Mahaxaitai	Mahaxai	Upper XBF	5	+	+	+	+	+	+
Povaneua	Mahaxai	Upper XBF	5	+	+	+	+	+	+
Povatai	Mahaxai	Upper XBF	5	+	+	+	+	+	+
Khamfeuang	Mahaxai	Upper XBF	5	+	+	+	+	+	+
6	Total		30						
Kengpe	Xe Bangfai	Upper XBF	5	+	+	+	+	+	+
Kasee	Xe Bangfai	Middle XBF	5	+	+	+	+	+	+
Veunsananh	Xe Bangfai	Middle XBF	5	+	+	+	+	+	+
Yangkham	Xe Bangfai	Lower XBF 1	5	+	+	+	+	+	+
Hatkhathieng	Xe Bangfai	Lower XBF 1	5	+	+	+	+	+	+
Sang	Xe Bangfai	Middle XBF	5	+	+	+	+	+	+
6	Total		30						
Hatxiengdee	Nongbok	Lower XBF 2	6	+	+	+	+	+	+
Navangneua	Nongbok	Lower XBF 2	5	+	+	+	+	+	+
Hatxaihong	Nongbok	Lower XBF 2	5	+	+	+	+	+	+
3	Total		16						
Beungxe	Xaibouli	Lower XBF 1	5	+	+	+	+	+	+
Thaphoxai	Xaibouli	Lower XBF 3	5	+	+	+	+	+	+
Nasang	Xaibouli	Lower XBF 3	5	+	+	+	+	+	+
Dongmakfai	Xaibouli	Middle XBF	5	+	+	+	+	+	+
Veunsvilai	Xaibouli	Lower XBF 1	5	+	+	+	+	+	+
Beungbouathong	Xaibouli	Lower XBF 2	5	+	+	+	+	+	+
Nonenakhom	Xaibouli	Lower XBF 3	5	+	+	+	+	+	+
7	Total		35						
28	Sub total Downstream Power huose		141						
48	Grand total		219						

Within most of the villages 5 households participate in fish catch monitoring by completing forms that detail actual fish catch. Forms are collected from the households by fish catch monitors. Subsequently these forms are delivered to data entry contractor in Vientiane. These activities are ongoing.

In addition to the monitoring of household fish catch, in each of the 48 villages, fish catch information is collected through (i) village profile meetings, (ii) household interviews (20 households per village), (iii) interviews with fish traders, and (iv) interviews with individuals involved in large scale fisheries, and (v) data collection regarding community fishing activities.

Downstream of Nakai Dam

Downstream of Nakai Dam (Bolikhamxay Province, Khamkeut District) fish catch monitoring is active in 11 villages. During village profile meetings held in Khamkeut District in 2006 a definitive list of 40 villages was made of the villages which may *potentially* be impacted by the NT2 Project. That list has now been amended to 37.

The potential impacts from NT2 on this region may be as following:

- Villagers may catch less fish in Nam Theun as a result of reduce in Nam Theun discharges;
- Villagers may catch less fish in the tributaries as less fish will migrate from Nam Theun up into the tributaries;
- Villagers may catch less or more fish in Nam Xot as a result of disappearance of migrating fish from Nam Theun when the Nakai reservoir will be inundated.

For the 37 villages in Khamkeut District a specific fisheries impact report is in preparation that includes the outcome of the village profile meeting and the actual fish catch monitoring that was carried from May 2006 up till October 2006. This report will be made available in late April or early May 2007.

A critical issue regarding fish catch monitoring in Khamkeut District is the low capacity of Khamkeut District staff in training and supervision of monitoring by participating households. In the coming months NTPC will assess whether an additional fish catch monitoring supervisor, as presently working with LARReC in Vientiane, should be recruited to strengthen the fish catch monitoring team.

During the reporting period, the following activities were undertaken:

- Daily household monitoring continued

Within Khamkeut District there are reported to be approximately 37 ethnic groups. Many of these groups have utilized different names for the same species of fish, as well as for fishing gear. Care must constantly be taken to ensure that the data collected is provided in the Lao language or is translated into Lao.

Upstream of the Nakai Reservoir

In the NBCA (National Biodiversity Conservation Area), upstream of the future Nakai Reservoir, potential impacts by NT2 project may occur, specifically on fish migrating from Nam Theun River up into the tributaries within the NBCA. During the reporting period a second field trip was conducted to conduct profile meetings, provide training and then observe fishing technique. Villages involved during this field visit:

District	Impact zone	Riparian/Hinterland	Village	No. hh Monitors
Nakai	Nam Xot	Riparian	Songkhone	4
	Nam Mone	Riparian	Navang	2
		Riparian	Kaching	3
	Nam Theun	Riparian	Vangchang	5
		Riparian	Xoklek	5
		Riparian	Puong	3
Total		Riparian	6	22

A critical issue is access to the villages in the NBCA. To collect the forms filled in by households at each village may take a supervisor an unreasonable amount of time to travel by foot and by boat. By assigning at each of the villages a separate supervisor who can read, write, and supervise participating households, a solution can possibly be found. It is expected that the supervisors can submit the forms to a WMPA official who can bring the forms back to Nakai on a regularly basis.

Similar to other fish catch monitoring areas, villagers often do not know the Lao name of the fish they catch. Often fish catch forms are completed using the Brou language, which will require translation prior to data entry.

Downstream of NT2 Regulating Dam

The fish catch monitoring downstream of the regulating pond at 28 villages in Khammouane and Savannakhet Provinces is proceeding according to planning schedule.

Activities undertaken during the reporting period include:

- Profile meetings / village fishery assessments
- Traditional community fishing interviews
- Large scale fishery Interviews
- Fish trader interviews
- Village profile meeting (Group interviews)
- Fish traders interviews
- Large scale fisheries
- Traditional Community Fishing

Database and data entry

Development of the comprehensive fish catch monitoring database continued during the reporting period. Specific activities undertaken include:

- Correction of mistakes regarding fish species names;

The data entry contractor is now working on data entry for two FCM forms:

- Daily hh monitoring forms,
- Individual hh interviews forms,

All other interview forms will be entered into the database through the new part-time staff recruited through the RMU.

2.4.10 Photographs



Tilapia Fish - Khamfeuang community pond community pond



New pond construction in Mahaxai district



Village fund activities

Environmental Activities

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, Camp Followers water quality monitoring reported in section 2.1.3, and the PCR activities reported in section 2.1.1, activities and involvement of the Environmental Management Office in May 07 have included the following:

- Exportation certificate processing to ship fish specimens for aquatic habitats baseline.
- Ongoing activities for the baseline wildlife survey, and wildlife management and monitoring plan.
- Ongoing Interim Human Elephant Conflict (HEC) monitoring.
- Review of the Elephant Program Phase I Final Report submitted by WCS. Finalization of contractual activities with WCS for Elephant Program Phase II.
- Commencement of dyke vegetation activities, and continued survey and construction activities, for the interim wetlands.
- Review of the Environmental Education Syllabus submitted and commencement of education activities.
- Continued development of the wildlife rescue under the Transitional Strategy.
- Water quality sampling and analysis.

3.2 Wildlife Programs

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

3.2.1 Fish Impacts in upstream and downstream river species

The baseline fish/aquatic species and habitat inventory report was finalized in September 2006.

Activities during May 2007 include:

- Processing the exportation certificate to ship fish specimens from the supplementary survey to ichthyologist for identification.

3.2.2 Wildlife Management and Monitoring Program

Given overlaps in baseline survey and management activities, the Terrestrial and Wetland Programs, which are presented separately in the CA, have been combined into one Wildlife Management and Monitoring Program. The program will be conducted in two phases:

1. Phase I includes (i) the pre-impoundment species and habitat inventories, (ii) development of a post-impoundment species management program, and
2. Phase II includes implementing part of the management plan and training the appropriate GOL agency to implement the remainder of the management plan.

Phase I

Activities commenced on 30 September 2006 and the baseline survey and wildlife management plan are scheduled to be submitted on 31 July 2007.

Activities during May 2007 include:

- Ongoing baseline survey and management planning activities. Contractor's Progress Report has been reviewed by NTPC.
- With the exception of the large mammal camera trapping survey which is still ongoing, the field surveying component is now complete and the team of wildlife specialists are focusing on reporting the results of the baseline surveys and developing the management plan.

- The wetland ecologist and the botanist completed their baseline survey of the wetlands. The team provided some technical assistance on the vegetation (species, location of stock, transplantation methodologies, timing, etc.) of the interim wetlands currently being constructed above Full Supply Level by consultants.
- The wetland survey identified two areas of potential conservation importance. One area consists of a sphagnum bog which is located in the inundation area, and a transplantation plan has been developed. The other area consists of a stand of Cyprus conifers, the location of which in relation to FSL needs to be confirmed by a survey team.
- A rattan species (*Calamus kingianus*) thought to be endemic to the inundation area was identified in several areas outside the zone of impact. Specimens have been collected and will be submitted to various herbariums.
- A wildlife specialist was based in Nakai during May 2007 and commenced the consolidation of the management plan which required inputs from EMO, RMO, and WMPA.

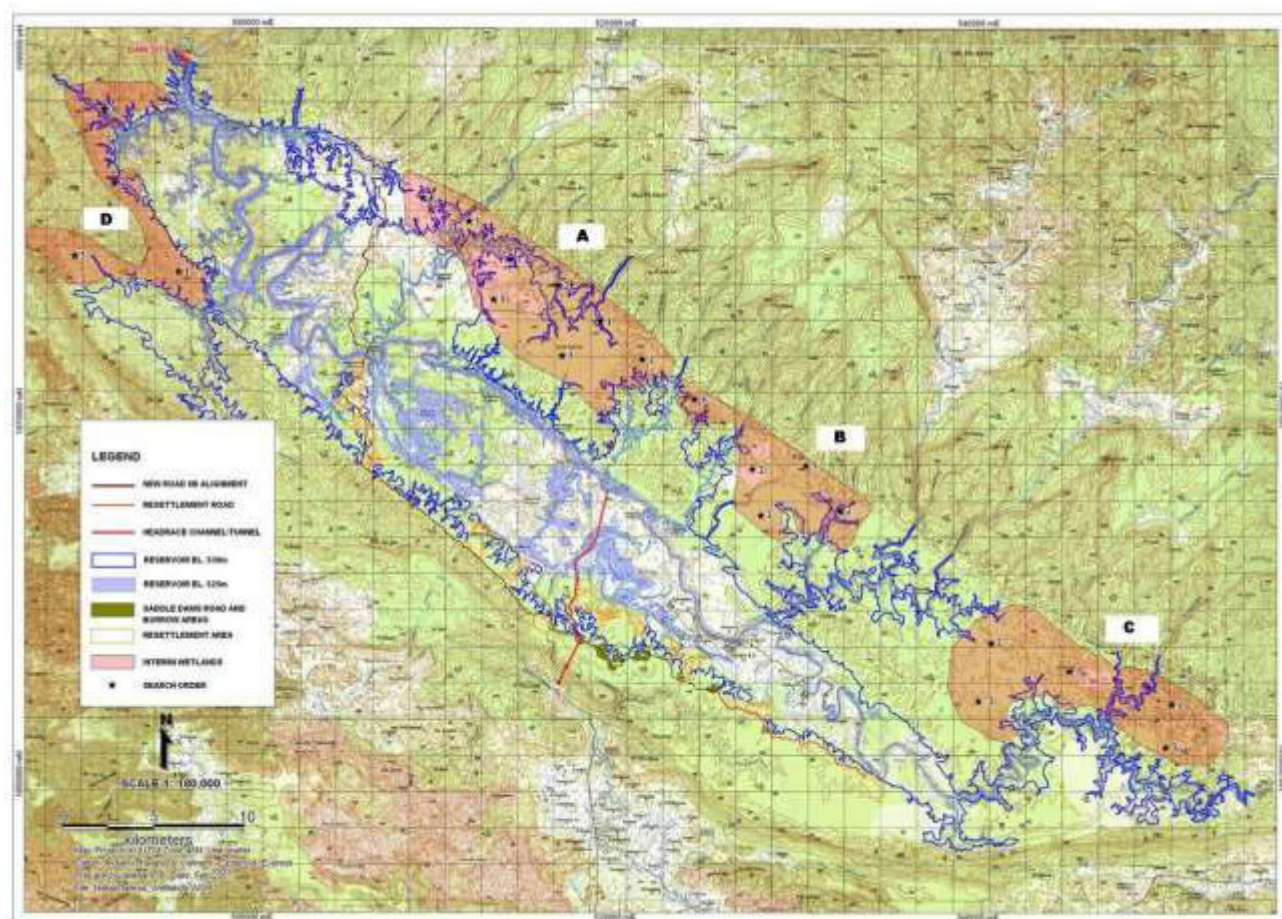
Phase II

Activities in May 2007 include:

- Continuation of survey, UXO clearing, and construction activities for the interim wetlands. These habitats are being established above FSL to act as a buffer for impacts that inundation will have on existing wetlands on the Nakai Plateau.
- A wetland ecologist and botanist provide technical input to help with the vegetation of the compacted earthen dykes. A plan has been developed for the vegetation of the main body of the interim wetlands (see Phase I above).

Zone	Interim Wetland Activities (responsible party)					
	Survey (Contractors)	Design* (Contractor)	Approval (WMPA)	UXO Clearing (Contractor)	Construction (Contractor)	Dyke Vegetation (Contractor)
Zone A	9	7	7	7	6	6
Zone B	10	8	8	8	2	
Zone C	5	3				
Zone D	Ongoing					
Total	24	18	15	15	8	6
Target	30	30	30	30	30	30

* Some surveyed sites rejected during the design and review phase



Locations of the interim wetlands zones





Examples of the compacted earthen dykes (top left and right) being constructed for the interim wetlands and their vegetation (bottom left and right)

3.2.3 Asian Elephant Program

1. Pre-impoundment inventory and survey of habitats, distribution, movements.
2. Implementation of a pre-Reservoir impoundment elephant management program.
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 program.

Phase I of the Elephant Program was conducted by Wildlife Conservation Society (WCS) and includes items 1, 4 and 5 above. A population of 142 (95% CI=97,207) individuals has been estimated based on the line transect and dung decay data. A population estimate of 132 (95% CI= 120, 149) individuals has been estimated based on the DNA analysis. The DNA-based population estimate has been revised from a preliminary estimate of 146 individuals because correction needed to be made for the number and length of the sampling periods. .

NTPC is in the final stages of contract negotiations with WCS to conduct Phase II. Objectives of Phase II include development and implementation of a pre- and post-inundation elephant management plan. Management activities will include the continuation of HEC monitoring and training villagers in passive and active crop protection measures.

Activities during May 2007 include:

- NTPC has reviewed the draft Phase I Final Report which was submitted on 30 April 2007, and provided WCS with comments. The report is required to include a financial assessment of the extent of HEC on the Nakai Plateau.
- Finalization of contractual activities for Phase II. Contractual issues have been agreed upon and Phase II activities are expected to commence on 18 June 2007, with the completion of interim HEC monitoring scheduled for 14 June 2007.
- Between the end of Phase I and commencement of Phase II, HEC monitoring is continuing to assess the spatial and temporal distribution of HEC on the Nakai Plateau and surrounding areas. Recorded HEC incidents are tabulated below:

Month	HEC Incidents
Jul 06	3
Aug 06	10
Sep 06	18
Oct 06	6
Nov 06	51
Dec 06	9
Jan 07	5
Feb 07	6
Mar 07	10 ^[1]
Apr 07	1 ^[1]
May 07	1

^[1] WCS revised the data

3.2.4 Transitional Strategy for Reservoir Impoundment

This program includes the following activities:

1. Development of a transitional strategy for reservoir impoundment.
2. Training of local authorities in wildlife emergency response.
3. Establishment and implementation of an emergency response team.
4. Public awareness program.
5. Prevention and prohibition of wildlife trade (GOL).

The requirement to provide recommendations on the transitional strategy has been included in the Wildlife Management and Monitoring Program.

Activities during May 2007 include:

- The contractor, via the Wildlife Management and Monitoring Program, continued to develop the wildlife rescue plan which included discussions with the WMPA on formulating the animal rescue plan and guidelines for releasing rescued animals into the NPA. The contractor's animal rescue specialist has reviewed the predictions of flooding for the 2007 wet season and has confirmed that there will be no acute animal rescue issues, but has recommend that the wet season be used to provide some training. The contractor will submit an advance draft of the animal rescue plan prior to the reporting deadline of 31 July 2007 for the Wildlife Management and Monitoring Plan.
- The EMU has identified the need for GOL to be responsible for control and enforcement of wildlife protection and prevention of wildlife trade. The EMU has met with the RMU and WMPA to coordinate on issues such as illegal wildlife trade. Refer to section 3.4.
- NTPC has reviewed and provided contractor with comments on the Environmental Education Program (i) Main Environmental Education Issue; and (ii) Environmental Education Syllabus. The Environmental Education Syllabus was also reviewed by one of the contractor's wildlife specialist to comment on the appropriateness of the materials and message.
- The contractor has commenced education activities for the six target groups on the Nakai Plateau. Activities for May 2007 are summarized in the table below:

May 07	Target Audience					
	Schools	Construction Worker Camps	Resettlers villages	Polices officers	GoL officers	NTPC's Drivers
22						12
24	Ban Done		Ban Done			
26		Ban Done				
28	Phonephanpek					
Total to Date	2	1	1	0	0	12
Target	15	24	15	60	-	40



Environmental education in the school (top left and right) and village (bottom left and right) of Ban Done.

3.2.5 Adaptive Management Programs

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

1. Wildlife Program (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

No special comment for this reporting period.

3.3 Water Quality Monitoring and Assessment Program

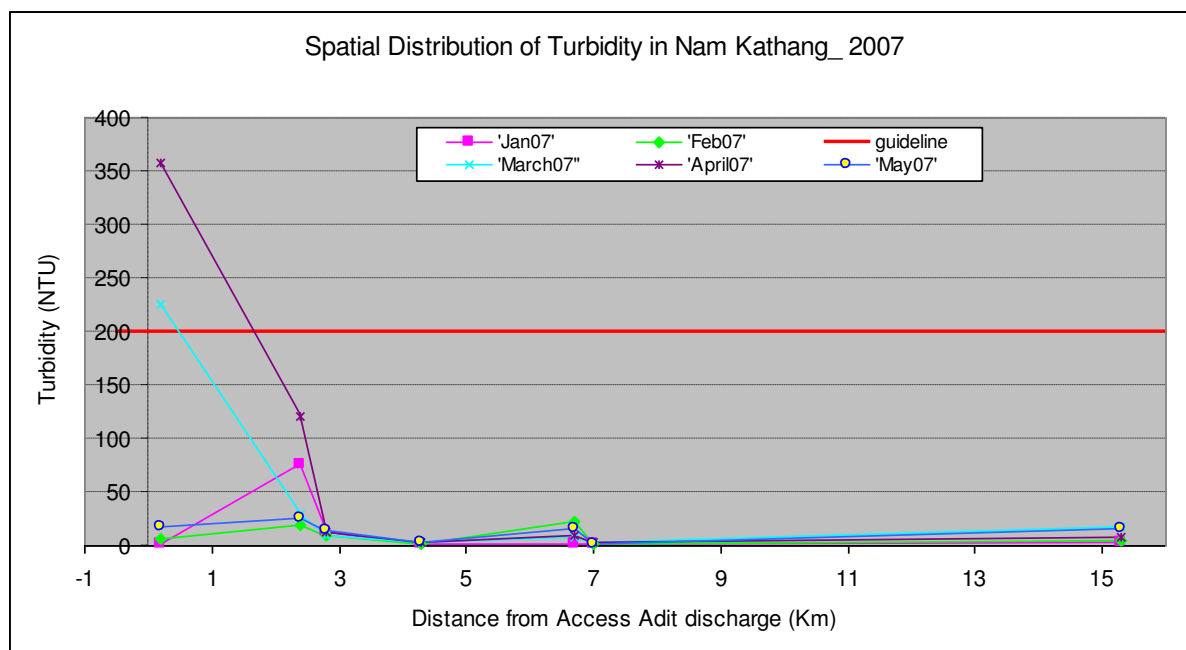
The WQMAP included the following monitoring:

- 25 parameters on a monthly basis and 7 parameters on a weekly basis at 17¹ Surface Water sampling sites. These are located upstream and downstream of construction areas on the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit, and Xe Bangfai. Given the potential for increases in Project-generated sediment load, the spatial distribution of turbidity was monitored at 7 surface water sites and at 6 construction site discharges along the Nam Kathang.
- 17 parameters on a quarterly basis and TSS on a monthly basis for construction and construction camp discharges, 27 parameters on either a semi-annual basis for leachate and landfill observation wells, and 23 parameters on an annual basis for HC/CC potable water.
- 12 physio-chemical parameters at 15 Resettlers and Project Lands Groundwater sampling site on a quarterly basis. One bacteriological parameter at 39 Resettlers and Project Lands Groundwater sampling sites on a monthly basis. These are new groundwater installations located on the Nakai Plateau that have been provided by NTPC.
- 12 physio-chemical parameters and one bacteriological parameter at 13 Community Groundwater sampling sites on a quarterly basis. These are groundwater installations already owned by the community in the Project area.
- One bacteriological parameter at 15 Public Health Groundwater sampling sites on a quarterly basis. These are restaurants associated with camp followers.

Field Observations - May 2007

- The major field observations and measurements are as follows: The turbidity in the Nam Kathang has improved when compared to the previous month and remains within the previous¹ guideline. This reflects the intermittent nature of rainfall events during the transitional period between dry season and wet season. There was no rain prior to the May 2007 sampling event and therefore a decrease in surface runoff from cleared construction areas.
- Turbidity levels are within the Project guideline for the entire length of the upper Nam Kathang from the Power House to Ban Gnommalat.
- Discharge from Saddle Dam 12b construction site was 50 NTU.
- There was no discharge from the Access Adit Platform 415 sedimentation basins during sampling.
- Discharge from the Power House was 22 NTU.
- During the sampling event there were no discharges down the Nakai escarpment from the Headrace Channel or Intake Structure construction areas.
-
- During the sampling event there was no discharge from the Headrace Channel to the wetland area adjacent to Ban Phonphanpek.

¹ NTPC monitors turbidity as a relative indicator whereas turbidity has been replaced with TSS in the Project Water Quality Guidelines for surface water quality monitoring for the HC/CC.



Turbidity Sampling
sites

May 2007 Water Quality Results

The laboratory results for May 2007 will be presented in the June 2007 monthly progress report.

The laboratory analytical results for March 2007 are presented in the tables below. As a screening procedure, the results have been compared with Project guidelines. Values highlighted in yellow represent exceedences.

Comparison of measured values with guidelines is intended as an initial screening step to assist in data interpretation.

Exceedences are then considered on a site-specific basis to assess whether a measured value poses an environmental or human health risk. The significant project-related exceedences are discussed below and are highlighted in the tables following.

Nam Theun

- The water quality in the Nam Theun continues to be considered as good with no exceedences of the Project Water Quality Guidelines ("Guidelines").

Nam Kathang

- No flow in the upstream control site (SW4).
- With the exception of pH and faecal coliform, the water quality in the Nam Kathang can be considered good with few significant exceedences of the Guidelines.
- pH exceeds the Guideline downstream of the Regulating Dam (SW9). Although no discharge data is available for April 2007, the likely source of this elevation is discharge from the Platform 1 concrete batch plants. The WHO suggests that a pH greater than 8.0 would markedly impair the potability of water. Extreme pH (>11 or <4) can cause irritation of the eyes, skin and mucous membranes. The observed pH remained within this range and should not have any health implications.
- Alkalinity exceeds the Guideline in lower Nam Kathang (SW14). The likely source is a higher proportion of groundwater, from a limestone dominated catchment, in surface water flow. The sharp increase at SW14 is a result of the Nam Gnom inputs. The measured levels are not deemed to pose a risk to human health.
- Potassium exceeds the Guideline at SW5 and SW9 on the Nam Kathang. It is likely that elevated potassium is being sourced from mineral solution in groundwater. There is no health-based drinking water guideline for potassium and therefore the measured level is not deemed to pose a risk to human health.
- Faecal coliform exceeds the Guideline downstream of RNT (SW9) and in the lower Nam Kathang (SW14). Effluent from construction camps is likely contributing to the levels measured at SW9. However, given that there are no construction sites or camps located on the Nam Kathang between SW9 and SW14, the sharp increase at SW14 is not deemed to be Project-related. Faecal coliforms are indicators of the bacteria and pathogen load in the water which could pose a risk to human health. It is recommended that these communities should continue with the practice of boiling water prior to consumption.

Nam Gnom

- With the exception of faecal coliform, the water quality in the Nam Gnom continues to be considered as good with few significant exceedences of the Guidelines.
- pH slightly exceeds the Guideline at SW12. The likely source of this elevation is an increase in the proportion of groundwater, from the limestone karsts which surround the Nam Gnom catchment, in surface water flow
- Alkalinity and calcium both exceed their respective Guidelines at the upstream control (SW11), and are not deemed to be Project-related. High calcium and alkalinity are likely a result of an increase in the proportion of groundwater in surface water flow.
- Faecal coliform exceeds the Guideline at both SW11 and SW12. Given that elevated levels were recorded in the upstream control, the source of these faecal coliform are not deemed to be Project-related but rather poor sanitation infrastructure and livestock of Ban Thod. The human health implications are discussed above.

Nam Phit

- No flow in the upstream control site (SW13).
- The analytical results indicate that construction activities are having a significant impact on the water quality of the Nam Phit, with high total suspended solids and associated total iron.
- Consistent with field observations, total suspended solids and turbidity both exceed their respective Guidelines. Although there is no upstream comparison, the likely source of these elevations is sediment laden runoff from the cleared construction areas surrounding the lower Downstream Channel which constitutes the Nam Phit. From an environmental health perspective, a high sediment load would have a negative effect on the primary productivity and could subsequently impact fish production. Suspended solids may have several sub-lethal effects on fish which may also result in a negative impact on productivity. From a human health perspective, the measured levels can make water less palatable and sediment can also act as a substrate for bacteria growth and absorption of metal ions.
- Alkalinity and calcium both exceed their Guidelines at the downstream site (SW6). The source is likely to be similar to the Nam Gnom rather than Project-related. There is no health-based WHO drinking water guideline for alkalinity or calcium and therefore the measured levels are not deemed to be significant.

- Total iron exceeds the Guideline at the downstream site (SW6). Although there is no upstream comparison, consistent with the high suspended solid content, the likely source of this elevation is the Downstream Channel construction activities. For total iron, concentrations of 1-3 mg/l can be acceptable for people to drink but the taste and appearance will usually be affected at these levels.

Xe Bangfai

- The water quality of the Xe Bangfai can be considered as good with few exceedences of the Guidelines.

pH exceeds the Guidelines at SW17. Given that there are no construction activities in the middle Xe Bangfai, the source of the elevation is likely to be groundwater inputs rather than Project-related. The human health implications of elevated pH are discussed above

Resettlers and Project Lands Groundwater

The Resettlers and Project Lands Groundwater monitoring is determining whether groundwater installations provided by NTPC are of an acceptable quality, and also establishing a pre-operations baseline for groundwater.

Faecal coliform results for Resettlers & Project Lands Groundwater are presented below. The implications of exceedences are summarized as follows:

- pH, turbidity, and faecal coliform exceed the Guidelines for some of the Resettlers and Project Lands groundwater supplies.
- pH is lower than the Guideline at numerous RGW sites. The observed values are consistent with dissolved carbon dioxide resulting from precipitation and sub-surface run-off infiltrating through the soil and the presence of naturally occurring humic and fulvic acids. Although the WHO suggests that a pH less than 6.5 would markedly impair the potability of the water, there is no health-based WHO guideline for pH. However, extreme pH values (greater than 11 or less than 4) can cause irritation of the eyes, skin and mucous membranes, and less often gastrointestinal irritation. No adverse human health effects are likely to result of the acidic values measured.
- Turbidity exceeds the Guideline at RGW 34. The human health implications of elevated suspended solids in water are discussed above.
- During collection, the outside of the hand pump spout were sterilized with ethanol prior to sampling to prevent contamination from the hand pump casing itself. Post sterilization faecal coliform levels exceed the Lao standard at RGW 4, 15, 21, 22, 26, 28 and 34. For these sites the source of the contamination appears to be from the groundwater. The human health implications are discussed above.

Community Groundwater

The Community Groundwater monitoring establishes a pre-operations baseline for groundwater already established in the community (i.e., not provided by the Project).

- pH is more acidic than the Lao standard for the majority of groundwater sampling sites. The acidic nature of water reflects the fact that shallow wells are typically recharged from rainwater percolating from the surface and sub-surface run-off, both of which would leach dissolved organic carbon and nutrients from soils. Although the pH of most natural waters is between 6 and 8.5, the observed values are consistent with dissolved carbon dioxide resulting from precipitation and sub-surface run-off infiltrating through the soil and the presence of naturally occurring humic and fulvic acids. In addition, the high bacterial content (see below) and therefore bacterial oxidation will increase the carbon dioxide content and lower the pH. The human health implications are discussed above.
- Turbidity exceeds the Lao standard at GW1, GW3, GW4, GW6, and GW10. Elevated turbidity indicates that the structure of the well may have been compromised and surface runoff containing suspended solids, and possibly other contaminants, have directly entered the well. Although not directly toxic, the measured turbidity may have an adverse effect on drinking water quality, impacting the appearance, color, odor, and taste. Turbidity can also have a significant effect on microbiological quality of drinking water, with increased particulate matter and nutrients stimulating bacterial growth which reflects the higher level of faecal coliform recorded at some of these sites.

- Consistent with low pH and elevated turbidity, iron exceeds the Lao standard at GW1, GW2, and GW4. For GW1 and GW3, the combined increase in turbidity and iron indicates that surface water containing insoluble ferric oxide has entered the groundwater. However, it is also possible that the near anaerobic conditions resulting from bacterial oxidation have reduced insoluble ferric oxide in unlined wells walls to ferrous iron which is soluble under acidic conditions.
- Faecal coliform levels exceed the Lao standard for rural drinking water at the majority of sampling sites. This contamination is likely a result of inadequate well construction and management, with faecal contamination entering from the surface where animal faeces are usually present. The human health implications are discussed above.

Construction Site Discharges

The construction site discharge monitoring is determining whether construction activities are impacting the surface water of the Project area. Analytical results are presented in the table below. The implications of exceedences are summarized as follows:

- pH exceeds the upper range of the proposed² guideline for discharges at the Access Adit. The source of these exceedences is likely to be alkaline groundwater from the conduits, as well as cement waste entering the discharge. The human health implications of extremes in pH are discussed above. The discharge from the Access Adit is deemed a risk to human health.
- TSS exceeds the proposed guideline for the Dam Site (CAD 1) and Downstream Channel Tunnel (CAD 7) discharges. The environmental and human health implications are discussed above.
- Consistent with elevated TSS, total iron exceeds its proposed guideline for the Dam Site (CAD 1) discharge. The human health implications of elevated iron are discussed above.
- Consistent with elevated TSS, aluminium exceeds its proposed guideline for the Dam Site (CAD 1) discharge. Given that the HC is not using PACI for chemically assisted sedimentation, the likely source of the elevation is from sediment laden discharge from the coffer dams. In terms of human health, the measured value exceeds the WHO recommended guideline of 0.2 mg/L which is based on aesthetics and potential concerns about neurotoxicity. However, the WHO also suggests that there is little indication of orally ingested aluminium being acutely toxic to humans. The WQMAP will continue to monitor whether the elevation continues.

Construction Camp Discharges

The construction camp discharge monitoring is determining whether construction camp activities are impacting the surface water of the Project area. Analytical results are presented in the table below. The implications of exceedences are summarized as follows:

- TSS exceeds the proposed guideline in the effluent of two of the Nakai Dam Camp trickle filters (CAMP 1 & CAMP 2). The environmental and human health implications are discussed above.
- Ammonia exceeds its proposed guideline in the effluent from one of the Nakai Dam Camp trickle filters (CAMP 3) and the discharge from Oudomsouk camp (CAMP 4). The likely source is septic waste contamination in the grey water system, either as urine or faecal organic nitrogen which is subsequently decomposed into ammonia. Ammonia is extremely toxic to fish. In addition to direct toxicity, oxidation of ammonia can reduce the oxygen content in surface water and impact aquatic life. Coupled with any increases in phosphorous, increased nitrogen-based nutrients may stimulate excessive algal and macrophyte growth which may result in detrimental effects after their decomposition.
- Nitrate exceeds its proposed guideline in the RNT camp discharge (CAMP 6) from the waste water treatment facility. The environmental implications of increased nitrogen-nutrients are discussed above. From a human health perspective, the observed levels of nitrate is above the WHO guideline (50 mg/L) for nitrate to protect bottle-fed infants from methemoglobinemia, and poses a threat to human health.

² Project Water Quality Guidelines for construction site discharges have not yet been agreed by NTPC.

- Oil and grease exceeds the proposed guideline in the effluent of two of the Nakai Dam Camp trickle filters (CAMP1 & CAMP 2). The source of the oil and grease is likely to be the restaurants, and possibly petroleum contamination of the grey water systems. High oil and grease content may be adversely affecting the trickle filters through coating the biological solids and interfering with oxygen transfer. Contamination with oil and grease can make water significantly less palatable.
- Total Phosphorous exceeds the proposed guideline in the effluent for one of the Nakai Dam Camp trickle filters (CAMP 3). The source of the elevation is likely to be polyphosphates from detergents, or septic contamination, in the grey water system. From an environmental perspective, phosphorous is usually the limiting factor for productivity in freshwater ecosystems. Any anthropogenic increase may result in an increase in productivity and a subsequent decrease in dissolved oxygen when primary producers eventually die and decompose.
- Coupled with elevated ammonia, total phosphorous, and oil and grease, BOD and COD exceed their proposed guidelines in the effluent for two of the Nakai Dam Camp trickle filters. The source of the elevated BOD and COD is high organic matter content of the camp discharge, with contributions from ammonia and oil and grease. High BOD may result in oxygen depletion in the receiving water body. Although COD also measures those organic compounds not readily oxidized by biological action, a high COD may also result in a decrease in dissolved oxygen in the surface water downstream of the discharge.
- Faecal coliforms exceed the proposed guideline in all camp discharges, except RNT (CAMP 6). The source of these exceedences is likely to be septic waste entering the grey water system of the camps. The human health implications are discussed above.

Table 3.2: April 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bangfai.

Parameter	Unit	WQ Guidelines	River-Specific Guideline	Nam Theun			
				SW 1	SW 2	SW3	SW 18
Sampling Date				7/4/2007	7/4/2007	6/4/2007	6/4/2007
Sampling Time				12.40 h	10.55 h	10.15 h	09.55 h
Water Depth	(m)			0.8	1.5	*	*
Sampling Method				grab	grab	grab	grab
Air Temperature	(°C)			22.2	23.8	23.8	23.7
Cloud Coverage				8	20	5	5
Water Temperature	(°C)			23.7	25.4	26.5	26.8
pH		6.0-8.0		7.19	7.06	6.93	7.04
DO	(mg/L)	> 5.0		8.29	7.76	7.75	7.58
% DO Saturation	(%)			103.3	98.5	101.6	99.2
Conductivity	(µS/cm)	< 350 or <750 *		-	-	-	-
Turbidity	(NTU)	< 200		5.9	3.47	3.54	2.94
Total suspended solids	(mg/L)	< 40 or <80*		1.5	3.2	2.1	2.2
Alkalinity	(mg/L)	- ¹¹	36.26	32.1	28.1	28.5	27.7
Ammonia-nitrogen	(mg/L)	< 0.5		0.192	0.086	0.072	0.074
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		0.036	0.036	0.049	0.052
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		ND	0.001	0.002	0.004
Potassium (K)	(mg/L)	- ¹¹	1.072	0.6	0.578	0.54	0.546
Sodium (Na)	(mg/L)	300		2.2	2.24	1.96	1.69
Manganese (Mn)	(mg/L)	< 0.5		0.024	0.03	0.038	0.032
Total iron (Fe)	(mg/L)	< 1.0		0.342	0.352	0.31	0.341
Lead (Pb)	(mg/L)	< 0.05		ND	ND	ND	0.029
Calcium (Ca)	(mg/L)	50		4.35	3.7	4.2	4.25
Magnesium (Mg)	(mg/L)	< 15		1.19	1.14	1.09	1.14
Sulphate (SO ₄ ²⁻)	(mg/L)	< 500		3.68	4.38	3.98	3.88
Chloride (Cl ⁻)	(mg/L)	< 250		1.54	1.74	1.35	1.93
BOD	(mg/L)	< 15		ND	0.8	0.8	1.1
COD	(mg/L)	< 40		28.9	16.1	ND	9.64
Total phosphorus	(mg/L)	< 0.2		0.189	0.087	0.061	0.058
Faecal Coliform	(C/100mL)	150		36	64	19	12

- conductivity meter not working

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

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

Table 3.2 (Cont'd): April 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bangfai.

Parameter	Unit	WQ Guidelines	River- Specific Guideline	Nam Phit	
				SW 13	SW 6
Sampling Date					3/4/2007
Sampling Time					13.00 h
Water Depth	(m)				0.9
Sampling Method					grab
Air Temperature	(°C)				30.1
Cloud coverage				N	60
Water Temperature	(°C)			O	26.6
pH		6.0-8.0			7.23
DO	(mg/L)	> 5.0		W	5.53
% DO Saturation	(%)			A	70.8
Conductivity	(µS/cm)	< 350 or <750 *		T	-
Turbidity	(NTU)	< 200		E	500
Total suspended solids	(mg/L)	< 40 or <80*		R	287
Alkalinity	(mg/L)	- ¹¹	198.2		200
Ammonia-nitrogen (NH ₃ -N)	(mg/L)	< 0.5		S	0.174
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		A	0.934
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		M	0.057
Potassium (K)	(mg/L)	- ¹¹	0.7288	P	0.318
Sodium (Na)	(mg/L)	300		L	0.68
Manganese (Mn)	(mg/L)	< 0.5		E	0.194
Total iron (Fe)	(mg/L)	< 1.0			9.53
Lead (Pb)	(mg/L)	< 0.05			ND
Calcium (Ca)	(mg/L)	50			50.2
Magnesium (Mg)	(mg/L)	< 15			5.4
Sulphate (SO ₄ ²⁻)	(mg/L)	< 500			9.82
Chloride (Cl ⁻)	(mg/L)	< 250			0.96
BOD	(mg/L)	< 15			1.4
COD	(mg/L)	< 40			19.6
Total phosphorus	(mg/L)	< 0.2			0.022
Faecal Coliform	(C/100mL)	150			77

- conductivity meter not working

River- Specific Guideline	Xe Bangfai			
	SW7	SW8	SW16	SW 17
	3/4/2007	3/4/2007	5/4/2007	5/4/2007
	11.20 h	14.15 h	12.30 h	13.55 h
	0.7	*	2	0.7
	grab	grab	grab	grab
	29.7	29	27	27
	75	20	90	50
	32	30.1	29.8	29.4
	7.84	7.94	7.97	8.1
	8.01	7.75	8.07	7.76
	105.6	106.8	107.2	102.5
	-	-	-	-
	3.12	7.44	2.88	14.7
	2.2	3.6	2	10.6
198.2	190	187	188	177
	0.068	0.074	0.026	0.026
	ND	0.006	0.027	0.029
	ND	0.006	ND	ND
0.7288	0.365	0.308	0.254	0.368
	1.1	1.03	0.94	0.92
	0.046	0.038	0.032	0.034
	0.132	0.276	0.044	0.373
	ND	ND	ND	ND
	46.6	45.3	46.2	42.1
	3.69	3.94	4.49	5.04
	4.48	3.88	3.58	3.49
	0.58	1.54	1.16	1.54
	1.2	0.9	0.8	1
	9.78	8.14	ND	ND
	0.016	0.035	0.038	0.07
	32	43	11	24

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

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

Table: April 2007 Resettler's & Project Lands Groundwater Faecal Coliform Results

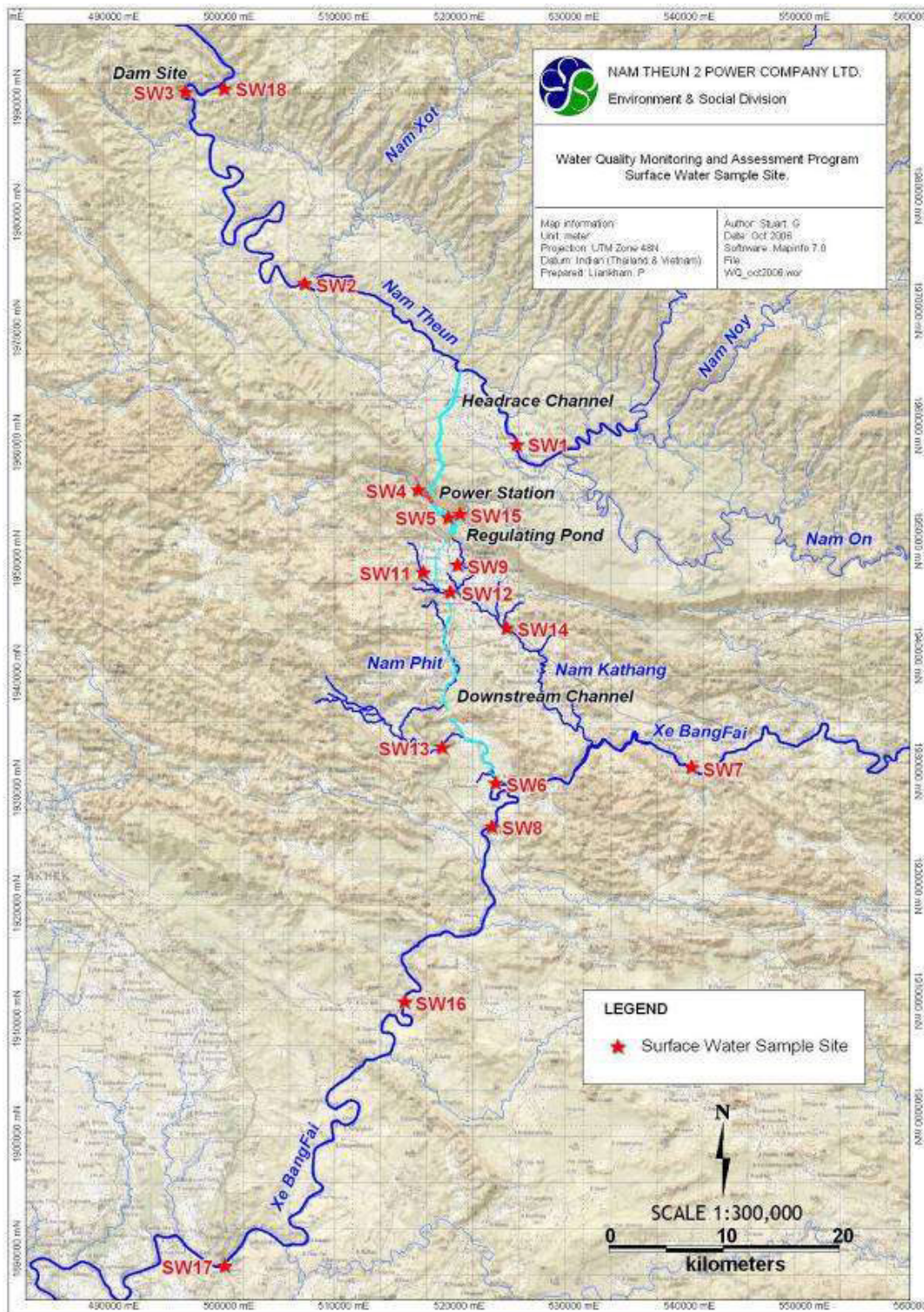
Date	Location	Faecal Coliform result	WQ guideline
Ban Oudomsouk			
08/4/07	RGW1	0	0
08/4/07	RGW28	1	0
09/4/07	RGW39	0	0
Ban Oudomsouk mai			
03/4/07	RGW2	0	0
03/4/07	RGW9	0	0
03/4/07	RGW27	0	0
09/4/07	RGW38	0	0
School			
09/4/07	RGW3	0	0
Ban Phonephanpek			
09/4/07	RGW4	6	0
09/4/07	RGW29	0	0
09/4/07	RGW37	0	0
Ban Nongboua			
09/4/07	RGW5	0	0
09/4/07	RGW30	0	0
09/4/07	RGW33 after filter	0	0
Ban Bouama			
09/4/07	RGW6	0	0
09/4/07	RGW22	2	0
09/4/07	RGW23	0	0
Ban Phonsavang			
09/4/07	RGW7	0	0
09/4/07	RGW20	0	0
09/4/07	RGW21	9	0
09/4/07	RGW34	1	0
Ban SopOn			
09/4/07	RGW8	0	0
09/4/07	RGW10	0	0
09/4/07	RGW18	0	0
09/4/07	RGW19	0	0
Ban Done			
09/4/07	RGW11	0	0
09/4/07	RGW12	0	0
09/4/07	RGW16	0	0
09/4/07	RGW17	0	0
Ban Sop Phene			
07/4/07	RGW13	0	0
07/4/07	RGW32. from Pump	0	0
Ban Sophia			
07/4/07	RGW14	0	0
07/4/07	RGW24	0	0
07/4/07	RGW25	0	0
Ban SopMa			
07/4/07	RGW15	11	0
07/4/07	RGW26	18	0

Date	Location	Faecal Coliform result	WQ guideline
07/4/07	RGW36	0	0
Ban Khone Kaen			
09/4/07	RGW31. from Pump	0	0
09/4/07	RGW35	0	0
	Bottle blank	0	0
	Field blank	0	0

Table: April 2007 Construction Site Discharge

Parameter	Unit	Project	Dam Site	Headrace	Intake	Access Adit	Powerhouse	Regulating Dam	DC Tunnel
		Guideline	CAD 1	CAD 2	CAD 3	CAD 4	CAD 5	CAD 6	CAD 7
Sampling Date			06/04/07		07/04/07	04/04/07	04/04/07	05/04/07	03/04/07
Sampling Time			10.45 h		11.45 h	08.42 h	09.00 h	08.51 h	12.15 h
Water Depth	(m)		0.1	N	0.2	0.15	-	0.2	-
Sampling Method			grab	O	grab	grab	grab	grab	grab
Air Temperature	(°C)		24.6		23.6	19.7	22.2	23.1	32.1
Water Temperature	(°C)	<40	24.5	D	25.0	21.0	24.4	24.7	24.9
pH		6.0 - 9.5	9.26	I	7.97	11.10	7.73	8.07	7.37
DO	(mg/L)		8.45	S	7.29	8.19	8.31	8.45	6.11
% DO Saturation	(%)		105.9	C	93.8	95.3	100.2	120.6	74.9
Conductivity	(µS/cm)	<3500	-	H	-	-	-	-	-
Turbidity	(NTU)		233	A	33.8	31.1	14.0	41.9	102.8
Total suspended solids	(mg/L)	<40	225	R	18.6	28.6	5.0	31.5	90.4
Ammonia-nitrogen(NH ₃ -N)	(mg/L)	<4	0.070	G	0.062	0.100	0.066	0.070	0.098
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	<30	0.050	E	1.38	0.149	1.07	0.017	0.443
Aluminium (Al)	(mg/L)	<2.	3.57		0.620	0.670	0.116	0.870	1.52
Total iron (Fe)	(mg/L)	<2	4.63		0.455	0.270	0.070	0.414	1.33
Sulphate (SO ₄ ⁻²)	(mg/L)	<1000	11.0		8.73	63.8	212	19.8	3.58
Oil and Grease	(mg/L)	<5	ND		ND	ND	ND	ND	ND
BOD	(mg/L)	<30	0.9		9.4	1.2	1.1	1.5	0.6
COD	(mg/L)	<130	3.21		14.5	ND	ND	ND	11.3
Total phosphorus	(mg/L)	<10	0.032		0.112	0.115	0.064	0.080	ND

Table: Resettler's & Project Lands Groundwater Faecal Coliform Results



3.4 Environment Management Unit (EMU) Technical Assistance (TA)

Activities undertaken by the EMU and EMU TA during May 2007 are presented in the Work Plan below and also include:

- Submission of fourth Quarterly Progress Report by ESL.
- NTPC review of the third and fourth Quarterly Progress Report.
- EMU personnel continue to accompany EMO Inspectors on joint site inspections, alternating personnel from EMU Khammouane and EMU Bolikhamxay. Details of the construction areas inspected by the EMU are provided in Part B, Section 1.2 (*Environment Protection*) of this Report.

CA Ref No.	Activity
Carried over from the Third Quarter	
NA	Request assistance from GOL Engineer for occasional spot checks of environmentally-related project infrastructure.
8 / 19	Continue to consult with the NTPC regarding establishment of adaptive management committees for the riparian releases into the Nam Theun River and to oversee the implementation and review the effectiveness of the wildlife program.
18	Continue to consult with WMPA, RMU, district, local enforcement agencies and village authorities regarding the effectiveness of programs to introduce and enforce hunting controls in the Resettlement Areas
20	Confirm with the GOL who are the appropriate agencies to be involved in the public education and awareness program concerning environmental issues, in consultation with the NTPC
30	Follow up on request for inventory of quantities and types of hazardous material used by the Project.
35	Conduct a preliminary municipal waste audit in Lak Sao Consult with the NT2 STEA Committee regarding the development of suitable standards and options for the treatment or disposal of hazardous waste.
36	Follow-up request for NTPC to provide a routine report on progress of landscaping and revegetation activities.
37	Develop strategies for GOL to strengthen capacity to enforce vehicle speed limits.
Every 2 Weeks	
01	Review NTPC water quality monitoring results.
Monthly	
NA	Review NTPC Monthly Progress Reports.
NA	Review HC Monthly Progress Reports.
01	Conduct site inspections to identify existing or potential sources of water contamination.
NA	Consult with district and village level authorities to record environmental grievances. Based on consultation, assess adequacy of NTPC's Grievance Procedures.
May 2007	
NA	No additional activity other than those identified above.

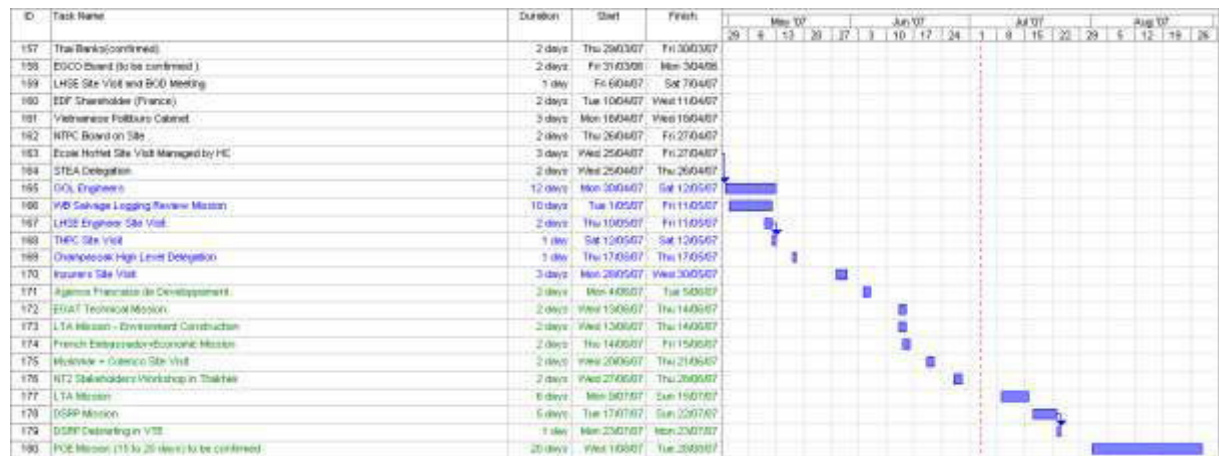
3.5 EMO's activities linked to construction

The environmental activities linked to construction works are part of the Construction Progress Report, Part B of this Monthly Progress Report.

Internal, External Monitoring

4 Internal and External Monitoring

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



GOL Related Activities

5 GOL related activities

5.1 Watershed Management Protection Authority (WMPA)

The WMPA received hi-level delegations from the World Bank and spent some days in preparation for his delegation of 15 people by helicopter to visit a remote village cluster, Ban Navang, within the Watershed Area. The villagers prepared a welcome ceremony for the Vice President and his delegations visit. Also during February, the WMPA separately prepared for another mission by the World Bank which involved taking the technical staff of the World Bank in to the watershed area for a few days. During this technical visit the consultant was able to give further advice to the WMPA. In addition to hosting the site visits, the WMPA commenced work on ground surveys in order to develop the future watershed access strategy.

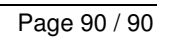
5.2 Optimization of Salvage Logging on the Nakai Plateau

Progress Report on Salvage Logging and Reservoir Sanitation Operations has been released by Ministerial Steering Committee Salvage Logging and Reservoir Sanitation Management Nam Theun II Project.

5.3 Social issues (RMU & DWG)

See social section.

Annexes





Nam Theun 2 Power Company Ltd.

Nam Theun 2 Hydro-Electric Project

**Monthly Progress Report
covering activities in June 2007**

Part C : Environmental & Social Report

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General Overview

1 General Overview

Project lands:

- Replacement house construction in Gnommalat is now almost complete
- Livelihood restoration activities continued
- An update of obstacles within the transmission line corridor was prepared.
- Preparation of a household survey instrument was commenced to support internal monitoring activities
- Technical workshop with DWG, RMU, NTPC and village representatives was conducted on 20 June.

Public Health:

Following major activities were undertaken during June 2007:

- Land leveling in front of the GMLT DH is still a problem and needs urgent attention.
- Power supply to Naxok and Khedphit has been completed.
- 90% of furniture items have been delivered to health facilities, only meeting tables are remaining. Completion of payment of earlier supplied items will hasten the delivery of tables.
- Rehabilitation of MHX DHO is complete.
- Number of training courses held during the month:
 - Two-day training of VHCs, VHVs and TBAs on Acute Respiratory Infections and Diarrheal Diseases in Nakai and Khamkeut Districts on 5-6 June 2007.
 - Counselling training on HIV/AIDS in Khammouane Province on 14-17 June 2007.
- Quarterly meeting among VHCs, VHVs and TBAs at Nongbouakham Health Center on 7 June 2007.
- Medical experts from Swiss Tropical Institute visited the project in view of academic collaboration. Pending publication was finalized.
- HPMU team attended the National Health Promotion Website released by MOH at Lao Plaza in Vientiane (7 June 2007).
- Village Volunteer Peer Educators from Vientiane Province visited the peer education program in Mahaxai and GMLT 19-22 June 2007.
- Meeting with medical expert in Vientiane to discuss nutritional needs of under-five and pregnant women and planning of nutritional survey in the project area. Funding will be considered under IP program.
- Annual Stakeholders Forum preparation and participation, including video production on health program.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) has been analyzed and first draft of the report is expected by 14 July 2007.
- Continue and expand monthly Maternal and Child Health clinics in four districts and prepare the family health files at the same time. So far HPMU have held 474 clinics in 86 villages
- Routine visits to the resettlement villages continued and population health monitored

Nakai Plateau resettlement

Infrastructure:

- Topographic survey and mapping: The ongoing setting out of house and agricultural plots by Resettlement Office personnel is an on-going activity.
- Villages Layout: Essentially complete - no further activity during the month.
- UXO search and clearance: The on-going contract for UXO community awareness and on-call roving response team is still proving successful. In June, 43 UXO items were destroyed. By the end of June the roving units have disposed of 2,143 items including 1,898 bomblets.

- Timber houses: Apart from Oudomsouk Nakai Reservoir PAPs, all the resettlement village house contracts have been signed, a total of 14 contracts. There has been another small increase in supply rate of sawn timber because of the four contracts signed in March with various sawmills. This has resulted with the first 3 VG1 signed contracts nearing completion. The sourcing of the unsecured sawn timber is an ongoing activity, and should reach closure in July 2007.
- Roads and tracks: There are three road construction contracts underway. The two southern VG2 village contract is about 85 % complete. The contract for the Area 7 and Area 13 agricultural area access roads is about 48% complete. The contract for the roads in Areas 1 and 2 is about 50% complete.
- Irrigation: The construction of the irrigation area extension at the Pilot Village for Keng Gnao resettlers is nearly complete with some roadworks and the marking of pipeline routes still outstanding. The bidding documents for the pilot groundwater irrigation area at Sop On are nearly complete.
- Community Buildings: In April four contracts were signed for the construction of 36 community buildings in ten resettlement areas. Apart from the Contractors constructing their Camps and transporting construction materials, there has been limited progress with the constructions because of the wet weather conditions.
- Domestic Water Supply and Sanitation: A total of 183 deep boreholes have been successfully completed out of 210 drilled since the beginning of the operations in December 2005. The total number of failures is 27 for a global rate of about 13%. 159 are now equipped with hand pumps or electric pumps and fully operational.
- Electricity: The design of the resettlement village electrification systems is continuing. The contract for the electrification of Areas 17, 18 and 19 is progressing well. The construction of 3 genset shelters is nearly complete. A contract was signed for the installation of the transmission line to Bouama and the step-down transformer.

Livelihood Plans:

Forestry:

- VFA Board will be held on 27th July 2007.

Agriculture / Livestock:

- Farmers continued to plant rice in the drawdown areas
- Preparation of 0.66 ha field in all villages is now complete, with the exception of Sop Phene and Thalang, where clearance of thick vegetation is on-going.

Fisheries:

Draft reservoir Fisheries Management Program report has been forwarded to GOL for review and endorsement. A meeting of various GOL stakeholders was held in Vientiane in June, in order to plan the way forward, especially regarding the issuing of required decrees relating to (i) reservoir management and (ii) reservoir fisheries.

Community Development:

All households impacted by the reservoir and below 530 have been relocated to a safe location.

Socio-economic data continues to be collected by a team of 17 DWG staff trained (12 more). The data will be useful for both the SRO teams in Nakai, as well as other interested parties, including independent auditors. The CD Team also collected monthly income-expenditure data of each household in each village to monitor their income derived from various sources and from Project support.

Routine institutional development activities continue to be supported through DWG. Training and regular follow up.

Gender issues continue to be regularly monitored and addressed through the Gender mainstreaming teams set up in each unit

Apart from rice and protein support to all resettlers , the CD team is now further developing revolving fund / credit systems in each village to facilitate the investment in off-farm activities. Currently weaving, tailoring, wicker works are ongoing .

Vulnerable households continue to be supported with additional basic needs and suitable incomes activities will be followed soon.

Downstream Program:

- Sanitation awareness training continued in pilot villages
- Agreement reached for NTPC water supply improvement activities in 9 villages
- Fish catch monitoring continued.
- Water level staff gauges were installed in 11 target villages to record wet season water levels
- A 4 day workshop to improve village fund management was conducted with relevant DWG and VDCC members.

Environment:

- Exportation of fish specimens for the supplementary survey of the fish and aquatic habitats baseline.
- Ongoing activities for the baseline wildlife survey, and wildlife management and monitoring plan.
- Completion of the Interim Human-Elephant Conflict (HEC) monitoring.
- Execution of the Elephant Program Phase II contract, and commencement of Phase II activities.
- Continued survey, construction, and vegetation activities for the interim wetlands.
- Continued activities for the Environmental Education.
- Continued development of the wildlife rescue plan under the Transitional Strategy.
- Water quality sampling and analysis.

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

NTPC E&SD Staffing

Legend:

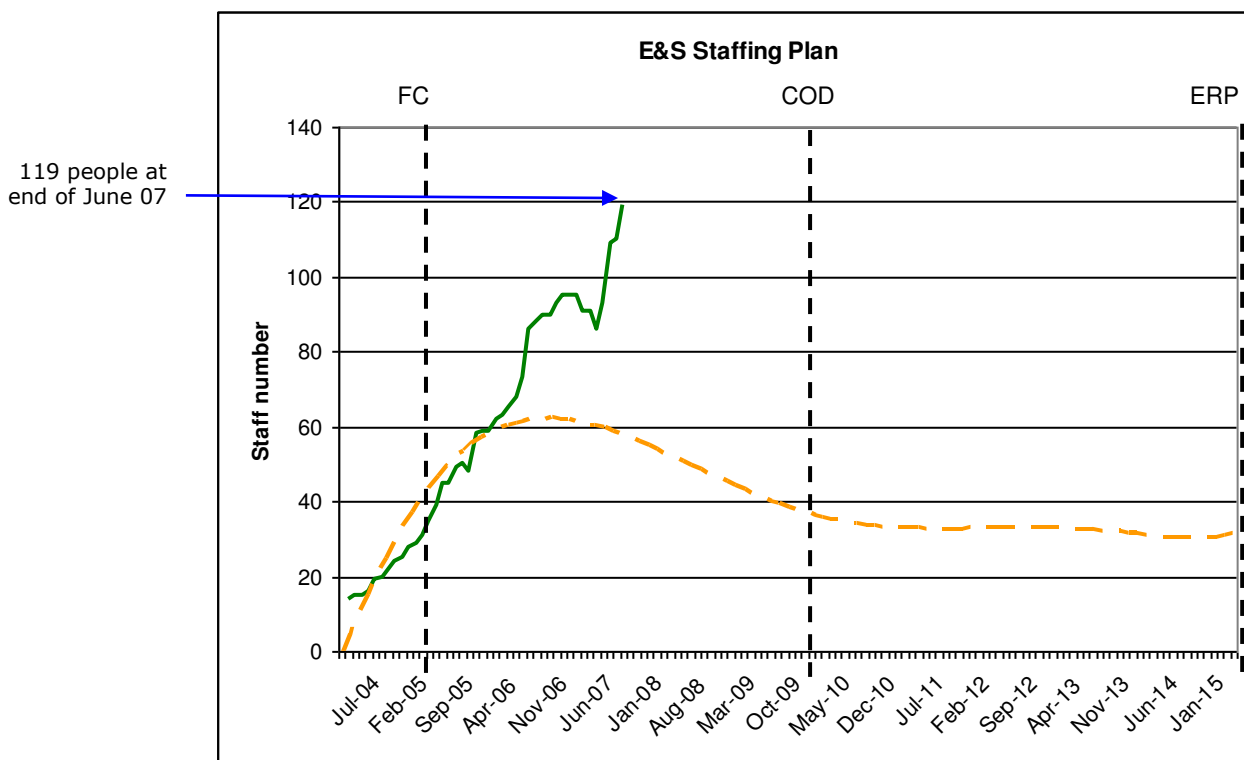
Scheduled staffing plan

Actual staff recruitment

FC = Financial Close

COD = Commercial Operation Date

ERP = End of Resettlement Period



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

Nine new staff joint with E&S. belong Agriculture and Livestock team

The Nakai Residential Complex in Oudomsouk is used by the NTPC E&S team

(complex of 54 rooms/studios/apartments and 6 villas).

EMU Staffing

NT 2 Project Committee responsible for Environment Management Unit has been changed via PM Decision 072 dated 11 January 2007

RMU and DWG Staffing

No change from previous report.

Partners

No change from previous report.

1.2 Unanticipated Project Impacts

No change from previous report.

1.3 Additional Plans and PIP updating

PIP / AIP

No change from previous report.

Additional Plans

No change from previous report.

1.4 Grievance procedure

No change from previous report.

1.5 Communication

No change from previous report.

1.6 Procurement

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

- Procurement process for the construction of machine drilled boreholes for domestic water supply,
- Procurement process for the construction of village group 2 community buildings,
- Procurement process for the construction of timber houses for Oudomsouk areas B and C,
- Award contracts for consultancy services (weaving specialist),
- Award contract for consultancy services (DS Technical assistant – fishery specialist),
- Award contract for consultancy services (Sanitation and hygiene specialist),
- Award contract for consultancy services (Review of the hydraulic study for discharges from the NT2 regulating pond and impact on the Xe Bangfai),

Negotiation process for the IMA DS, IMA PL and IMA Environment

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

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

Movable PCR Plan

No special remarks for this reporting period.

PCR within Construction Areas Plan

No special remarks for this reporting period.

PCR within the Reservoir Plan

To date, IoCR has completed consultation for all resettlement villages and completed management measures for almost all VG1 and VG2 PCR sites.

Activities during June 2007 include:

- IoCR has finalized the report presenting some of the management activities for spirit, cemetery and temple sites for VG2.

PCR along the Xe Bangfai Plan

The plan for PCR along the Xe Bangfai will be implemented in coordination with the Downstream Program. One historic site, five spirit sites and twelve temples are located on the banks. The temple sites were surveyed to prioritize monitoring effort and to identify any requirement for pre-operations management measures (relocation of infrastructure or bank protection).

No special remarks for this reporting period.

Chance Find PCR

No special remarks for this reporting period.

PCR Monitoring

On 30 June 2007, the monthly consultation-based PCR monitoring was undertaken by the EMO. The following table presents the villages and their PCR included under this month's monitoring.

Village	PCR ID	PCR Type	Issue
Khoksavang	PCR/ADJ/52/28	Cultural	No issue
	PCR/ADJ/52/29	Cemetery	No issue
	PCR/ADJ/52/30	Cultural	No issue
	PCR/ADJ/52/35	Territorial spirit	No issue
	PCR/ADJ/52/36	Temple	No issue
Phit sikhay	PCR/ADJ/52/31	Territorial spirit	No issue
	PCR/ADJ/52/32	Temple	No issue
	PCR/ADJ/52/33	Historic	No issue
	PCR/ADJ/52/34	Historic	No issue

2.1.2 Project Lands

Project Lands Status at end of June 2007

		RAPS	1	2	3	4	5
			Khamkheut / Quarry	Oudomsouk	Gnommalath / Mahaxai w/o roads & TL	roads 8 & 12	115& 500kV Transmission Lines
Infrastructures	Relocation of houses	Total number of houses to be rebuilt or relocated	90				~ 95
		Cumulative at end of the month	64				48
		Progress during the month	0				0
		comments	26 relocations out of the 90 done in temporary structures, corresponding permanent structures under construction - should be completed by late July 2007				On time with the TL construction schedule, no issue
	Water supply Boreholes + shallow wells	Total number to be drilled		87			
		Cumulative at end of the month		47			
		Progress during the month		16			
		comments		remaining boreholes scheduled to be completed by September 2007			
	Compensations	impact below 10% : Final compensation (payment in cash)	Number of affected hh < 10%	334			635
			Cumulative HH compensated	291			580
			Done during the month	0			100
			comments	Compensation(payments) are based on the value of land, which was to be provided by GoL. These values were given very late by GoL (dec 2006), and payments are now ongoing.			Identification of PAP is still ongoing, based on the designs provided
		impact above 10%	Transitional compensation	Number of affected hh > 10%	438		
				Interim compensation paid in 05	158		
				Interim compensation paid in 06	420		
				Interim compensation paid in 07	~ 410		
		livelihood restoration	number of hh engaged in livelihood restoration	~321			
			number of hh engaged in livelihood programs	N/A for this month			
			comments	25 hh prefers cash compensation (discussed and agreed with ADB) # of hh engaged in livelihood restoration program being updated.			On RAPs 4 and 5, no hh is impacted more than 10%

Main events in June:

Baseline Studies & data management

The collection of baseline study data is complete. Efforts are ongoing to establish a comprehensive database for all Project Lands activities, separating all information into 7 datasets according to the sector within Project Lands. Database design and compilation of information is underway.

Meetings & Consultations

Coordination meetings with the DCWG and RMU continued during the month of June 2007.

A special meeting was held on 20 June 2007 between representatives from the RMU, DWGs, NTPC, village representatives and district government to 1) obtain feedback from village representatives regarding the Project Land program, 2) to discuss technical issues regarding cash compensation and livelihood restoration. The meeting stressed the importance for NTPC to

- Improve communication with PAHs regarding entitlements, both cash compensation and livelihood restoration
- Clarify NTPC strategy for replacing land
- Continue work with district grievance offices to strengthen grievance procedures
- Organize similar meetings every 3 to 4 months.

Compensation

During the month of June payment of RMU invoice #5 and preparation of Invoice #6 and #6A was completed. A summary of invoice #5, #6 and #6A is as follows:

Type of cash compensation	RAP	# of PAH's	Total Amount (LAK)
Invoice #5			
Interim	3	72	281,453,500
Final	2	61	447,322,000
Final	3	36	944,967,000
Final	5	292	423,688,452
Business Allowance	3	2	54,699,000
Household Asset	3	1	3,460,000
Disturbance Allowance	5	267	39,900,000
Grievance/ Misc.	3	1	90,200,178
Grievance/ Misc.	2	1	57,989,000
Total			2,343,679,130
Invoice #6			
Interim	3	26	83,708,000
Final	1	24	475,770,500
Final	3	140	1,348,061,000
Household Asset	3	11	60,640,000
Disturbance Allowance	3	388	247,800,000
Misc.		-	-
Total			2,215,979,500
Invoice #6A			
Final	5	139	172,999,550
Business Allowance	5	4	24,000,000
Household Asset	5	48	980,000,000
Disturbance Allowance	5	180	33,550,000
Misc.		-	-
Total			1,210,549,550

2.1.2.1 Infrastructure

RAP 2 - Oudomsouk

Delivery of concrete culverts for improving drainage in Oudomsouk was completed in early June. Installation of materials was substantially completed during the reporting period.

RAP3 – Gnommalat & Mahaxai

Construction of 20 replacement houses under C817 is almost complete. Additional work involving site clearance, 4 additional houses and one 6-room school has been arranged under Variation Order #1 for C817.

Sixty-six borehole locations have been identified with consensus from villages, DWG and RMU and will be installed as compensation for disrupted water supply caused by the construction activities near these villages. Twenty-six boreholes have been completed, with 21 of these boreholes already having hand-pumps installed.

RAP5 – Transmission Lines

A summary of all obstacles within the 115kV and 500kV transmission line corridor is presented in the following table:

No	District Name	Payment Complete (kip)					Total		
		Final		Relocation			PAPs	N.Struct	Amount(kip)
		PAHs	Amount(kip)	HHs	# structures	Amount(Kip)			
1	Kaisone district	57	44,904,500	7	9	34,285,260	83	9	175,389,170
2	Xaybouly district	171	208,584,620	26	37	470,898,420	190	37	772,441,140
3	Xebagfai district	58	46,506,596	2	2	111,918,830	68	5	215,888,626
4	Mahaxay district	100	204,857,400			-	100	19	690,557,400
5	Gnommalath district	194	253,832,781			-	194	25	770,932,781
Total		580	758,685,897			617,102,510	635	95	2,625,209,117

2.1.2.2 Livelihood restoration

A Livelihood Restoration Team Leader was appointed on April 23. Livelihood restoration programs are undergoing revision to apply an emerging strategy under negotiation between NTPC and DWG, and will be further refined by the Project Lands team in the coming months. Activities will be increased to include substantially more PAPs in 2007 than in 2006. Participating PAHs have (for the most part) been identified already and have been cleared of UXO during the reporting period. 2006 participants will also be heavily involved with the initiation of 2007 participants during farmer-to-farmer training sessions and information exchange.

Bidding for construction of livelihood infrastructure such as mushroom houses, pig pens, cattle pens and frog tanks was conducted during June. Construction is expected to start on these activities during July.

A summary of livelihood restoration participation in 2006 – 2007 is presented below:

Activities	PAHs involved in 2006 *	PAHs planned in 2007 *	PAHs involved till May 07 **	PAHs involved till June 07 **
Fish	6	57	9	31
Frog	5	44	5	5
Forage	5	26	31	31
Pig	18	57	18	46
Mushroom	10	15	10	10
Rice	52	280	238	278
Cash crops in dry season	11	15		
Vegetable	5	45	15	15
Land Development	0	60	11	45
Mixed garden/NTFP/jatropha	17	43	30	49
Vocational training	59	18	0	13
Total	188	660	367	523
% progression		351% of 2006		142% of May

* One PAH can implement many activities

** including PAHs 2006 and PAHs 2007

Classification of PAPs according on the amount of impact by the project is summarized below (for RAP 3)

Ref.	Categories of PAHs according to amount of impact (kips/year)	# of PAHs	% of total	Participation in LR activities		Participation in LR including other activities		Balance PAHs not involved in LR activities	PAHs who lost 100% of their rice field
				# PAHs	% total class	# PAHs	% total class		
1	< 500,000	45	11,5	24	53,3%	15	33,3%	21	0
2	Between 500,000 and 1 million	89	22,7	72	80,9%	49	55	17	4
3	1 to 2 millions	94	24,8	81	82,9%	53	54,6	16	13
4	2 to 4 millions	77	20,5	64	80,5%	49	62,5	15	27
5	4 to 6 millions	38	10,2	35	89,5%	26	65	4	14
6	6 to 8 millions	23	5,9	20	86,9%	13	56,5	3	5
7	8 to 10 millions	11	2,8	7	63,6%	6	54,5	1	3
8	10 to 15 millions	3	0,8	3	100%	2	66,6	0	0
9	15 to 20 millions	3	0,8	3	100%	3	100	0	1
	Other	3		2					
Total		387		311	80,3%	216	55,8%	76	67

PAHs impacted less than 1 million kip represent approximately 35% of the total number of >10% PAHs. Only 71% of these PAHs are currently engaged in livelihood activities.

Project Lands Photographs for the month of June 2007



Project Lands Technical Workshop, Gnommalat



Gnommalat Governor opening speech

2.1.3 Camp Followers

Discussions held on Camp Followers Program among Public Health and Safety Teams.

1. Hand Washing Facilities by Districts:

No	District	Total number of restaurants	Using tapped basin for washing hands	Coverage rate
1	Mahaxai	10	10	100%
2	Gnommalat	29	29	100% (Now only 29 restaurants - one moved out)
3	Nakai	20	19	95%
4	Khamkeut	22	15	68%
	Total	81	73	90%

2. Chlorination of Shallow Well Water by Districts:

No	District	Total number of restaurants	Chlorinating Water in Restaurants	Chlorinating Water in Households	Remarks
1	Mahaxai	10			Nam Papa system
2	Gnommalat	29	25	167	
3	Nakai	20	8	9	
4	Khamkeut	22			Nam Papa system
	Total	81	33	176	

Social Activities

Health Programs

2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during June 2007:

- Land leveling in front of the GMLT DH is still a problem and needs urgent attention.
- Power supply to Naxok and Khedphit has been completed.
- 90% of furniture items have been delivered to health facilities, only meeting tables are remaining. Completion of payment of earlier supplied items will hasten the delivery of tables.
- Rehabilitation of MHX DHO is complete.
- Number of training courses held during the month:
 - Two-day training of VHCs, VHVs and TBAs on Acute Respiratory Infections and Diarrheal Diseases in Nakai and Khamkeut Districts on 5-6 June 2007.
 - Counselling training on HIV/AIDS in Khammouane Province on 14-17 June 2007.
- Quarterly meeting among VHCs, VHVs and TBAs at Nongbouakham Health Center on 7 June 2007.
- Medical experts from Swiss Tropical Institute visited the project in view of academic collaboration. Pending publication was finalized.
- HPMU team attended the National Health Promotion Website released by MOH at Lao Plaza in Vientiane (7 June 2007).
- Village Volunteer Peer Educators from Vientiane Province visited the peer education program in Mahaxai and GMLT 19-22 June 2007.
- Meeting with Medical expert in Vientiane to discuss nutritional needs of under-five and pregnant women and planning of nutritional survey in the project area. Funding will be considered under IP program.
- Annual Stakeholders Forum preparation and participation, including video production on health program.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) has been analyzed and first draft of the report is expected by 14 July 2007.
- Continue and expand monthly Maternal and Child Health clinics in four districts and prepare the family health files at the same time. So far HPMU have held 474 clinics in 86 villages
- Routine visits to the resettlement villages continued and population health monitored
- Meetings and discussions on preparation of a video for HPMU activities, to be completed before the Stakeholders Forum Workshop

Abbreviations used in this section:

DCD	District Community Development
DH	District Hospital
DHO	District Health Office
HC	Health Center
HPMD	Health Properties Management Division
HPMU	Health Program Management Unit
ICHC	Integrated Community Health Center
IFMT	Institut Francophone pour la Medecine Tropicale
IP	Institut Pasteur
MCH	Maternal and Child Health
MOH	Ministry of Health
NCCAB	National Committee for Control of AIDS Bureau
ORPP	Outbreak Response Preparedness Plan
PH	Provincial Hospital
PHO	Provincial Health Office
TMRC	Traditional Medicine Research Center
UNPFA	United Nations Population Fund
VHC	Village Health Committee
VHV	Village Health Volunteers
WHO	World Health Organization

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
Infrastructures, Equipment and Vehicles	Refurbishment and construction of buildings	Refurbishment of Khammouane Province Hospital, 4 District Hospitals and health centers. Construction of 2 new HCs		Work completed at 100%
	Provision of medical equipment	X ray machines, biochemistry & lab. Equipment, hematology unit,		100%
	Provision of vehicles	4 ambulances 12 motorbikes 4 4WD pick-ups		100%
	Non-medical equipment	IT equipment, fridges, hospital furniture, bed nets,	-	85%
Public Health Program, including Awareness Program	Supplies - Drugs, kits, forms and Manuals	Provision of drug revolving funds in KMN provincial hospital, 4 District hospitals, 6 HCs and 68 villages	Ongoing for villages	60%
		Support of office and operating costs	-	Provided every six months
		Provision of training material, forms, etc.	-	75% Ongoing, according to needs
	health Education and Awareness Programs	STIs including HIV/AIDS Regular health education program, special events	Peer education training program for High School Students Health education sessions (in community and with service women) Feedback meetings on the survey results in Nakai 49 sessions took place for this month (total participants were 2 262 and 1 372 of them were female)	251 sessions 36 895 participants
		- Relocation of medicinal plants - Training of traditional healers	Logistic problem with Traditional Medicine Research Center (TMRC) Arrangements made with the Provincial Food and Drug Officer for the conducted training of the traditional practitioners. A specially designed questionnaire for the medicinal plant usage was completed by traditional practitioners. This information will be added to medicinal plants database held by HPMU. No activity this month	1 session 16 participants
Strengthening Human resources in Public Health	Supervision and Monitoring	Provision of incentives		60% ongoing
		Field visits for supervision and support	Resettlement : bi-weekly visits	Ongoing
		Integrated outreach program (health education and awareness on specific health topics)	Comprehensive Maternal and Child Health Monthly Clinics will be replacing this No activity this month	368 sessions 20 209 participants
		Strengthening health services delivery in health centers	Ongoing	Ongoing
		Strengthening health services delivery in villages	Ongoing 86 MCH clinics took place for the month	474 Monthly MCH Clinics in 86 villages
	Training	Community level (villages)	Ongoing	450 sessions

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
			Two sessions at community level (60 participants and 28 of them were female)	1 092 participants
		Health Centers (village – District and Provincial levels)		25 sessions 318 participants
		Long term		6 sessions 17 participants
		Study tour	As and when required No sessions for the month	90%. All district hospital and health center staff covered
		Workshops on psychosocial problems		Under preparation
		On-the-job training	Practical training on surgery and biochemistry for KK District hospital Ongoing One session on HIV/AIDS Counselling (12 participants and 6 of them were female)	31 sessions 485 participants
	Meetings	Create Outbreak Detection and Response Preparedness Unit		100% - includes Avian influenza
		Meetings at provincial and district levels	Ongoing AIP meetings were held in four districts and KMN PHO	110 meetings 1 751 participants
		Quarterly meeting at HC (VHVs, HCs)		14 meetings 433 participants
		Health education materials and activities - design and production		ongoing
		Develop the procedures for the referral system		ongoing
		Zonal Health Committee Meeting (4 x per year for each ICHC; and for DH)	Meetings in 4 districts (same as quarterly meeting at HC) One meeting was conducted (32 participants and 16 of them were female)	14 meetings 433 participants
	Public Health Monitoring and Surveillance	Routine data collection/HIS		ongoing
		Outbreak Response Preparedness	Report completed	100%
		Outbreak Response Operational	As and when required	10%
		Scientific support	As and when required	
		Existing data analysis 2004		completed
		Midterm survey		To be carried out in 2008-9
		Special surveys (initial health checks of resettled households on Nakai)	Data has been analyzed and first draft of the report is expected by 14 July 2007. First collaborative activity between HPMU and IP. Blood and stool samples were collected by IP team for further analysis. NTPC and IP along with partners from MOH, Vietnam and Cambodia took part in the one day workshop in NTPC Office, Vientiane. The objective of the meeting was to determine areas of further studies that are outside the technical and financial reach of NTPC's HPMU	Complete in Village Group I: Nong Boua Sop On Boua Ma Phonsavang Sop Ma Khone Kaen Done Ka Oy Sop Hia

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
		Monthly MCH clinics	Ongoing 86 MCH clinics took place for the month	474 Monthly MCH clinics in 86 villages
Equity fund		Payment of treatment for entitled PAPs	As and when required Five patients for this month	31 individual referred to TKK hospital and financially supported



Supervision visit to MCH Unit, Mahaxai DH



Quarterly meeting among VHCs, VHVs and TBAs at Nongbouakham Village



Training course on Acute Respiratory and Diarrhea Diseases for VHCs, VHVs and TBAs in Nakai District



Swiss Tropical Institute visited Nakai District Hospital



Village Volunteer Peer Educators from Vientiane Province visited the peer education program in Mahaxai and GMLT

Social Activities

Nakai Plateau Resettlement

2.3 Nakai Plateau Resettlement

2.3.1 General

June brought the first heavy rains of the wet season 2007, and although village development work slowed somewhat to accommodate this considerable progress was still made throughout the month.

Road access to all villages remains good, and resettlement road contractors are on standby to carry out any road repairs and maintenance of the inter-village and intra-village roads that will be required during the wet season.

Following independent consultations conducted in Sop Hia in May, uphill relocation of the 14 households who elected to remain in old Sop Hia commenced. Land clearance of the new housing area was completed sufficiently to allow construction of houses to progress significantly. These houses are built to a standard considered appropriate to the traditional needs of the Vietic people and consistent with their choice to maintain a traditional lifestyle in their spiritual territory. They are of a better standard than the original Sop Hia houses, though not as high a standard as the resettlement houses provided to Nakai Plateau Resettlers. Eight of fourteen frames have been completed, with the houses expected to be fully completed and the uphill relocation completed in July.



Vietic households in Sop Hia constructing their houses uphill of the old site.

The houses consist of good quality sawn timber frames and corrugated tin roofs, with floors rebuilt from existing houses and wall cladding made of locally available materials.

Pour-flush latrines and rainwater collection will be provided.

The vast majority of permanent houses in the three southern villages of Sop On, Phonsavang and Boua Ma have been completed and are now occupied by resettlers. Good progress also continued towards the electrification of these villages.

Construction of houses is progressing well in all other villages. Contractors have now mobilized to all villages, with the exception of Oudomsouk, which is expected to be ready to award at the start of the 2007/2008 dry season.

In preparation for the 2007 wet season, potentially affected households were identified in the villages not yet resettled – i.e. Thalang, Nakai Tai, Nakai Neua and Oudomsouk. In the case of Thalang, 20 households elected to move to their new site (New Thalang, which is only about 1 km from the old village) rather than be relocated uphill. These 20 households are now occupying their permanent housing plots on their new sites. Potentially affected households in Nakai Neua and

Nakai Tai have now all been relocated to temporary housing on higher ground in the existing villages. These villages will be relocated to their new sites following the 2007 wet season.



All frames are now complete in Sop Ma.

Rice and protein distribution programmes as described in previous reports is continuing, as are bi-weekly health checks.

The second LSMS (Living Standard Measurement Survey) was conducted in June 2007 by Nakai District enumerators, following training by and under supervision of specialists from Khone Kaen University. This provides the second batch of 6 monthly household data to be used by the Independent Monitoring Agency. The database for hosting the data is under development, with data entry expected to commence in July 2007.

Transitional Livelihoods:

Currently 100% of 0.66 Ha agricultural plots have been cleared and prepared at all villages, with the exception of the densely vegetated plots in Sop Phene and Thalang, where clearance and preparation works are on-going..

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 village construction is provided to all villages, in addition to food support in the case of transition resettlers.

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

2.3.2 Infrastructure

A summary of the progress on infrastructures is given in the table below:

		Sub Total for villages moved in 2006	Sub Total for villages moved in 2007	Sub Total for villages moved in 2008	TOTAL
Resettlement - summary	Total hh to be resettled	654	477	171	1302
	Houses to be constructed	674	487	171	1332
	Resettled to date (all infrastructures complete)	0	0	0	0
	Resettled to date (transitional)	671	107	0	778
Infrastructures	ha to be cleared (housing plots)	186.1	122.26	40	348
	ha UXO cleared	186.1	122.26	40	348
	ha logged	186.1	122.26	40	348
	ha de-stumped	186.1	62.16	40	288
	ha cleared	184.42	62.16	40	287
	% access road	100%	66%	50%	61%
	% village road	92%	39%	50%	52%
Wood - Timber	m3 Total required (frames, floors, walls)	8433	6164	2177	16774
	m3 required frames	4950	3587	1271	9808
	m3 required floors ONLY PLANKS 2.5 x 15, 2.5 x 20 and 3 x 20	1672	1211	428	3311
	m3 required walls ONLY WALL PLANKS 1.5 x 20	1812	1366	478	3655
	m3 delivered Frame	2712	36	0	2748
	m3 delivered Floors	875	0	0	875
	m3 delivered Walls	512	0	0	512
Houses	m3 delivered total	4099	36	0	4135
	transitional houses built	612	129	0	741
	transitional latrines	174	30	0	204
	Notice to proceed given (date)	0	0	0	0
	Notice to proceed given (number of houses)	674	487	0	1161
	concrete pillars erected (number of houses)	536	32	0	568
	frames and roofs completed (number of houses)	375	1	0	376
	permanent houses completed (excluding connection to the electricity grid)	185	1	0	186
	permanent latrines completed and operational	345	1	0	346
	rainwater collector systems (1/house) completed	267	1	0	268
domestic water	permanent houses completed (including electricity)	38	0	0	38
	number of tubewells to drill and equip	108	74	17	199
	Successful wells drilled	99	21	0	120
	pumps installed	98	12	0	110

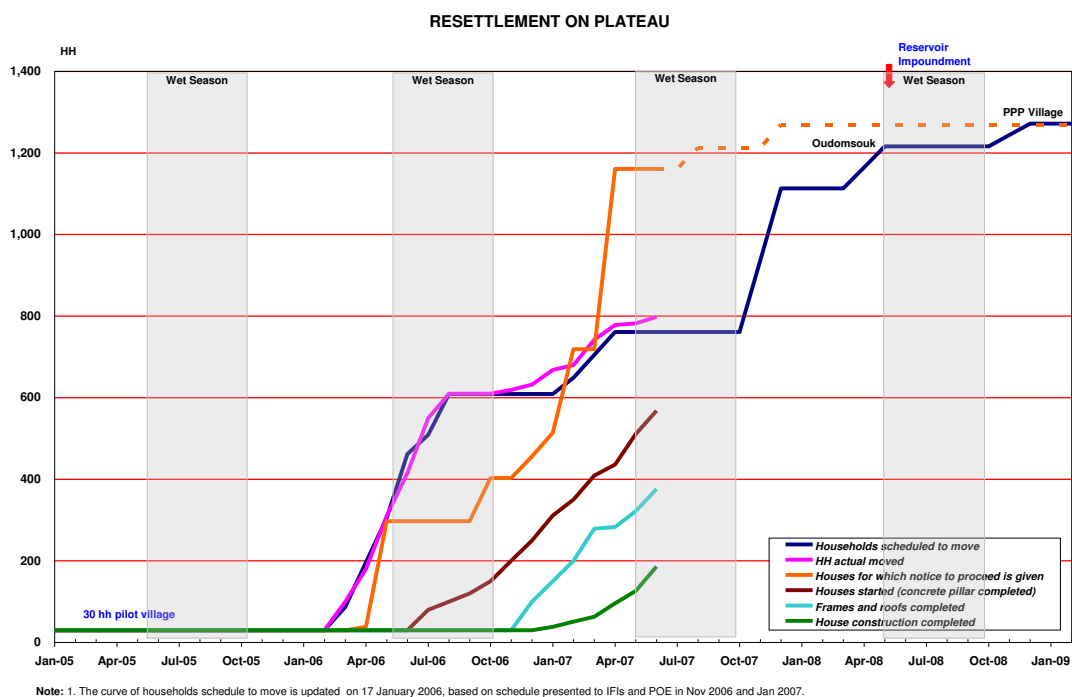


Figure: progress of relocation and house construction

2.3.2.1 Topographic survey and mapping

Apart from the continuing activity of setting out of boundary markers for the resettlers' house and agricultural plots, there were no topographic survey and mapping activities during the month

2.3.2.2 Finalization of village location – Village and agricultural layouts

The location of the new urban areas for the Oudomsouk households that have to be resettled because of Nakai reservoir inundation still has to be finalized. An "Urban Area B" has been approved but this area is not large enough for all the PAP new houses, which number 115. Draft layouts have been prepared for areas near Phone Pan Peck and near the Oudomsouk Primary School. However both these locations were rejected. A third draft layout was prepared for an area adjacent to Area B and if favorable, further topographic survey and mapping and UXO search and clearance will be necessary.

2.3.2.3 UXO search and clearance

The ongoing contract for "Resettlement Area UXO Community Awareness and Emergency Response Teams" continues. The community awareness activities continue to progress smoothly and the system of villagers preparing response forms and placing them in "drop boxes" provided continues to work.

The response team continued to visit villages to check on reported suspect items and in June the team searched the transitional resettlement area for the 13 Sop Hia families mentioned earlier. It was also a busy month with 43 items destroyed in 7 village areas including bomblets, rockets, , artillery shells, a grenade, a mortars and mortar fuses. To the end of June 2007, 2,139 UXO items, including 1,898 bomblets (89% of total), have been found and destroyed by the response team.

2.3.2.4 Roads and drainage

There are three ongoing road construction contracts. The rate of construction progress was surprisingly good when considering days were lost because of the wet weather conditions. However the number of rain days will now increase and probably all the Contractors will stand down in July.

Northern Access roads to and within villages, Contract C979:

Contract C979 is for the construction of the access roads to and within Area 7 and for the Area 13 agricultural area. At Area 13 there was progress with embankment compacted fill and the works are about 48% complete. At Area 7 all the roads and tracks have been cleared and most of the culverts have been installed and progress has been made with embankment and pavement construction. It is estimated that the Area 7 works are about 57% complete. Including camp construction, the contract is about 48% complete.

Access Roads and Tracks with Resettlement Areas 1 and 2 for Nakai Neua and Nakai Ta, Contract C999:

Contract C999 for the construction of the access roads and tracks for Nakai Tai and Nakai Neua. The Contractor has completed camp construction and is working in both areas. It is estimated that the works are about 50% completed.

Southern VG2 Access roads to and within villages:

For the contract for the construction of access roads to and within the new villages of Done (area 21) and Khone Khen (area 22), progress improved and at Ban Done the works are about 90% complete and at Khone Khen only a few minor works items are outstanding. The total contract works are about 85% complete.

2.3.2.5 House Construction

Timber house construction also included the construction of toilets and bathrooms and a rainwater collection tank. Construction is proceeding on all six contracts for the VG1 resettlers.

Progress with the VG1 contracts is as follows:

C604: Area 17 for Bouama, 75 houses (74 for resettlers), Area 16 for Keng Gnao, 13 houses: 8 houses for Keng Gnao resettlers at Area 16 are complete and the other 5 are just requiring electricity connection. At Bouama there are 56 houses complete apart from electricity connection and the frames and roofs completed for the remaining houses. The availability of wall planks to finish off the works has improved during the month and it is estimated that about 99% of the required timber has been delivered to the Contractor. Full contract completion is expected in July.

C605: Area 18 for Phonsavang, 42 houses (41 for resettlers): 41 houses are complete apart from electricity connection and it is estimated that about 99% of the required timber has been delivered to the Contractor.

C606: Area 19 for Sop On, 139 houses (134 for resettlers): 42 houses are complete apart from electricity connection and 97 houses are substantially complete, that is roofs are completed. It is estimated that about 80% of the required timber has been delivered to the Contractor.

C607: total 106 houses, Area 8a for Sop Hia first group, 40 houses (39 for resettlers) and Sop Ma 69 houses (67 for resettlers): The works have continue to progress relatively well with frames and roofs completed at 37 houses at Area 8a and 43 houses at Area 8. It is estimated that about 44% of the required timber has been delivered to the Contractor.

C608,: Area 9 for Nong Boua Kham, contract 61 houses (57 for resettlers): Foundation and concrete column works are continuing and completed at 29 houses. No timber works are completed.

C609: Area 11 for Sop Phene, contract 58 houses (57 for resettlers): Foundation and concrete column work is continuing and completed on 47 houses. The frames for 10 houses are complete and about 16% of the required sawn timber has been delivered.

For the **VG2 villages**, seven contracts were signed in February and one signed in March. The total number of VG2 houses to be constructed is now 647 and the total value of the contracts is nearly USD 2.8 million, not including sawn timber. Notice to proceed has been given to all the Contractors. The contracts are as follows:

C803: Area 21 for Ban Done, Hamlet No. 1, 75 houses: About half of the house concrete foundations and columns are complete and the frames for 6 houses are complete.

C804: Area 21 for Ban Done, Hamlet No. 2, 78 houses: Similarly about half the foundation and column works are complete and frames for 8 houses completed

C805: Area 22 for Khone Khen, 58 houses: The concrete foundations and columns for 19 houses are complete and the frames and roofs for 8 houses are complete. About 13% of the sawn timber has been delivered

C806: Area 2 for Nakai Tai, Hamlet No. 1, 102 houses: Notice to proceed given and works started 2 June. Camp construction is underway.

C807: Area 2 for Nakai Tai, Hamlet No. 2, 102 houses: Notice to proceed given and works started 2 June. Camp construction is underway.

C808: Area 1 for Nakai Neua, 97 houses: Notice to proceed given and works started 2 June. Camp construction is underway.

C809: Area 13 for Thalang, 84 houses: No progress with house construction.

C101:, Area 7 for Sop Hia and Nam Nian second group, 59 houses (58 for resettlers: Some progress with concrete foundations and columns. Works completed on one house which the Contractor is supplying timber.

The following contracts have been signed for the delivery of sawn construction wood:

- C1046 with a Savannakhet based sawmill for 503 m3 at market price.
- C1015 with a Nakai Plateau sawmill for 1,800 m3 from salvage logging logs.
- C1016 with a Nakai Plateau sawmill for 400 m3 from salvage logging logs.
- C1017 with NPVFA for 800 m3 from salvage logging logs.

The NPVFA are also continuing to provide sawn timber from resettlement area logs. There has been a significant increase in supply, and from 1 to 21 June about 392 m³ was distributed to house contractors. The total to date is 4,135 m³ have been delivered, about 25% of the total requirement.

2.3.2.6 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, four seed processing and agricultural storage facilities and four organic fertilizer facilities located at various villages. The sizes of most of the buildings will vary according to village size.

The following Contracts for the construction of 36 community buildings were signed in April:

C910: for the following community buildings:

Area 16, Nong Boua	Nursery School and Roofed Market
Area 17, Bouama	Primary and Nursery School, Meeting Hall and Village Office and Market
Area 18, Phonsavang	Primary and Nursery School, Meeting Hall and Village Office and Market
Area 19, Sop On	Primary and Nursery School, Meeting Hall and Village Office, Market and Health Center

C911: for the following:

Area 21, Done and Area 22, Khone Kaen	Primary and Nursery Schools only
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C912: for:

Area 8, Sop Ma and Area 8A, Sop Hia	Primary and Nursery Schools, Meeting Halls and Markets
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C913: for:

Area 9, Nong Boua Kham and Area 11, Sop Phene	Primary and Nursery Schools, Meeting Halls, Markets and a Health Center at Area 9
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Progress with the 4 contracts is similar, that is, the Contractors are constructing the on-site facilities and transporting construction materials to the Nakai Plateau. It is not possible to complete concrete foundation works in wet weather so progress is understandably slow.

The preparation of the contract documents for the buildings at the remaining resettlement villages is nearly complete and bidding procedures will commence in July.

2.3.2.7 Domestic Water Supply and Sanitation

Boreholes with hand pumps:

At the end of this reporting period, there is an actual total of 167 deep boreholes successfully completed out of 194 drilled since the beginning of the operations in December 2005. The total number of failures is now 27 for a global rate of about 13.92% 155 of these successful boreholes are now equipped with hand pumps or electric pumps and satisfactorily operational.

The objectives set under the contract C675 have all been successfully reached and therefore this contract has been closed on the date of 24 May 2007, exactly 1 year after its signature.

The new contract C1012 to cover, as phase 2 of implementation, the remaining VG2b, VG3 and VG4 as well as to complete Project Lands needs in Gnommalat is now in effect.

As usual, the recapitulative tables showing the actual status of the entire programme implementation as well as the tentative schedule till December 2007 are shown on the following pages.

3- Project lands												
	Oudomsouk May - Area A - SD12B	10	10	0								
	Oudomsouk Primary school - SD12B	1	1	0								
	Oudomsouk old village - SD12B	5	5	0								
	Pon Pan Pek intake PAPs	5	5	0								
	NRC (Nakai) (total 3)	1	1	0								
GML	New 8 Houses (GML)	1	1	0								
GML	Gnommalath horticulture demonstration center	1	1	0								
GML	Gnommalath Tay	12	2	10		2			6		2	
GML	Gnommalath Neua	16	1	15		1			4	7	3	
GML	Ban Lao NaaNgam	8	5	3							3	
GML	Ban Phonlathkhuey	5	1	4		2			2			
GML	Ban Tongmang	3	3	0								
GML	Ban Sangkeo	8	6	2			2					
GML	Ban Nongseng	4	1	3				1	2			
GML	Ban Thad	3	0	3			2	1				
GML	Ban Kobung	3	0	3			1	2				
GML	Ban Koud Pha Dang	2	0	2				2				
GML	Livelihood compensation Mr. Khen (GML Tay)	1	1	0								
Total 3 Project lands		89	44	45	0	5	5	6	14	7	8	0
GRAND TOTAL Domestic WS		293	160	133	0	19	20	20	20	20	17	17
4- Pilot Irrigation scheme												
19	Ban Sop On - Agriculture plots block No 3	6	6	0								
9	Nong Boua Kham CCM	1	1	0								
1	Nakai Neua FTC	1	0	1		1						
Total 4 Irrigation schemes		8	7	1	0	1	0	0	0	0	0	0
GRAND TOTAL incl.irrigation		301	167	134	0	20	20	20	20	20	17	17

Update 31.05.2007

2.3.2.8 Irrigation Systems

The construction of the extension area to the Pilot Village irrigation scheme for the resettlers from Ban Keng Gnao is still not complete. The pipeline water conveyance and distribution system is now complete apart from the marking of the route of the pipelines with concrete posts. There are also some outstanding roadworks. If the works are not completed by the end of July, then this contract will be terminated.

There was no activity with the preparation of agricultural plot layouts. This work is now complete apart from minor adjustments as required if some problems are found with the existing layouts.

For the pilot irrigation area at Sop On (area 19), using ground water for irrigation, the drilling and development of the boreholes is now complete. Some revisions to the design were made and the completion of the bid documents is now nearly complete.

2.3.2.9 Electricity

There are now four electricity installation contracts.

Contract C991 for the electrification of Resettlement Areas 17 (Bouama), 18 (Phonsavang) and 19 (Sop On). This is for the village low voltage overhead distribution lines and connections to the individual houses. The Contractor is working well and the works are about 50% complete.

Contract C1098 was signed in June for the supply and installation of the electricity supply to Area 17 for Ban Bouama and the electrification of the five remaining houses at Area 16 for Keng Gnao resettlers. The Bouama works include installation 22 KV transmission line from the VFA yard to Bouama and the installation of a 160 KVA transformer.

Two small contracts are:

C1119 is for the connecting a generator to the Resettlement / District Governor's Office as there are normally some power outages in Nakai in the wet season.

The works in Contract C1019 for the construction of shelters for the generators to be installed at Resettlement Areas 18 and 19 and the Nakai Resettlement and District Governor's Office is nearly complete.

2.3.3 Livelihood

The organization of livelihood overhead management and coordination will be set up soon.

Summary table of Livelihood activities:

Nakai Livelihoods Status at end of June 2007

		Sub Total for villages moved in 2006	Sub Total for villages moved in 2007	Sub Total for villages moved in 2008	TOTAL
Agriculture	Target for training (hh/day)	3924	2862	0	6786
	Training delivered - total	869	330	0	1199
	Target for Mushroom production (10 mushroom producers per village trained and supported)	90	50	0	140
	Mushroom producers	75	0	0	75
	Target for fruit trees planted (30 seedling per hh)	19620	14310	0	33930
	Fruit trees planted	1764	0	0	1764
Permanent agriculture land : field of 0,66 ha	Size of permanent agriculture land : field of 0,66 ha (ha)	432	315	0,0	746
	Ha UXO cleared	432	315	0,0	746
	Ha prepared ready to cultivate (following Ag/liv progr)	381	178	0,0	559
	Total fences (wood + living fences) surrounding each field of 0,66 ha : target (m)	156960	114480	0	271440
	Total wood fences (lm installed)...	88560	64320	0	152880
	... including living fences (lm installed)	3840	720	0	4560
	ha equiped for irrigation	28	0	0	28
	Target for cultivation (ha)	144	105	0,0	249
	Ha cultivated	0	0	0,0	0
	Target for coverplant (fallow improved/pasture in ha)	288	210	0,0	498
	Ha with cover plants (fallow improved/pasture)	100	126	0,0	226,36
Additional permanent agriculture land : field of maximum 3 ha per hh	Size of additional permanent agriculture land : field of maximum 3 ha (ha)	1799	1012	0	2811
	Land mapped	1473	0	0	1473
	Land allocated per hh	129	0	0	129
	Ha prepared ready to cultivate (following Ag/liv progr)	0	0	0	0
	Fences (wood + living fences) surrounding each field of 3 ha : target	346620	252810	0	599430
	Total wood fences (m installed)...	0	0	0	0
	... including living fences (m installed)	0	0	0	0
	Target for cultivation (ha)	600	337	0,0	937
	Ha cultivated	0	0	0	0
	Target for coverplant (fallow improved/pasture in ha)	1199	675	0,0	1874
	Ha with cover plants (fallow improved/pasture)	0	0	0	0
Common pasture under the forest (property of VFA)	Ha to be sowed in pasture (maximum 5 ha per hh)	2863	1193	0	4055
	Land mapped	0	0	0	0
	Land allocated per village	0	0	0	0
	ha prepared (following Ag/liv progr)	0	0	0	0
	Ha sowed in pasture	0	0	0	0
Draw down (seasonal land for cultivation or/and pasture)	Target seasonal land for cultivation or pasture (ha)	1428	742	0	2170
	Ha mapped	1543	724	0	2267
	Ha allocated per village	925	434	0	1359,6
	Ha prepared	203	162	0	365,11
	Ha sowed in crop	203	162	0	365,11
	Ha sowed in pasture	0	0	0	0
VFA	charcoal kilns	22	0	0	22
	NTPC planting/growing (none / ongoing)	45	0	0	45
	forest replanting (ha)- enrichment planting	32	0	0	32
	VFA quarterly Board meeting (since Oct 2006)	-	-	-	3
	VFA staff training (target)(man.day)	0	0	0	0
	VFA staff trained (man.day)	0	0	0	0
	tractors	0	0	0	0
	motorbikes	0	0	0	0
	chainsaws	0	0	0	0
	safety equipments	0	0	0	0
	cars	0	0	0	0
	sawmill completion progress (ongoing / completed)	-	-	-	100%
	number of furnitures produced	0	0	0	0

Livestock	Target inventoried animal population in %	100%	100%	0%	0%
	Animal inventoried (%)	100%	80%	0%	81%
	Target registered large ruminants (%)	100%	100%	100%	100%
	Large ruminant registered (%)	63%	62%	0%	55%
	Target vaccinated population (%)	100%	100%	0%	88%
	Vaccinated large ruminants (%)	76%	45%	0	57%
	Vaccinated poultry (%)	78%	37%	0	55%
	Vaccinated pig (%)	57%	33%	0	42%
	Target for shed (nb)	1308	954	0	2262
	Number of sheds for large ruminants	20	0	0	20
	Number of sheds for poultry	273	0	0	273
	Number of sheds for pig	120	0	0	120
	Target for training about breeding per hh (hh/day)	5232	3816	0	9048
	Training about breeding for hh	0	0	0	0
	Target for VVV training (VVV/day)	783	435	0	1218
	including technical training for VVV delivered - total (15 days per VVV)	0	0	0	0
	including methodological training for VVV delivered - total (72 days per VVV)	0	0	0	0
	Target for meeting about health animal sensitization for breeders (breeders/day)	54	30	0	84
	Meeting about health animal sensitization for breeders	0	0	0	0
Fisheries	target staff training	0	0	0	0
	staff training	0	0	0	0
	target resettlers training	0	0	0	0
	training of resettlers	0	0	0	0
	fishing groups to be formed	0	0	0	0
	fishing groups formed	0	0	0	0
	RFA Thalang office	0	0	0	0
	mechanical workshop	0	0	0	0
	jetties	0	0	0	0
	market	0	0	0	0
	boats required	0	0	0	0
	date	0	0	0	0
	boats built/provided	0	0	0	0
	landing sites	0	0	0	0
	fishing gears	0	0	0	0
CD	target staff training (2 people per village, trained every 3 months) - number of training sessions	0	0	0	0
	Training of CD on concept development (attendant)	16	1	0	17
	Training of CD on Management (attendant)	16	1	0	17
	target VRC training (5 people per village, trained every 3 months) - number of training sessions	0	0	0	0
	training of VRC	131	27	0	158
	VRC meetings target	111	50	0	161
	VRC meetings held	52	38	0	90
	consultation process for relocation (%)	9	2	0	11
	Consultation (Site selection, village lay out, house & farm plot)	0%	0%	0	0
	consultation for village relocation activity planning (%)	0%	0%	0	0
	final census prior to relocation (number of persons)	2824	2181	0	5005
	current number of persons	2984	2221	0	5205
	current number of hh	613	470	0	1083
	family registration books (number issued)	406	384	0	790
	off-farm activities (number of families engaged in OFA)	90	16	0	106
	number of vulnerable hh	57	20	0	77
	number of vulnerable hh getting additional support	49	0	0	49
	number of disturb. Allowances paid	0	0	0	0
	Food security - kg of rice distributed	601159	23176.4	0	624335.4
	education material (% of children equiped for the current year)	0%	0%	0	0
0	saving and credit (1 comitee per village)	0	0	0	0
	gender workshops - to be precised Male (Female)	0	0	0	0
	LSMS - number of survey carried out (2 / year - 1st in Aug 2006)	171	123	0	294
		0	0	0	0
0	grievance total	67	1	44	112
	new grievance for this month	0	0	38	38
	grievances closed total	66	0	1	67
	grievance closed during the month	3	1	0	4

Communication

No change from previous report.

Staffing

No change from previous report.

Institutional strengthening

No change from previous report.

Land allocation

No change from previous report.

2.3.3.1 Nakai Plateau Forestry Development Program Strengthening VFA

Wood processing installation

No change from previous report

Timber supply for resettlement

Logging

Inventory for logging :

No change from previous report

Log Cutting activities

No change from previous report

Log Transportation activities

Description	Location	No of Logs	Volume(m ³)
Repainting Logs (diameter and Length) at 2nd landing	Houay Malai	3,358	
Logs transported from Lok F Yard to 2nd landing Houay Malai		44	71.496
Logs transported from Resettlement Area	Ban Thalang		
Logs transported to VFA sawmill	Houay Malai to VFA sawmill		366.169
Logs transported to SD	Houay Malai to Sawmill B	125	199.823
Logs transported to KSV	Houay Malai to sawmill		
Logs transported from Sawmill	Sawmill to Houay Malai (VFA sawmill)	22	30.596

Additional logs from salvage Logging

No change from previous report

Sawn timber activities:

Description	Location	No of Pieces	Volume(m ³)
Transport sawn timber from VFA sawmills to Infrastructure storage			
	VFA sawmill to Warehouse- Mai kao -Mai mai	16,417 6,991	181.867 149.314
	Sawmill 2 to VFA Storage	5,583	25.220
	Sawmill 1 SM to VFA storage	8,969	42.811
Contract signed with different contractors			
Transportation sawn Timber 500m ³ (6\$/m ³)	11 June 07 Contractor A		116.586
Transportation Logs from Resettlement to 2nd Houay Malai	Contractor B		
Stumps cutting for furniture manufacturing	Resettlement Area		

Sawn timber

The provision of timber to the supply of wood for NT2 resettlement housing construction for 3 villages Ban Phonsavang, Ban Sop On, Ban Bouama as mentioned below:

		<i>Log from various sawmill</i>	<i>Receive Sawn timber(m3) from sawmill</i>	<i>Delivery (m3) to contractors</i>	<i>Remained in VFA Storage (m3)</i>
1	Sawmill Lak 20				
2	Sawmill Nakai				
3	Sawmill 3				
4	VFA Sawmill		208.973		
5	Changed				
	Total		208.973		
1	Total all contractors				
2					
3					
4					
5					
6					
7	Infrastructure NTPC			331.181	
8	Others			23.014	
	Total			354.195	

Total volume timber delivery in May 2007 to Ware house: 202.053 m3 (VFA sawmill: 155.138 m3 and VFA storage: 21.964 m3)

<i>Total 2006 up to now</i>	<i>Total Production (m3)</i>	<i>Total Delivery (m3)</i>	<i>Total Remaining VFA storage (m3)</i>
	5400.405	3961.993	1438.412

Silviculture (plantation, nursery, enrichment)**Nursery**

Seedling production:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Ornament Seedling production				
Medicine seedling production				
Transplanting Valuable native species Seedling production	1,508			
Changing old seedling bags to new seedling bags	bags			
Sold seedlings				7,500,000 kip

Bags preparation:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Transportation Soil for seedling production	6 Handling Tractor			
Filling bags(Soil mixed compost)	4,932bags			
Change small bags to medium bags	Seedlings bags			
Change small bags to large bags	bags			
Transplanting	seedlings			
Fertilizing				
Weeding				
Valuable native species Seed harvested -Vatica cinerea	kg			
Seed bed preparation	Seedbed			
Bamboo stump	stumps			

Compost production and Mulberry Tea production:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
B.E production				
Compost production	kg			
Sawdust transport				
Cow Dung	kg			
Mulberry Tea Production	5 kg			

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
B.E production				
Compost production	kg			
Sawdust transport				
Cow Dung	kg			
Mulberry Tea Production	5 kg			
<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
B.E production				
Compost production	kg			
Sawdust transport				
Cow Dung	kg			
Mulberry Tea Production	5 kg			

Plantation

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>	<i>Remark</i>
Grass cutting, weeding	2.3 ha			
Fence maintenance				
Land clearing for planting				
Planting	1,900 trees			
Medicinal planting	seedlings			

Enrichment Planting

Description	Quantities	Cost/Unit (kip)	Amount (kip)	Remark
Grass cutting, weeding				
Fence maintenance				
Fertilizing				
Fire protection				

Forage

Description	Quantities	Cost/Unit (kip)	Amount (kip)	Remark
Site preparation	3.5 ha			
Planting	3.5ha			
Grass cutting, weeding				
Harvesting seed -Ruzisiensis				
Fertilizing				
Fence				

NTPF

Description	Quantities	Cost/Unit (kip)	Amount (kip)	Remark
Making house for Orchid 7x9m				
Planting Orchid with dead stump tree				

Furniture, handicraft manufacture

No change from previous report

Charcoal & brick making

Transportation of bricks 2,500 pieces

Fuel wood transported from sawmill 47 by hand tractor to Charcoal kiln site.

2.3.3.2 Nakai Plateau Agricultural and Livestock Development Program

2.3.3.2.1 Land Preparation and preparation of the fields in summarized in the following table :

Nakai Agricultural Livelihood Program - Status as June 2007

Note: Outdemonk timing to be determined following completion of survey in early 2007
Phon Phan Park (not reservoir affected) timing to follow survey in early 2007

	Villages	Thalang	Sop Phene	Nong Bona + Kham	Sop Ha (first group)	Sop Ma	Nakai Neua	Nakai Tai	Area 7	Nong Bona + Keng Gnan	Bona Ma	Phonsavang	Sop On + Ka Oy	Ban Done + Ka Oy	Khome Kene	TOTAL
	area	79	57	57	36	67	92	194	40	43	74	41	136	147	52	1115
	Resettled:	end 07	mid 06	early 07	mid 06	mid 06	mid 07	mid 07	early 07***	mid 06	mid 06	mid 06	mid 06	mid 06	mid 06	mid 06
Permanent agriculture land : field of 0.66 ha	Land allocation in Ha	24	38	38	24	44	61	128	24	25	40	27	98	97	34	736
	Cutting of the trees															
	Preparation of the fields															
	Living fences															
	Wet Season Rice/vegetables on minor portion of plot															
Additional permanent agriculture land : field of maximum 3 ha per hh	Wet Season cover plant on major portion of plot															
	Dry Season Borehole Irrigation **															
Common pasture under the forest (property of VFA)	Land allocation															
	Cutting of the trees															
	Preparation of the fields															
	Fencing															
Brow down (seasonal land for cultivation and pasture)	Sowing cover plant and rice															
	Land allocation															
Brow down (seasonal land for cultivation and pasture)	Slash and burn in ha	10	34.6	28.7	15	13.6	47	73.8	0	16.9	14.9	29.3	15.7	55.3	7.4	363
	Sowing of rice	10	34.6	28.7	15	13.6	47	73.8	0	16.9	14.9	29.3	15.7	55.3	7.4	363
Brow down (seasonal land for cultivation and pasture)	Implementation of pasture															
	Land allocation															

	finished program
	in progress
	Work on farmers own initiative (against NTPC / PMU instruction for northern areas, as no UXO investigation)
	due by mid 07 - not yet started
	due after mid 07 - not yet started

* Sop on only - 30 Ka Oy families moved early 07

** program to be tested in Sop On in 2007 and expanded in 2008, 2009

*** does not include the 18 Aboe households still remaining in old Sop Ha

2.3.3.3 Land preparation and preparation of the fields of 0.6 ha

The cutting of the big trees is almost finished (93% finished), by the farmers in the majority of the villages, and by the army in the 3 northern villages (Thalang, Sop Phene, Nongbouakham). This work will be completely finished in July, for the most fields. The few fields remaining will be finished after the raining season. It'll be the case of the fields of the farmers with some problem of labor (old people, and ill farmers).

We noticed that the work made by the Army is not so good that we hope at first because the farmers of the 3 northern villages have still a lot of work inside their field to finish the preparation. They still must to put out the trunks and big branches to clear the fields. At the beginning the farmers believed that they could do this work by themselves but in fact they can't. So, in front of the emergency of the date line for the sowing (15th of July), we have decided a compromise. We have asked to the farmers of these three villages to sow the cover plant directly inside the forest biomass (with big trunks and big branches). The idea is to try to have a minimum of biomass this year in the field to start the improvement of the soil. During the next dry season, for these three villages, NTPC will oblige to pay some private companies to put out the big trunks and big branches and to transport it outside of the village. The army won't be adapted because they don't have some tractors and big materials.

The preparation of the fields by the farmers has a good progress: 70% of the fields are ready. If we except the 3 northern villages, we have nearly 90% of the fields already prepared. This score is good if we remember the lateness at the start of the work because all the problems of loggings (during the month of March and April for some villages).

The step of the sowing of the cover plants is quite late. The main reason is the competition between the work inside the drawdown areas for the rice culture and the sowing of the fields of 0.6 ha. The farmers have choice to secure their harvest in rice in working inside the drawdown areas. We notice a very good progress of the sowing for the Center Area. Even the 3 northern villages just start to make the sowing (after the work of the Army). The South Area is globally late (Khone Khen, Ban Done and Phonsavang) in spite that they have a very good and early progress for the land preparation. As the date line is the 15th of July for the sowing of cover plant for all the village, all the team of extension workers is now in rush to follow the farmers.

The implementation of the wood fences has globally a good progress (58%). This activity can be finished after the raining season. The planting of the living fences is just starting in the fields with the arrival of the raining season. We can plant the seedling until the 30 of august 2007. After, we'll start again in May 2008 during the next wet season.

A&L NTPC Nakaï Program - Progress of the results on fields of 0.6 ha (at the 4 th July 2007)

Villages	Nb of house hold	Step 1 of the preparation of the field = cutting the big trees			Step 2 of the preparation of the field = cut the small trees and put out all the big trees and big branches			Sowing of the cover plant (number of plots)			Step 1 of the living fences = wood fences			Step 2 of the living fences = plantation of the seedlings		
		Results in numbers	Obj at the 15th of July 07	Results in %	Results in numbers	Obj at the 15th of July 07	Results in %	Results in numbers	Obj at the 15th of July 07	Results in %	Results in numbers	Obj at the 30th of July 07	Results in %	Results in numbers	Obj at the 30th of August 07	Results in %
Khone Kene	52	31	100%	60%	48	100%	92%	3	100%	6%	3	100%	6%	1	100%	2%
Ban Done + Ka Hoy	147	147	100%	100%	102	100%	69%	13	100%	9%	4	100%	3%	0	100%	0%
Sop On	136	134	100%	99%	127	100%	93%	60	100%	44%	128	100%	94%	1	100%	1%
Phone Savang	43	43	100%	100%	43	100%	100%	4	100%	9%	38	100%	88%	1	100%	2%
Boua Ma	74	72	100%	97%	74	100%	100%	13	100%	18%	7	100%	9%	1	100%	1%
Nong Boua + Keng Gnao	43	43	100%	100%	28	100%	65%	8	100%	19%	28	100%	65%	6	100%	14%
Area 7 + Nam Niam	41	29	100%	71%	35	100%	85%	23	100%	56%	35	100%	85%	0	100%	0%
Nakaï Tai	201	171	100%	85%	147	100%	73%	92	100%	46%	136	100%	68%	1	100%	0%
Nakaï Neua	92	86	100%	93%	87	100%	95%	76	100%	83%	92	100%	100%	1	100%	1%
Sop Ma	74	74	100%	100%	74	100%	100%	20	100%	27%	72	100%	97%	3	100%	4%
Sop Hia	39	38	100%	97%	38	100%	97%	7	100%	18%	38	100%	97%	3	100%	8%
Nong Boua Kham	58	58	100%	100%	0	100%	0%	0	100%	0%	5	100%	9%	1	100%	2%
Sop Phene	56	56	100%	100%	0	100%	0%	24	100%	43%	51	100%	91%	0	100%	0%
Thalang	79	79	100%	100%	0	100%	0%	0	100%	0%	0	100%	0%	0	100%	0%
	1135		100%	93%		100%	69%		100%	27%		100%	58%		100%	3%

2.3.3.4 The land allocation

After several months of work, all the maps concerning the fields of three ha are finish, village per village, field per field. During the month of June, we have organized a meeting of information and explanations about the new field of 3 ha in all the villages of the South Area. Now, these meetings are finished. This concerned the villages of Nong Boua, Boua Ma, Phonsavang, Sop On, Ban Done and Khone Kaen. The meetings for the Center and the North area will be making in September 2007.

The process of marking of the boundaries of the field of three ha has already finished in Phonsavang village. After a meeting with the manager of VFA, we have decided to mark all the global boundaries of the fields of 3ha per village before to start to mark the detail field per field. So, now the team of land allocation officers is now working to mark the global limits of the fields of 3ha, for each village. This step will be making during 2 months. Following this step, the VFA will do a survey to define the wood to be cut and used by logging (commercial wood).

To improve and speed up the work of land allocation, the A&L team has recruited 2 new land allocation officers in June to speed up the allocation process. To reach the target of the complete land allocation at the end of November 2007, it'll be necessary to recruit 6 new assistants of land allocation officers at the beginning of September 2007.

2.3.3.5 Improvement of the A&L staff and speed up the promotion of new techniques

The process of training for the staff is still running and making some part inside the office and some large part inside the fields.

During this month 4 new extension workers had been recruited (external candidate) and 3 contacts have been made with some current NTPC staff (working without contract). 2 land allocation officers have been recruited.

During the month of July, we'll recruit 1 health animal supervisor, 1 supervisor for the South area, 3 to 5 new extension workers.

In front of the bad results of some DAFO staff, the DAFO have changed 4 extension workers, to take at our disposal 4 new staff. For the moment no secondment contract has been signed between the DAFO and NTPC.

2.3.3.6 Sensitization of the farmers towards sustainable farming systems

During this month, we have organized study tours to show to the farmers the cultures inside the CCM of Nong Boua. 15 villagers per villages have visited this CCM. This concerned the villages of Khone Kaen; Ban Done, Sop On, Phonsavang, Boua Ma, Nakai Tai, Nakai Neua, Sop Ma, A7, Sop Hia. The CD staff and the extension worker concerned were with the farmers during the study tour. The farmer have seen the fields with different cover plants, some pasture using by the animals, several fields of rice cultivated on a cover plants and some living fences. So, it was a good opportunity for the farmers to see and to understand the reality of what they'll have in their fields in few years. They were very interested and very happy to see these fields. After the visit, the extension workers have organized a meeting inside each village to let the farmers make an account of the study tour in front of all the villagers. The objectives are to convince the others farmers to adopt the SCV techniques.

In the month of July 2007, we'll organize a study tour with three persons per village (with minimum one representative person of each village) in Xieng Khuang Province, to meet some farmers working with the Agroecology techniques since several years and to visit the PRONAE fields.

2.3.3.7 Agriculture activities

During this wet season, the farmers are concentrated on their field of traditional rice in the draw down area and on the preparation of their permanent field of 0.66 ha with the sowing of a cover plant. The main objective for the permanent field of 0.66 ha is to implement a sustainable farming system of culture. To have a sustainable rotation between 1.22 ha of crop and 2.44 ha of pasture each year, the farmers must to finish the sowing of the cover plant in their fields of 0.66 ha.

The cultivation of vegetable wasn't possible during this wet season because the farmers hadn't got enough labor to work for these activities and not enough land ready to be cultivated. We have programmed to support some farmers and to follow them for vegetable production during the next dry season but only for the people who can water theirs plots.

In concerning the mushroom production, an important work is finished now. During the six first months of 2007, because the farmers are too much busy with the preparation of their lands in cutting the forest (draw down area and permanent field of 0.66 ha) the A&L has took advantage of this period to definite a new methodology of transfer, new sessions of training, new conditions of subsidies concerning the mushroom production. The A&L team has organized 6 sessions of work, until February to now. During the next month of August, the A&L team will organize a meeting in each village to make a census of all the voluntaries for mushroom production. We'll start again the production in September 2007. The three NTPC CCMs (Center of creation and multiplication) have already started again the production of bags.

2.3.3.8 Livestock activities

During this month, a meeting between the DAFO and the A&L team direction has allowed having an agreement on the key points concerning the health animal promotion in Nakai plateau. The DAFO have confirmed to take at disposal of the A&L team, three health animal technicians. These 3 DAFO staff has started to work at the end of June inside our team: one per area (North, Center, South). These three new health animal technicians will be under the responsibilities of the NTPC health animal supervisor. They will implement a new sustainable network of Villager Vaccinator Workers (VW).

A big work has been done concerning the methodology of intervention, the definition of the policy of compensation, the revision of the training (essentially about the method of training. The team is working on the implementation of the process to select the future VW, to train and to equip them. The inventory of the animals has been review, for each farmer. So we know the exactly knowledge of the current herd of large ruminant in Nakai plateau, including the number of animals already identified (with some ear tags).

All the work about the implementation of the animal shed (for cattle, pig or poultry) will resume in September or October 2007 at the end of the wet season. For the moment, all the A&L team was concentrated on the implementation of the pasture: very difficult work for the farmers.

2.3.3.9 Fisheries Reservoir Program

The field study has been carried out and a draft report on the Reservoir Fisheries Management Program was released to NTPC on 1st April 2007 for review and comments. This document was amended in June 2007 and passed on to GOL for review and comment. An inception meeting, attended by many GOL stakeholders was conducted in Vientiane, and first steps taken towards the drafting of a decree governing the reservoir fisheries. Existing boats on the plateau have been secured for the wet season.

2.3.3.10 Community Development Program

General / Summary:

In general, Census of 14 new villages has been completed. Oudomsouk and Phonphanpek are yet to be finalized. Oudomsouk census / survey has just been completed and now under the final revision to be sent for endorsement by RC very soon.

14 Vietic households who decided to stay at the same location (uphill relocation at 550) are still under the responsibility of Khamkeut district authority. Temporary houses are being built at 550 location some 340 m away from the existing location.

No housing and agriculture plots selection and allocation sessions have been implemented during this month. Thalang agriculture plots allocation will be carried out during the month of July after the Army has cleared all the bush and trees. Oudomsouk housing plots allocation has to wait for the land allocation from the District Governor (will be named Oudomsouk Area B1). Area B already allocated, but is not sufficient for all 115 households (only around 60 plots available – hence a piece of land capable of accommodating more than 60 housing plots will be needed).

The second survey of socio-economic data by the DWG supervised by KKV Team has just been completed (field work) and now under final check. The routine household incomes/expenditures data (through family books) have been collected by DWG CD staff and VRCs in each village. The data will be inserted in a special report and will be installed in Nakai Swap also for reference by all concerned.

Temporary relocation, to be safe from the expected flood level of 533, all houses and assets have been all relocated, except 2 houses in Oudomsouk and 14 houses in old Sop Hia (under construction) and expected by 15 July 2007 all will be completely done.

Institutional strengthening of VRCs has been regularly done. This month a Participatory Evaluation of VRCs was conducted. When compared from the start, VRCs are now playing more and more effective roles in their village resettlement and development.

Rice and protein supports are being implemented under guidance and policy of RC. So far there was no serious complaint by the resettlers. Old Sop Hia Vietic who decided to stay at the same village also received full supports like other temporary relocated villagers in Nakai.

Education supports were mainly salaries for employed teachers and GoL teachers. Employed teachers are to add the number of teachers where the GoL cannot fill the positions and nursery teachers. Food support to children at the nurseries has been provided since the start.

Off-farm activities are to gear towards increasing the Village Funds amount to be large enough to release revolving funds to members who need them through either increase monthly investment in the Village Fund and shares. The Project has also provided contribution to the Village Funds when ready. Micro-schemes in each village are being collected and screened to receive credit support from the system. Some schemes have already started with the villagers own investment for those who have enough.

No serious cases occurring during the month, except the old case from Thalang, which the District Grievance Committee has concluded and submitted to provincial Committee to resolve.

Vulnerable households were being supported with basic needs such as cloth, blanket and household needs. They are being considered to be supported with suitable livelihood activities, so as they can cope with future living conditions by themselves. The list of Vulnerable households and their livelihood needed to be supported identified in each village has been provided to all Teams concerned few months ago.

I. Census:

1. Percentage of final census completion

No	Villages	This month	Cumulated
1	Sop +Ka Oy	0%	100%
2	Bouama	0%	100%
3	Phonsavang	0%	100%
4	Done + Ka Oy	0%	100%
5	Khone Kaen	0%	100%
6	Nongboua-Keng Gnao	0%	100%
7	Nongboua Pilot Village	0%	100%
8	Sop Ma	0%	100%
9	Sop Hia Area 8a	0%	100%
10	Sop Phene	0%	100%
11	Nakai Neua	0%	100%
12	Nakai Tai	0%	100%
13	Nongbouakham	0%	100%
14	Thalang	0%	100%
15	Phonphanpek	0%	30%
16	Oudomsouk	0%	90%

Remarks: For old Sop Hia (Vietic) not yet decided where to resettle, the total entitled households are 14 (now decided to stay in old Sop Hia temporary – maybe one or up to two years). **Meanwhile if they decide where to resettle within the time frame mentioned above and if all parties found acceptable, then they can move anytime and entitled like other resettlers.**

2. Final figures of Resettled Households & number of persons as per final census

Items	Village	Households	persons
1	Sop On + Ka Oy	135	608
2	Bouama	74	353
3	Phonsavang	41	212
4	Done + Ka Oy	147	801
5	Khone Kaen	52	260
6	Nongboua - Keng Gnao	13	60
7	Nongboua Pilot Village		
8	Sop Ma	67	308
9	Sop Hia Area 8a	36	192
10	Sop Phene	57	239
11	Nakai Neua	93	406
12	Nakai Tai	197	831
13	Nongbouakham	57	300
14	Thalang	78	411
15	Phonphanpek	On going	On going
16	Oudomsouk	Under final revision	Under final revision

Please see also above remarks. The final figures of Vietic remaining in old Sop Hia are 14 HHs of 67 persons (now under relocating their house uphill at around 550 of some 340 m away from the existing housing location).

II. Consultation: No activity has been implemented with regard to house and agriculture plots selection and allocation. Agriculture plots are still to be allocated to Thalang resettlers and housing plots allocation for the entitled Oudomsouk impacted households will be carried out very soon.

III. Socio – Economic Data Collection (under Khone Kaen supervision-every six month)

These below are the figures of number of households surveyed/interviewed for all 14 villages. It is noted that Oudomsouk and Phonphanpek not yet included in the survey, since their census is not final yet and they have not been relocated yet.

This is the second survey done in this direction so far and now the data collected are in a final check by KKU Team.

No.	Village	No. of HH	No. HH (data collection)	Percentage
1	Nongboua – Keng Gnao	38	12	31.57%
2	Bouama village	74	23	31.08%
3	Phonsavang Village	41	13	31.70%
4	Sop On Village	135	36	26.66%
5	Done Village	147	41	27.89%
6	Khone Kaen Village	52	16	30.76%

7	Sop Phene Village	57	16	28.07%
8	Sop Ma Village	67	23	31.34%
9	Sop Hia, Nam Nian – Area 7	42	17	38.09%
10	Nongbouakham Village	57	18	31.57%
11	Thalang Village	76	22	28.94%
12	Sop Hia - Area 8	40	12	30%
13	Nakai Neua village	92	28	30.43%
14	Nakai Tai village	191	55	28.79%

There are also monthly basic income-expenditure data collection for each village households by our own CD Team (SRO+DWG and RMU). Results will be provided during next report. The results of the data collected will be inserted in Nakai server very soon, so as everyone interested can get access to easily.

The actual data collection is to be done by DWG CD staff in collaboration with VRC in each village. The problem is this is still new to them and they are practicing what have been trained, hoping step by step they can master these tasks in a long term and sustainability can be ensured. These data collected will be very useful for them to plan for village development by family planning as the basis to start with.

IV. Relocation Activities (Temporary)

All houses and assets below 533 have been relocated uphill for Nakai Tai and Nakai Neua, except Thalang where some 24 houses and one pagoda have been relocated within the permanent housing plots. 14 Vietic in old Sop Hia are being relocated uphill as described above and expected to be completed by 15 July 2007 (now some 6 houses have been built uphill out of 14).

There are also some 4 houses in Oudomsouk impacted by the coming flood level of 533 to be relocated, but only 2 households are entitled to receive new houses. These two households proposed to relocate in new permanent plots (in Area B), but under revision by the DWG. By 15 July these impacted households will be all relocated to a safe places.

V. Institutional Strengthening

No	Activities / Locations	Dates	Participants	Outputs
1.	Conduct Participatory Evaluation Workshop to VRC at Village level (Ban Done and Khone Kaen)	11/06/2007	SRO: 2 persons DWG: 2 persons 16 attendant (3 women)	Generally good
2.	Conduct Participatory Evaluation Workshop to VRC at Village level (Ban Sop Hia area 8a and Sop Ma)	12/06/2007	SRO: 2 persons DWG: 3 persons 17 attendant (4 women)	Generally good
3.	Conduct Participatory Evaluation Workshop to VRC at Village level (Ban Sop Phene, Nongbouakham and Thalang)	15/06/2007	SRO: 2 persons DWG: 1 person 18 attendant (6 women)	Generally good

Routine other institutional strengthening activities are now more and more taken care by normal GoL system/ organizations, such as Youth Association, Lao Woman Union and the Lao Front (Elders).

VI. Rice & Protein Support.

1. **Rice:** Table showing quantity provided in Kg per village

No.	Village	No. of HH	This month	Cumulated
1	Nongboua – Keng Gnao	9	618	9,816
2	Bouama village	74	5,502	78,060
3	Phonsavang Village	37	2,628	41,025
4	Sop On Village	137	9,372	131,134
5	Done Village	148	12,432	136,190
6	Khone Kaen Village	51	4,044	47,568
7	Sop Phene Village	57	3,624	50,520
8	Sop Ma Village	67	4,716	66,162
9	Sop Hia, Nam Nian – Area 7	44	3,348	13,433
10	Nongbouakham Village	57	2,551.2	12,346.8
11	Thalang Village	24	1,800	2,037
12	Sop Hia – Area 8a	40	3,000	40,684
13	Nakai Neua village	9	540	1,188
14	Nakai Tai village	25	1,638	3,600.6
15	Old Sop Hia	17	1,020	4,004

2. **Protein:** Table showing quantity provided (Dry and fresh meat) 0.2 kg/week/person in each village

No.	Village	No. of HH	This month			Cumulated		
			Dry meat (fish)	Fresh meat (fish)	Egg	Dry meat (fish)	Fresh meat (fish)	Egg
1	Nongboua – Keng Gnao	4	10.4	10.4	104	447.7	447.7	4,477
2	Bouama village	6	4.8	4.8	48	2544.6	2544.6	25,446
3	Phonsavang Village	4	9.6	9.6	96	1585.2	1585.2	15,852
4	Sop On Village	35	129.6	129.6	1296	5344.2	5344.2	53,442
5	Done Village	3	8.8	8.8	88	6898.6	6898.6	68,986
6	Khone Kaen Village	2	4	4	40	2257	2257	22,570
7	Sop Phene Village	3	5.6	5.6	56	1629	1629	16,290
8	Sop Ma Village	2	4	4	40	2639.2	2639.2	26,392
9	Sop Hia, Nam Nian – Area 7	44	181.6	181.6	1816	693.8	693.8	6,938
10	Nongbouakham Village	57	240	240	2400	780	780	7,800
11	Thalang Village	24	93.6	93.6	936	187.2	187.2	1,872
12	Sop Hia – Area 8a		0	0	0	1,788	1,788	17,880
13	Nakai Neua village	9	28	28	280	42	42	420
14	Nakai Tai village	25	85.6	85.6	856	128.4	128.4	1,284
15	Old Sop Hia	14	54	54	540	234.8	234.8	2348

VII. Education:

1. Teachers' salaries: number of teachers supported / amount paid

a. Primary school

No.	Village	Govt. teachers	This month	Employed Teachers	This month	Cumulated (2006-07)
1	Nongboua – Keng Gnao	2	400,000	1	400,000	14,400,000
2	Bouama village	1	200,000	1	400,000	8,400,000
3	Phonsavang Village	1	200,000			3,600,000
4	Sop On Village	3	600,000	1	400,000	12,200,000
5	Done Village	5	1,000,000	1	400,000	7,400,000
6	Khone Kaen Village			1	400,000	9,600,000
7	Sop Phene Village	1	200,000	1	400,000	7,800,000
8	Sop Ma Village			2	800,000	8,800,000
9	Sop Hia, Nam Nian – Area 7	1	200,000			600,000
10	Nongbouakham Village					
11	Thalang Village					
12	Sop Hia – Area 8a	1	200,000	1	400,000	4,000,000
13	Nakai Neua village					
14	Nakai Tai village					

- From July onward, there will be no school teaching (Off season Year 2006-07). The school will resume in September 2007
- Below is the table showing number of students and those who passed to higher classes next year

No.	Village	No. of students Male (Female)					No. of students – Examination passed Male (Female)				
		1 st	2 nd	3 rd	4 th	5 th	1 st	2 nd	3 rd	4 th	5 th
1	Nongboua – Keng Gnao	18 (7)	14 (9)	21 (13)	23 (12)		11 (5)	10 (7)	18 (12)	17 (11)	
2	Bouama village	29 (17)	14 (4)	17 (8)			18 (10)	10 (3)	15 (6)		
3	Phonsavang Village	25 (13)	8 (4)	8 (3)			9 (5)	7 (4)	7 (3)		
4	Sop On Village	39 (15)	32 (12)	27 (11)	27 (14)	48 (18)	13 (5)	23 (8)	19 (10)	20 (12)	42 (18)
5	Done Village	76 (36)	30 (13)	33 (21)	26 (10)	18 (11)	29 (18)	19 (12)	33 (21)	21 (9)	13 (10)
6	Khone Kaen Village	15 (8)	23 (12)	6 (2)			8 (6)	12 (8)	4 (2)		
7	Sop Phene Village	26 (10)	14 (10)	6 (3)			11 (3)	9 (9)	5 (2)		
8	Sop Ma Village	41 (31)	11 (5)	13 (5)			15 (12)	10 (5)	8 (2)		
9	Sop Hia, Nam Nian – Area 7	15 (7)	8 (5)	5 (0)			11 (7)	8 (5)	5 (0)		
10	Nongbouakham Village	26 (13)	12 (3)	13 (6)	8 (4)	11 (7)	7 (5)	12 (3)	12 (6)	7 (4)	11 (7)
11	Thalang Village										
12	Sop Hia – Area 8a	27 (8)	9 (3)	9 (1)	5 (3)		11 (2)	5 (1)	6 (1)	5 (3)	

b. Nursery school.

No.	Village	No. of teacher	This month	Cumulated (2006-07)	No. of Children Male (Female)	NTPC support (Lunch) per month	Cumulated (2006-07)
1	Nongboua – Keng Gnao	2	800,000		38 (23)	1,254,000	
2	Bouama village	4	1,600,000	17,600,000	68 (31)	2,244,000	24,684,000
3	Phonsavang Village	2	800,000	8,800,000	40 (18)	1,320,000	14,520,000
4	Sop On Village	4	1,600,000	17,600,000	85 (39)	2,805,000	30,855,000
5	Done Village	5	2,000,000	18,000,000	95 (45)	3,135,000	34,485,000
6	Khone Kaen Village	2	800,000	7,200,000	46 (15)	1,518,000	16,698,000
7	Sop Phene Village	2	800,000	8,800,000	37 (16)	1,221,000	13,431,000
8	Sop Ma Village	4	1,600,000	17,600,000	56 (21)	1,848,000	20,328,000
9	Sop Hia, Nam Nian – Area 7	2	800,000	2,400,000	37 (18)	1,221,000	
10	Nongbouakham Village						
11	Thalang Village						
12	Sop Hia – Area 8a	2	800,000	8,800,000	27 (16)	891,000	9,810,000
13	Nakai Neua village						
14	Nakai Tai village						

c. Non-formal education (4 months per year)

No.	Village	No. of teachers	This month	Cumulated (2006-07)	No. of students Male (Female)
1	Nongboua – Keng Gnao	2	400,000	4,400,000	27 (25)
2	Bouama village				
3	Phonsavang Village	1	200,000	1,600,000	35 (24)
4	Sop On Village	2	400,000	4,400,000	60 (37)
5	Done Village				
6	Khone Kaen Village	2	400,000	3,600,000	35 (26)
7	Sop Phene Village				
8	Sop Ma Village	2	400,000	3,600,000	56 (21)
9	Sop Hia, Nam Nian – Area 7				
10	Nongbouakham Village				
11	Thalang Village				
12	Sop Hia – Area 8a	1	200,000	800,000	25 (11)
13	Nakai Neua village	1	200,000	1,600,000	
14	Nakai Tai village	2	400,000	3,200,000	
15	Sop Hia - Old				

VIII. Off – Farm Income Support**Village Development Fund Committees establishment (as part of institutional strengthening and economic support program)**

No.	Item	This month	Cumulated	Remark
1	Set up village development fund committee (district level)		100%	In function
2	Village development fund – Rule + Role and duties for VDF committee (District level)		80%	Under revision
3	Village Revolving fund Committee establishment (VRFC)– Village level		20%	On going
4	Village development fund – 4 villages	40.9%	90.9%	Table a

Notes: This is to support villagers in managing their own resource as a strong community and to provide funds for those who need for their off-farm income generating activities. The committees are supposed to steer the various resources of the villages for the benefits of all villagers, especially the vulnerable households. The policy is that when villagers can organize themselves to create village fund to a significant amount, the Project will provide fund in support to be able to release revolving funds to members who need to invest in micro-schemes, screened to be cost-effective and realistic.

Village Revolving Fund (Pasason Fund) -

4 villages already established: Area 7, Area 8a, Nongbouakham, Phonsavang.

Table: Saving Group (Managed by: District Lao Women Union) - 2 villages established

No.	Village	No. of members	Saving Deposit	Interest	Total Loans	Current total fund	Remark
1	Bouama	21	1,141,000	577,000	4,300,000	57,000	
2	Done	36	245,000			0	Established this month
3	Khone Kaen	47	265,000		500,000	0	Established this month
4	Nongbouakham	22	6,040,000	1,453,000	2,480,000	12,400,000	

1. Table showing actual Village Revolving Funds raised

No.	Village	Establish date	No. of members	Cumulated	Saving (this month)	Percentage of membership
1	Nongboua – pilot village	22/5/2007	39	193,000	115,000	100%
2	Bouama village	14/5/2007	74	655,000	285,000	71.62%
3	Sop On village	9/5/2007	135	538,000	270,000	99.25%
4	Done village	12/5/2007	110	428,000	220,000	74.82%
5	Sop Ma Village	26/5/2007	65	625,000	325,000	97.01%
6	Sop Phene Village	30/5/2007	53	755,000	510,000	82.45%
7	Area 7	19/6/2007	47	235,000	235,000	100%
8	Area 8a	26/6/2007	39	390,000	390,000	100%
9	Nongbouakham village	21/6/2007	47	470,000	470,000	82.45%
10	Phonsavang village	23/6/2007	30	150,000	150,000	73.17%

It is noted that saving from each village is still low, it is planned to increase contributions from members, so as the Village funds will be large enough to release micro-credits to members who need them to invest in small, but realistic and cost-effective income generating schemes.

2. Income derived from off – farm activities

2.1 Weaving group (Sop Hia Area 8a) and Area 7

Table 2: showing actual incomes derived from Weaving as one of many off-farm activities

No.	Village	Incomes derived from Weaving off-farm activities		Remark
		This month	Cumulated	
1	Sop Hia – Area 8 (12 pers.)	Started – Jan 2007		
		788,000	1,108,000	
		408,000		
		512,000		
		300,000		
		90,000		
		384,000		
	All Villagers combined			
2	Sop Hia – Area 7	Started –mid of June 2007		
	All Villagers combined	285,000		
		352,000		
		330,000		
		192,000		
		255,000		
		285,000		
		225,000		

2.2 Wicker work: On going results will be monitored and will be reported later on

2.3 Tailoring funds: on going

No.	Village	Income derived from Tailoring off-farm activities	
		This month	Return to fund
1	Nongboua (2 pers.)		
	All villagers combined	340,000	100,000
		300,000	100,000
2.	Sop On (3 fund)		1,100,000
	All villagers combined	183,000	

3. Consultation with Sop On villagers to encourage them to put their incomes (derived from the Project labor inputs) in the BCEL bank – Khammouane branch in their personal saving accounts (saved in BCEL).

No.	Village	No. of House hold	Amount (Kip)	Remark
1	Sop On village	105	22,635,000	(2 HH have no family registration book).

It is noted that quite a large amount of money received from the labor inputs with Project activities, so out of these incomes (part of them) can be invested in small off-farm activities and contribution to the Village Revolving or Development Funds as described above.

IX. Grievance

No.	Village	No. of Grievance	New Grievance for this month	Grievance closed Total	Grievance close during This month	Total grievances still open
1	Nongboua – Keng Gnao	1	0	1	0	0
2	Bouama village	6	0	6	0	0
3	Phonsavang Village	4	0	4	0	0
4	Sop On Village	4	0	4	3	0
5	Done Village	44	0	44	0	0
6	Khone Kaen Village	2	0	2	0	0
7	Sop Phene Village	1	0	0	0	1
8	Sop Ma Village	1	0	1	0	0
9	Sop Hia, Nam Nian – Area 7					
10	Nongbouakham Village					
11	Thalang Village	1	0	0	1	0
12	Sop Hia Area 8a					
13	Nakai Neua village					
14	Nakai Tai village					
15	Oudomsouk	38	32	1	0	37
16	Phonphanpek	6	6	0	0	6

Remark: One case from Thalang has submitted to provincial Grievance Committee to resolve after the case was not satisfied by the claimer after District Grievance Committee has tried to resolve the case.

X. Vulnerable households Support**Summary of vulnerable HHs to be supported**

No.	Village	No. of Vul.	New family to be support this month	Same family to be support this month	Total to be supported	No. of Vuln. support (Cumulated)
1	Nongboua – Keng Gnao	8	0	2	2	8
2	Bouama village	6				4
3	Phonsavang Village	4	1	2	3	4
4	Sop On Village	14	1	2	3	10
5	Done Village	5	0	1	1	4
6	Khone Kaen Village	5	0	0	0	4
7	Sop Phene Village	8				8
8	Sop Ma Village	7	0	3	3	7
9	Sop Hia, Nam Nian – Area 7	1				0
10	Nongbouakham Village	2				0
11	Thalang Village	4				0
12	Sop Hia (Old)					
13	Nakai Neua village	3				0
14	Nakai tai village	10				0

VRC Participatory Evaluation Workshop at village level



Social Activities

Downstream Areas

2.4 Downstream Areas Development Plans

Downstream Program - status at end of June 2007

Key dates for the DS program :

- feb 2009 : 3 m3/s on average (first tests of Pelton)
- March 2009 : 5 m3/s on average (tests of Peltons)
- April 2009 : 20 m3/s on average (first tests of Francis 1 + tests on Peltons)
- June 2009 : 40 m3/s
- July 2009 : 90 m3/s
- Nov 2009 : 225 m3/s

Direct impacts are expected to be :

- Reduced water quality and / or higher turbidity (and related fish resource depletion)
- Increased flooding (Lower XBF)
- Possible increased river bank erosion

They will translate into social impacts through :

- fisheries
- access to domestic water
- riverbank gardens
- agricultural and livestock production
- assets and housings (for those located close to the riverbank)

The DS program aims at compensating, directly or indirectly, these potential impacts.

RIPARIAN							
Total villages Riparian : 86	target end 2014 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit
VDCC + Villages comitees establishment	86	86	86	39	14	0	Village
Mini-Polders	+/- 25	5	5	5	0	0	Mini-Polders
Flood gates rehabilitation	14	7	0	0	0	0	Gates
Water supply (tube wells)	+/- 470	+/- 470	+/- 470	+/- 65	0	0	Tubes Well
(WA)SH program (including sanitation facilities)	86	86	82	19	0	10	Village
Agriculture, horticulture - TA + support	86	86	86	39	0	14	Village
Livestock - TA + support	86	86	86	39	0	14	Village
Fisheries co-management (villages component)	86	86	86	0	0	0	Village
Aquaculture	86	86	86	46	0	14	Village
Saving and Credit	86	86	86	39	0	14	Village
Handicraft	86	86	86	31	0	7	Village

HINTERLAND							
Total villages Hinterland : 97	target end 2014 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit
VDCC + Villages comitees establishment	97	59	7	7	6	0	Village
Water supply (tube wells)	0	0	+/- 15	+/- 15	0	4	Tubes Well
(WA)SH program (including sanitation facilities)	97	59	6	7	0	2	Village
Agriculture, horticulture - TA + support	97	6	6	7	0	7	Village
Livestock - TA + support	97	6	6	7	0	7	Village
Fisheries co-management (villages component)	97	97	50	0	0	0	Village
Aquaculture	97	97	TBA	7	0	6	Village
Saving and Credit	6	59	6	7	0	6	Village
Handicraft	0	0	6	3	0	3	

Downstream of the dam							
	target end 2014 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit
Fisheries co-management (villages component)	37	12	6	0	0	0	Village
Saving and Credit	0	37	37	37	0	0	Village
Handicraft							

Total villages : the total number of villages identified as potentially impacted by NT2 operation in the so called "Downstream Areas" is 221 at end February, based on new results of fish catch monitoring program. Qualification as "Hinterland" and "Riparian" villages is being reviewed and improved. The reporting since February 2007 includes a third specific category for the 38 villages located downstream of the dam (they were previously reported in the 2 categories : Hinterland and Riparian)

2.4.1 General overview

- Sanitation awareness training continued in pilot villages
- Agreement reached for NTPC water supply improvement activities in 9 villages
- Fish catch monitoring continued.
- Water level staff gages were installed in 11 target villages to record wet season water levels
- A 4 day workshop to improve village fund management was conducted with relevant DWG and VDCC members.

2.4.2 Baseline Studies, Monitoring

Baseline Studies / Monitoring

Further planning was undertaken during the reporting period regarding monitoring with regards to meeting the Concession Agreement obligations. At present, NTPC expects to complete the next cycle of data collection in early 2008.

2.4.3 Reports & Meetings

Meetings

The Downstream Program section leader meeting is held every Tuesday morning followed by a meeting with representatives from the RMU. There is also a monthly Downstream Program staff meeting. Minutes of the meetings are prepared and distributed to staff members for information dissemination and follow through.

Reports

Preparation of a consolidated Downstream Program Implementation Plan is ongoing.

2.4.4 Administration

Personnel issues

Four additional drivers were recruited during the reporting period to support the increasing level of field activity being undertaken by the Downstream Program.

The following staff will be recruited for Downstream Program by August 2007:

- Hygiene/Sanitation specialist (in addition to existing specialist): Interviews were completed in June 2007.
- Aquaculture specialist

Support Engineer: Advertising and collection of resumes began in mid-June. Interview and selection of a candidate will be completed during July.

2.4.5 GOL Coordination

During the reporting period, the Downstream Program team held a special coordination meeting with the RMU to discuss the approach to be used to expand the downstream program in 2007 to additional villages.

2.4.6 Community Organization / Village Development Fund

Village Organization – VDCC

A four day workshop, aimed to improve village fund management, was attended by 25 VDCC members from 10 villages and representatives from 6 DWGs. The main purpose of this workshop was to improve VDCC skills in community leadership and to allow the represented villages to exchange experiences in managing their village saving & credit funds.

A community development facilitator from Thailand was hired to facilitate the workshop. The facilitator worked closely with representatives from the RMU and DWG.

The CD team also conducted a self-evaluation exercise during the workshop. This activity aimed to do the following:

1. Determine if the VDCC understood the procedures and mechanism of the NT2 Village fund.
2. Identify actual benefits that Villagers obtained through the NT2 funds.

Feedback collected from the workshop indicated that there is a strong demand from villages to have more on-the-job training regarding accounting procedures and methodology on participatory approaches.

Village Revolving / Saving Funds

During the reporting period numerous villages submitted requests to borrow money from the NT2 Village fund to finance wet season rice activities. Funds would be utilized to purchase fertilizer, to prepare land, and in some instances, to pay for labor.

Unfortunately, Village fund rules stipulate that new loan requests cannot be processed or approved until outstanding loans (bad debts) have been fully paid. Due to problems during the dry season rice period, a number of households have been unable to pay off their initial debt, namely Ban Povaneua (45 Hh), Hatkhamhieng (20 Hh) and Veunsivilai (20Hh).

Please refer to table 2 and 3, which provide information on the monthly cash flow and the revolving / savings fund program:

Monthly Cash Flows June 2007

A	B	C	D	E	F	G	H	I	J	K	L**
No.	Village Name	No. Members in S&C Group (HH)	Total NTPC Funds Transferred to VDCC Bank A/c to Date.	Total Savings Received from Members	Total Revenue Received from Sale of Passbook, Regn Fee, etc	Total Interest Paid by Bank to VDCC Bank A/c	Total Interest Received from Members Loans	Accumulated Expenses Paid to Date	Members Savings Returned (Sharing Devised)	Members Bad Debts Written Off	Current Total S&C Group Fund Value
	Gnommalath District	205	542,000,000	47,242,000	1,349,000	8,217,588.46	16,283,000	687,000	393,000	-	614,011,588
1	Phathung	80	150,000,001	18,940,000	516,000	2,138,262.25	7,417,000	544,000	-		178,467,263
2	Nongping	60	229,999,999	19,090,000	400,000	3,430,614.59	4,929,000	7,000	274,000		257,568,614
3	Khoksavang	65	162,000,000	9,212,000	433,000	2,648,711.62	3,937,000	136,000	119,000		177,975,712
	Mahaxay District	395	1,198,056,546	222,760,000	4,098,000	15,796,216.60	55,702,000	2,317,500	364,000	-	1,493,731,263
4	Mahaxaitai	135	461,728,369	127,211,000	1,685,000	6,207,182.18	15,288,000	467,000	364,000		611,288,551
5	Povaneua	90	220,075,519	31,828,000	1,011,000	2,716,927.69	13,512,000	694,500			268,448,947
6	Povatai	92	278,485,338	55,406,000	745,000	3,443,337.69	21,515,000	909,000			358,685,676
7	Khamfeuang	78	237,767,320	8,315,000	657,000	3,428,769.04	5,387,000	247,000			255,308,089
	Xebangfai District	376	1,336,588,029	93,440,000	3,436,000	17,784,779.33	44,061,500	4,737,000	550,000	-	1,490,023,308
8	Kengpe	65	178,035,291	6,254,000	980,000	3,106,916.83	7,071,000	745,000			194,702,208
9	Veunsananh	8	144,379,350	3,433,000	270,000	1,659,046.37	2,901,000	243,000			152,399,396
10	Hatpek	26	65,999,984	1,220,000	180,000	1,285,980.91	-	135,000			68,550,965
11	Yangkham	172	484,947,196	37,933,000	1,305,000	6,227,229.37	15,834,000	3,426,000			542,820,425
12	Hatkhamhieng	105	463,226,208	44,600,000	701,000	5,505,605.85	18,255,500	188,000	550,000		531,550,314
	Nongbok District	206	490,883,928	78,777,000	3,359,000	6,082,375.68	56,427,500	3,189,500	32,067,000	-	600,273,304
13	Hatxaifong	55	104,999,974	7,158,000	1,024,000	1,231,468.57	12,101,000	768,000			125,746,443
14	Navangneua	151	385,883,954	71,619,000	2,335,000	4,850,907.11	44,326,500	2,421,500	32,067,000		474,526,861
	Xaybuly District	512	1,061,365,164	114,055,500	4,618,000	15,438,673.40	62,851,000	2,092,500	-	-	1,256,235,837
15	Veunsivilai	68	227,862,395	29,238,000	826,000	2,788,577.63	7,594,000	656,000			267,652,973
16	Beungxe	79	215,799,326	36,701,000	827,000	4,004,831.95	27,412,500	426,000			284,318,658
17	Beung Xe (AC SVK)		90,703,574	-	-	45.83	-	-			90,703,620
18	Beungbouathong	112	131,999,967	17,239,000	798,000	2,434,253.16	4,963,500	152,000			157,282,720
19	Nasang	102	195,999,951	12,405,000	1,048,000	2,747,481.75	14,475,000	598,500			226,076,933
20	Thaphoxai	105	108,999,973	11,100,500	592,000	2,038,396.04	3,146,000	181,000			125,695,869
21	Nonenakham	46	89,999,978	7,372,000	527,000	1,425,087.04	5,260,000	79,000			104,505,065
		1,694	4,628,893,667	556,274,500	16,860,000	63,319,633.47	235,325,000	13,023,500	33,374,000	-	5,454,275,300

Table 2. Monthly Cash Flow to date

Fund Activity		For June 2007									
No.	Village Name	Total No. Loans Disbursed to Date	Total Value of Loans Disbursed to Date (Kip)	Total No. Loans Repaid	Total Value Loans repaid (Kip)	Total Number Loans Outstanding but Not Yet Due Loans	Total Value of outstanding but not Yet Due Loans (Kip)	Total Number Loans Outstanding and Past Due (Loans)	Total Value of Past Due Loans	Number of Loans Written Off	Value of Loans Written Off (Kip)
	Gnommalath District	69	203,180,000	28	54,736,000	34	132,694,000	14	15,750,000		
1	Phathung	69	61,500,000	28	20,800,000	34	30,200,000	7	10,500,000		
2	Nongping		89,380,000		9,586,000		77,894,000	1	1,900,000		
3	Khoksavang		52,300,000		24,350,000		24,600,000	6	3,350,000		
	Mahaxay District	652	944,195,000	215	297,286,000	386	556,308,000	51	90,601,000		
4	Mahaxaitai	172	299,210,000	62	89,936,500	106	203,707,000	4	5,566,500		
5	Povaneua	184	234,693,000	29	77,059,500	119	113,049,000	36	44,584,500		
6	Povatai	180	261,787,000	47	72,690,000	124	154,097,000	9	35,000,000		
7	Khamfeuang	116	148,505,000	77	57,600,000	37	85,455,000	2	5,450,000		
	Xebangfai District	359	730,471,000	100	284,704,500	206	385,538,000	53	60,228,500		
8	Kengpe		66,469,000		14,743,000		51,726,000				
10	Veunsananh	62	74,862,000	3	500,000	35	59,862,000	24	14,500,000		
10	Hatpek		12,200,000		-		12,200,000				
11	Yangkham	130	296,730,000	61	127,756,500	56	148,395,000	13	20,578,500		
12	Hatkhamhieng	167	280,210,000	36	141,705,000	115	113,355,000	16	25,150,000		
	Nongbok District	278	391,807,000	24	308,031,000	54	83,776,000	-	-		
13	Hatxalfong	78	91,050,000	24	58,370,000	54	32,680,000				
14	Navangneua	200	300,757,000		249,661,000		51,096,000				
	Xaybully District	347	928,451,500	215	461,498,000	109	393,408,500	23	73,545,000		
15	Veunsivilai	97	150,047,500	58	87,257,500	39	62,790,000		-		
16	Beungxe	197	395,172,000	145	249,965,000	29	71,662,000	23	73,545,000		
17	Beung Xe (AC SVK)						-				
18	Beungbouathong		69,103,500		26,843,500		42,260,000				
19	Nasang		209,581,500		75,317,500		134,264,000				
20	Thaphoxai		47,358,000		9,874,500		37,483,500				
21	Nonenakhom	53	57,189,000	12	12,240,000	41	44,949,000				
		1,705	3,198,104,500	582	1,406,255,500	789	1,551,724,500	141	240,124,500	-	-

Table 3. Fund activity to date

2.4.7 Livelihoods

General

Livelihood development activities in the 20 pilot villages continued during the reporting period.

In June most farmers have been fully occupied with planting the wet season rice crop. Consequently, NTPC staff encountered difficulties in engaging villagers with non-rice related activities. Additionally, many villages are becoming harder to access due to the lack of all-weather access roads, such as Khamfeuung, Hatpek, Veunsananh, and Kengpe.

Agriculture

Wet season vegetable: 4 HH in Ban Pova and Mahaxaitai, with a total area of 2,000 m², have been selected to demonstrate wet season vegetable production. The species selected include coriander, green onions, lettuce, morning glory, and Chinese cabbage. The production is mainly targeted to be sold, though a small portion could be allocated for household consumption.

Cassava : 8 HH in Ban Khoksavang, with a total area of 3,200 m², have been selected to demonstrate Cassava production. Four varieties have been selected, 2 suitable for human consumption and 2 for animal feeding.

Pineapple planting: Pineapple seedlings have been distributed to 4 villages; 2 villages for single crop demonstration, and 2 villages for intercropping demonstration.

- 400 seedlings will be used for single crop demonstration in Hatpek.
- 400 seedlings will be used for integrated cropping demonstration (mixed with Jatropha) in Veunsananh.
- 1,200 seedling will be used for single crop demonstration in Ban Khoksavang
- 600 seedling will be used for integrated cropping demonstration (mixed with Jatropha & rice) in Kengpe

Jatropha planting and integrated cropping

- **Ban Kengpe:** 80% of the Jatropha seedlings in the nursery have been planted in individual household fields. The remaining amount of seedling will continue to be planted in July
- **Ban Veunsananh:** 40% of the Jatropha seedlings in the nursery have been planted, the remaining amount of seedling will continue to be planted in July.

Small scale integrated farming trial (Ban Veunsananh): 6 HH have been selected to demonstrate small scale integrated farming, combining fish ponds, Jatropha and some crops (pineapple, morning glory, forage, as well as others).

Flood resistant rice trials: Following agreements made in May 2007, a workplan was developed and submitted to ARC in Vientiane. To date no progress has been made regarding seed delivery.

Trade and marketing: A meeting with the head of the Provincial Trade Department (PTD) was organized on 12 June 2007 with representatives from the RMU and NTPC attending to discuss cooperation for trade and marketing. The PTD has agreed to nominate a coordinator to work with the Downstream Program.

Livestock and veterinary

Forage for animal and fish feeding: 54 HH in 5 villages within 4 Districts participated in demonstrations of techniques for forage establishment. Participants included:

- **Gnommalat District** : 15 fish farmers (Ban Nongping)
- **Mahaxai District**: 21 fish farmers (Ban Mahaxai) and 13 pig/fish farmers (Ban Pova)
- **Nongbok District**: 2 fish farmers (Ban Navangneua)
- **Xaibouli District**: 3 pig/fish farmers (Ban Beungxe)

Piglet production

- 2HH in Ban Hatpek and Beungbouathong have been selected for piglet demonstration. Pig pen construction has already been completed.

Village Veterinary Workers (VW)

- Technical support and monitoring for pig raising groups was conducted in 10 villages with VW.
- The following training courses (Table 4) were provided for the VW in the last six months:

No.	Subject	No. attend	No. Women
1	VW training on animal health care	27	8
2	Castration	8	3
3	Pig diseases	16	8
4	Treatment of sick pigs	16	8
5	Animal data collection	10	2

Table 4. Training Courses

Other Activities

- The draft questionnaire for the home garden program was completed.
- The draft questionnaire for the new 2007 target village was completed.
- The Q3/07 Budget has been prepared

- Two missions to follow up with villagers who have borrowed village funds, but not repaid, for land clearing in Ban Veunsananh have been conducted
- Family business plans: 250 business plans from 10 villagers have been reviewed

Aquaculture

A summary of Downstream aquaculture activities is included in table 5:

No.	Village (Ban)	District	#. fish ponds constructed with support from NTPC	# of existing fish pond with support from NTPC	# HH who raise catfish	# of community fish ponds with support from NTPC	# HH who produce fish fry	Total # of HH involved in Fish culture activities
1	Phathoung	Gnommalat		3				3
2	Nongping	Gnommalat		20	4			24
3	Khoksavang	Gnommalat				1(5 HH)		5
4	Mahaxaitai	Mahaxai	29	7				36
5	Pova Tai	Mahaxai	25	4				33
6	Povaneua	Mahaxai		4				
7	Khamfeuung	Mahaxai	24 (33 HH)			1 (1 HH)		34
8	Kengpe	Xe Bangfai			2			2
9	Veunsananh	Xe Bangfai				2 (7 HH)		7
10	Hatpek	Xe Bangfai			1			1
11	Yangkham	Xe Bangfai		6				6
12	Hatkhamhieng	Xe Bangfai		10				10
13	Hatxaifong	Nongbok		4	2			6
14	Navangneua	Nongbok	17	7			1	25
15	Veunsivilai	Xaibouli		7	1			8
16	Beungbouathong	Xaibouli						0
17	Nasang	Xaibouli			2			2
18	Thaphoxai	Xaibouli						0
19	Nonenakham	Xaibouli						0
20	Beungxe	Xaibouli	15	2			2	19
Total			110	74	12	4	3	221

Table 5. Downstream Aquaculture activities

Handicraft

During the reporting period the following activities were conducted:

In-house marketing of handicraft products was tested during annual NT2 stakeholders' forum on 27 June 2007. Weaving group leaders in each district were requested to prepare products to sell.

Table 6 below shows the products sold and profit made at the stakeholder conference.

Village's name	District	Cotton Productions	Cash received (Kip)
Nongping	Gnommalat	Cover table, neckerchief, blanket covers, cotton cloth, refrigerator covers and bed sheet	2,744,000
Pova	Mahaxaitai	Cover table, neckerchief, handkerchief, blanket covers, cotton cloth and cushions	3,725,000
Beungbouathong	Xaibouli	Neckerchief, blanket covers, local towel.	2,106,000
Veunsivilai	Xaibouli	Handkerchief, blanket covers, grass mat and Lao skirt	906,000
Beungxe	Xaibouli	Lao skirt	150,000
Kengpe	Xe Bangfai	Neckerchief	168,000
Total:			6,014,000

Table 6. Handicraft products sold and profit made from the Stakeholder's Conference

Approximately 90% of the products provided by the weaving groups were sold during the forum, with orders for additional materials as well. Customers expressed a high level of interest in the production process, especially natural dying techniques.

As a result of the forum sales experience, weaving groups have an increased interest in exploring additional special event markets, such as during the boat raising festival in October and That Luang festival in November.

However, adjustments will need to be made for future events to ensure sustainable marketing / sales of the handicrafts as most of the marketing and logistical arrangements were supported directly by NTPC staff. Also, product prices did not incorporate costs associated with transport and administration.

2.4.8 Infrastructure Related Activities

Water Supply / Sanitation / Hygiene (WASH)

Downstream WASH staff conducted the following activities during the reporting period:

WASH Coordination meetings

Each month a district / provincial coordination meeting is held to discuss progress made during the past month and to identify and solve problems encountered. Two representatives from each of the five districts participated (one representative for water supply and one representative for sanitation / hygiene).

Sanitation & hygiene training / awareness

Sanitation and hygiene training at village level for four villages was conducted in Ban Sangkeo, Pova, Phathoung, Khoksavang, which attracted a total of 206 participants (146 of which were female).

Sanitation construction

Transportation of material to project villages:

- Majority of the material has been delivered to first five target villages. Some small items being supplied for school and health centers sanitation facility construction (such as wooden doors, door frames, screws, door hinges etc.) have not been delivered yet.

Sanitation construction for individual households, schools and health centers:

- Construction of household village toilets continued during the reporting period, within 8 of the pilot villages. Table 7 presents the updates regarding sanitation construction.

	Participating # HH	Construction Progress (toilets completed)	Construction Progress (%)
Khoksavang	22	0	0%
Hatkhamhieng	99	0	0%
Yangkham	159	78	50%
Mahaxai (Tai/Kang/Neua)	206	0	0%
Pova (Tai & Neua)	131	11	10%
Khamfeuang	22	13	70%
Veunsananh	16	2	10%
Kengpe	38	4	10%
Total	760	108	

Table 7. Village sanitation construction update

Water supply improvements

Consultations were held in 9 villages to reach agreement on what activities NTPC would support regarding improved water supply. All 9 villages have accepted boreholes (BH) equipped with Afridev hand pumps or local hand pumps and / or open dug wells. A summary of the agreements made is as follows:

- Ban Khamfeuang: 1 new BH (Afridev hand pump), 1 BH (Local hand pump) and 6 DW
- Ban Mahaxai: 15 new BH (Afridev hand pump)
- Ban Pova: 10 new BH (Afridev hand pump)
- Ban Phathoung: 1 new BH (Afridev hand pump), 1 BH (local hand pump) and 8 DW
- Ban Khoksavang: 3 new BH (Afridev hand pump), Replace three existing hand pump with Afridev
- Ban Kengpe: 4 new BH (Afridev hand pump)
- Ban Veunsananh: 2 new BH (Afridev hand pump), Replace two existing hand pump with Afridev
- Ban Yangkham: 10 new BH (Afridev hand pump)
- Ban Khoksavang: 7 new BH (Afridev hand pump), Replace three existing hand pump with Afridev

Asset Protection and / or Relocation (APR)

APR activities are separated into the following components:

- riverbank garden replacement
- access restoration / replacement
- structure relocation / protection (including those identified as being a physical cultural resource)
- irrigation pump modification

Riverbank garden replacement activities

- A field visit to the Theun-Hinboun Hydroelectric Project area was conducted to help develop plans for NT2 activities.
- Preliminary planning with the livelihood team in Ban Kengpe have continued.
- A meeting with RMU representatives was held on 9 June to discuss options for riverbank garden replacement
- On 14 June 2007, villagers in Ban Kengpe were consulted to obtain their inputs regarding riverbank garden replacement. In total there were approximately 50 village participants, including 38 impacted persons registered with a total impacted area of around 1.4 hectares

Irrigation activities, including Operation & Maintenance

No irrigation (including O&M) activities were undertaken during the reporting period.

Water Gate rehabilitation

Preliminary surveys for 8 of the 14 water gates included within the Downstream Program have been completed. A detailed survey form was developed which will be used when structures are further evaluated in the future.

Mini-polder construction

A topographic survey for a one mini-polder scheme was completed during February. The scheme includes 5 villages: Yangkham, Hatkhamhieng, Somsaat, Naphoktha, and Namphou, three of which are pilot villages. During the months of March and April, processing of the field survey data was completed and preliminary design drawings prepared. During the reporting period:

- Design drawings have been revised to improve side drainage and further refinements of cost estimates were made.
- Staff gauges have been installed in 11 target villages to measure wet season water levels (Table 8):

No.	Village	District
1	Namphou	Nongbok (3 stations)
2	Hatxaifong	
3	Navangneua	
4	Beungxe	Xaibouli (3 stations)
5	Nasang	
6	Thaphoxai	
7	Hatkhamhieng	Xe Bangfai (5 stations)
8	Hatpek	
9	Kengpe	
10	Veunsananh	
11	Yangkham	

Table 8. Villages with installed staff gauges

UXO Activities

UXO clearance was undertaken in Ban Mahaxai and Ban Pova (Mahaxai District) to support water supply construction.

2.4.9 Fish Catch Monitoring

Fish catch monitoring is ongoing in 49 villages located in 3 different downstream areas, namely:

- (i) Downstream Nakai Dam, 11 Villages in Khamkeut District,
- (ii) Downstream Power Station, 28 Villages in 5 Districts, and;
- (iii) Upstream Reservoir Nam Theun Watershed, 10 Villages in Nakai district,

Downstream Nakai Dam

Two Khamkeut District staff are implementing and supervising the fish catch monitoring activities. Presently, they are in the process of interviewing individual households (20 households at each of the 11 villages) and also supervising 5 households in each of the 11 villages with the monitoring of daily fish catch.

During group interviews and profile meetings in 47 villages, 37 villages were identified that are potentially impacted by NT2, as seen in table 10.

The 37 villages are potentially impacted by NT2 as a result of:

- (i) less fish catch opportunities in Nam Theun, and;
- (ii) less fish catch of fish species that migrate from Nam Theun to the tributaries as Nam Phao, Nam Katha, Nam Ngoy, and Nam Kheo.

Fish catch is expected to decline as a result of different Nam Theun discharges after COD. Figure 1 below shows the different discharge rates for the Nam Theun.

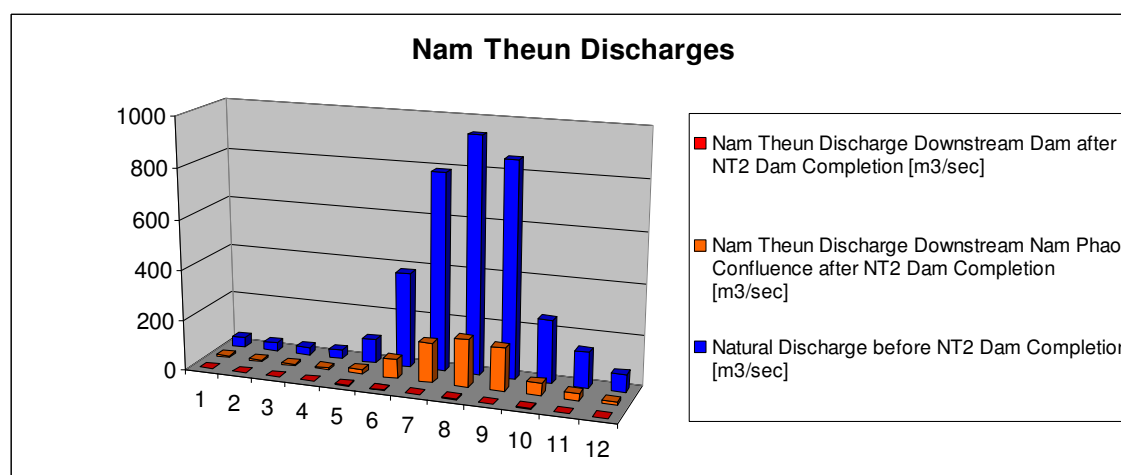


Figure 1. Nam Theun discharges

The outcome of group meetings and interviews in 37 villages downstream of the dam was that in total, 926,013 kg of fish is caught per year. Table 9 shows fish catch per fishing ground and the number of households that fish in each site.

Fishing Ground	Fish Caught [kg/year]	Number HH	Fish Caught [kg/hh/year]
Nam Theun	313,790	1,815	173
Tributaries	324,550	3,333	97
Wetlands	266,958	4,115	65
Nam Xot	20,715	289	72
Total	926,013	4,958	187

Table 9. Fish catch distribution

The total average annual fish catch per household in Khamkeut District is 187 kg of fish per year. With an average number of 5.5 persons per household, the total fish catch equates to 34 kg of fish per person per year. This is considered to be a very realistic outcome for areas in Lao PDR where most of the villages are located along rivers and streams. However, this number will be checked and calibrated with the ongoing fisheries monitoring exercises that include (i) personal interviews, and (ii) daily household fish catch monitoring.

Of the total annual fish catch of 926,013 kg in 37 villages, only 200,853 kg is roughly estimated to be potentially lost as a consequence of NT2. This potential loss is equivalent to 41 kg of fish per household per year, or 7 kg of fish per person per year.

During the consultations, profile meetings, and group interviews were held in 47 villages and it became apparent that significant impacts on fisheries and fish species are occurring already, well before Nam Theun discharges are to be affected by NT2.

In the perception of villagers living downstream of NT2 dam site, the average annual household fish catch has declined as much as 80 % over the last 10 years. Villagers identified the following reasons for such massive decline in household fish catch:

1. Population growth; more people thus more fishers. If, in the same area, there are more fishing households utilizing the same carrying capacity, then the average catch per household declines.
2. Over-fishing. With few fisheries management rules and regulations in place, people use more fishing gear and more large scale fishing methods. Some villagers block off rivers and streams to intercept fish migrations.
3. Destructive fishing practices. Particularly in the Nam Theun, destructive fishing practices are ongoing, mainly with the use of explosives.
4. Better access to fishing grounds and better access to villages lead to more opportunities for households to trade fish for cash. Households used to fish mainly for personal/family consumption only.
5. The more recently started and ongoing gold mining and dredging operations, have contributed to significant changes in aquatic habitats as well changes in water quality (specifically turbidity) that has affected household fish catch.
6. There is severe sedimentation of rivers and streams in Khamkeut District due to (i) road construction accompanied by quarrying along rivers and streams, (ii) shifting cultivation, (iii) landslides, (iv) gold mining, (v) floods, and (vi) river bank erosion. Villagers generally state that depth of rivers and streams has become less, and width of rivers and streams has increased. In addition, deep pools that are important fish habitats in the tributaries have been filled in as a result of ongoing sedimentation.
7. Fish diseases occur regularly in Khamkeut District. Especially during the cold months of the year in January, February fish kills are observed. In some particularly cold years, massive fish kills have occurred (1975). Disease outbreaks occur mainly in the dry season.
8. Theun-Hinboun dam and headpond.

As a result of the existing and ongoing impacts on fish populations, household fish catch has declined as much as 80 % during the last 10 years. Household fish catch is highly likely to deteriorate more before COD.

The table on the previous page shows clearly which villages are potentially to be impacted by NT2, however the table does not show all the villages where there are severe existing and ongoing impacts on household fish catch that are not related to NT2.

Upstream of Nakai Reservoir in the Watershed Area

Presently, 41 households from 10 villages have been selected after completion of Profile Meetings. Four Supervisors have been recruited to supervise the daily fish catch monitoring (see table 10).

District	Impact zone	Village	Total Number of HH in the Village	No. of Elected HH Monitors
Nakai	Nam Xot	Songkhone	42	4
	Nam Mone	Navang	59	2
		Kaching	35	3
	Nam Theun	Vangchang	50	5
		Xoklek	64	5
		Puong	15	3
	Nam Ngoy	Maka	58	5
		Dteung	53	4
		Vangkhoutay	50	5
	Nam Pheo	Houay Sarn	27	5
Total		10	453	41

Table 10. Identified Villages and numbers of monitors and supervisors

From information collected during the profile meetings Table 11 shows the following fish species which are most commonly caught by households:

No.	Common Name	Scientific Name	Percent of Total Fish Catch Species
1	Pa Kachay or Pa Langnam	<i>Mystacoleucus sp.</i>	80
2	Pa Mom	<i>Scaphiodonichthys acanthopterus</i>	
3	Pa Xa	<i>Bangana elegans</i>	
4	Pa Chad hangkheo	<i>Poropuntius laoensis</i>	
5	Pa Chad hangdeng	<i>Tor tambra</i>	
6	Pa Deng	<i>Tor latervittatus</i>	
7	Pa Thon or Pa Kua	<i>Tor tambroides</i>	
8	Pa Langet	<i>Tor ater</i>	

Table 11. Most common local fish species caught by households

Table 12 shows the following migrating fish species caught in Nam Ngoy, which form part of the household total fish catch.

No.	Common Name	Scientific Name
1	Pa Wananor	<i>Bangana behri</i>
2	Pa Wakhai	<i>Balantiocheilos melanopterus</i>
3	Pa Pak	<i>Hypsibarbus wetmorei</i>
4	Pa Sout	<i>Hampala macrolepidota</i>
5	Pa Puk (Pa Dokthong)	<i>Scaphognathops theunensis</i>
6	Pa Keng	<i>Cirrhinus molitorella</i>
7	Pa Porn	<i>Cirrhinus microlepis</i>
8	Pa Saie	<i>Mekonggina erythrospila</i>

Table 12. Migrating fish species commonly caught by households

Downstream Power Station

The daily household fish catch monitoring exercise has been stopped for one year downstream of the Power Station to allow time for the profile meetings, hinterland survey, and individual household interviews.

Fish Catch Monitoring (FCM) Data Base

Development of the comprehensive fish catch monitoring database continued during the reporting period.

The data entry contractor is presently working on data entry for the following FCM forms:

- Daily hh monitoring forms,
- Individual hh interviews forms,

This activity is currently behind schedule.

All other interview forms are entered into the database by NTPC staff.

The NTPC data base administrator resigned during the reporting period and will be replaced by new staff on 25 July 2007.

2.4.10 Photographs



School toilet construction, Yangkham



Water supply consultation, Mahaxai



VDCC leadership workshop, 25-28 June 2007



Wet season vegetable production



Pig pen in Beungbouathong



Integrated cropping, Kengpe village
(Jatropha, rice, pine apple)



Riverbank Garden Replacement
consultation, Ban Kengpe



Installing staff gauge, lower Xe Bangfai

Environmental Activities

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, Camp Followers water quality monitoring reported in section 2.1.3, and the PCR activities reported in section 2.1.1, activities and involvement of the Environmental Management Office in June 07 have included the following:

- Exportation of ship specimens for the fish and aquatic habitats baseline.
- Ongoing activities for the baseline wildlife survey, and wildlife management and monitoring plan.
- Completion of the Interim Human-Elephant Conflict (HEC) monitoring.
- Execution of the Elephant Program Phase II contract, and commencement of Phase II activities.
- Continued survey, construction, and vegetation activities for the interim wetlands.
- Continued activities for the Environmental Education.
- Continued development of the wildlife rescue plan under the Transitional Strategy.
- Water quality sampling and analysis.

3.2 Wildlife Programs

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

3.2.1 Fish Impacts in upstream and downstream river species

The baseline fish/aquatic species and habitat inventory report was finalized in September 2006.

Activities during June 2007 include:

- Fish specimens for the supplementary survey were exported to the ichthyologist for identification. Given the delays in obtaining an exportation certificate, reporting which was scheduled for June 07 will have to be postponed.

3.2.2 Wildlife Management and Monitoring Program

Given overlaps in baseline survey and management activities, the Terrestrial and Wetland Programs, which are presented separately in the CA, have been combined into one Wildlife Management and Monitoring Program. The program will be conducted in two phases:

1. Phase I includes (i) the pre-impoundment species and habitat inventories, (ii) development of a post-impoundment species management program, and
2. Phase II includes implementing part of the management plan and training the appropriate GOL agency to implement the remainder of the management plan.

Phase I

For Phase I activities commenced on 30 September 2006 and the baseline survey and wildlife management plan are scheduled to be submitted on 31 July 2007.

Activities during June 2007 include:

- Ongoing baseline survey and management planning activities. With the exception of the large mammal camera trapping survey which is still ongoing, the field surveying component is now complete and the team of wildlife specialists are focusing on reporting the results of the baseline surveys and developing the management plan.
- The contractor's planner was based in Nakai during June 07 to help make the wildlife management and monitoring plan operational.

Phase II

Activities in June 2007 include:

- Based on consultant's recommendations, continuation of survey, UXO clearing and construction activities for the interim wetlands. These habitats are being established above FSL to act as a buffer for impacts that inundation will have on existing wetlands on the Nakai Plateau. Progress is provided in the table below.
- Consultant's wetland ecologist developed a plan for the vegetation of the main body of the interim wetlands. Vegetation activities have commenced with contractors sourcing wetland plant specimens from the Nakai Plateau and transplanting to a holding nursery prior to vegetation of the interim wetlands.
- Contract negotiations for consultant's wetland ecologist to provide additional technical inputs and monitoring for the vegetation of the interim wetlands.

Zone	Interim Wetland Activities (responsible party)					
	Survey Contractors	Design* Contractor	Approval (WMPA)	UXO Clearing Contractor	Construction Contractor	Dyke Vegetation Contractor
Zone A	12	11	7	7	7	7
Zone B	18	18	17	17	14	10
Zone C	5	4	4	4	4	0
Zone D	4'	0	0	0	0	0
Total	39	33	28	28	25	17
Target	30	30	30	30	30	30

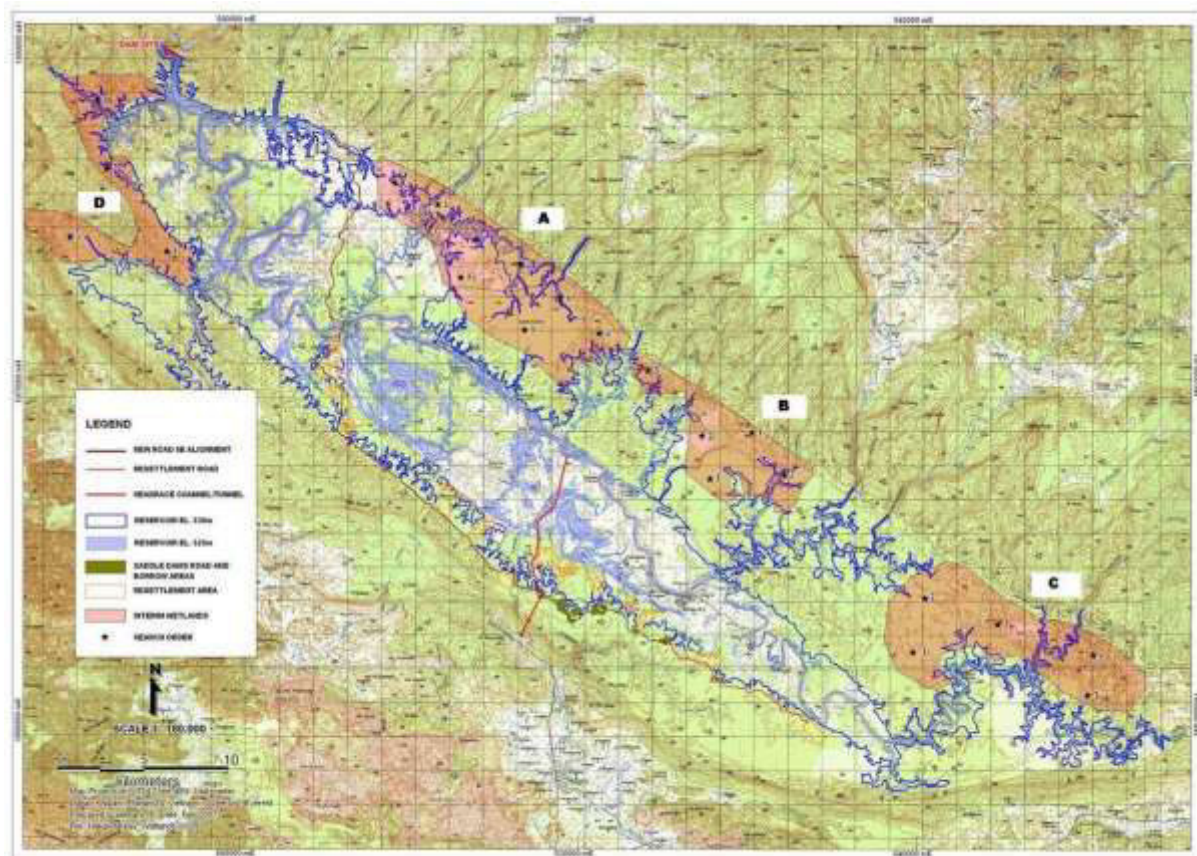
* some surveyed sites rejected during the design and review phase

` reconnaissance survey only but sites rejected on the basis of size and other constraints





Collection (top left) and transportation (top right) of wetland plant species from the Nakai Plateau to a holding nursery prior to transplanting into the interim wetland. Vegetation of the earthen dykes, and commencement of inundation of the interim wetlands (bottom left and right)



Locations of the interim wetlands zones

3.2.3 Asian Elephant Program

1. Pre-impoundment inventory and survey of habitats, distribution, movements.
2. Implementation of a pre-Reservoir impoundment elephant management program.
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 program.

Phase I of the Elephant Program was conducted by Wildlife Conservation Society (WCS) and includes items 1, 4 and 5 above. A population of 142 (95% CI=97,207) individuals has been estimated based on the line transect and dung decay data. A population estimate of 132 (95% CI= 120, 149) individuals has been estimated based on the DNA analysis.

Activities during June 2007 include:

- WCS continue to develop the draft Phase I Final Report based on NTPC comments.
- Contract execution for Phase II. Objectives of Phase II include development and implementation of a pre- and post-inundation elephant management plan. Management activities will include the continuation of HEC monitoring and training villagers in passive and active crop protection measures. Commencement of Phase II activities in June 2007 included WCS mobilization to site and liaison between WCS and the Nakai District Office to secure staff for the elephant program.
- Completion of the interim HEC monitoring to assess the spatial and temporal distribution of HEC on the Nakai Plateau and surrounding areas. Recorded HEC incidents are tabulated below:

Month	HEC Incidents
Jul 06	3
Aug 06	10
Sep 06	18
Oct 06	6
Nov 06	51
Dec 06	9
Jan 07	5
Feb 07	6
Mar 07	10
Apr 07	1
May 07	1
June 07	*

[*] WCS still analyzing the data

3.2.4 Transitional Strategy for Reservoir Impoundment

This program includes the following activities:

1. Development of a transitional strategy for reservoir impoundment.
2. Training of local authorities in wildlife emergency response.
3. Establishment and implementation of an emergency response team.
4. Public awareness program.
5. Prevention and prohibition of wildlife trade (GOL).

The requirement to provide recommendations on the transitional strategy has been included in the Wildlife Management and Monitoring Program.

Activities during June 2007 include:

- The consultant, via the Wildlife Management and Monitoring Program, continues to develop the wildlife rescue plan which will be submitted in advanced of the Wildlife Management and Monitoring Plan.
- The consultant continues with environmental education activities for the six target groups on the Nakai Plateau. Progress until the end of June 2007 is summarized in the table below:

June 07	Target Audience					
	Schools	Construction Worker Camps	Resettlers villages	Polices officers	GoL officers	NTPC's Drivers
Total to Date	2	8	7	0	0	26
Target	15	24	15	20	-	40



Environmental education for (i) the resettlement villages of Sop Hia (top left) and Sop Ma (top right); and (ii) resettlement construction contractors of Valy (bottom left) and Dongsy (bottom right)

3.2.5 Adaptive Management Programs

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

1. Wildlife Program (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

No special comment for this reporting period.

3.3 Water Quality Monitoring and Assessment Program

The WQMAP included the following monitoring:

- 25 parameters on a monthly basis and 7 parameters on a weekly basis at 17¹ Surface Water sampling sites. These are located upstream and downstream of construction areas on the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit, and Xe Bangfai. Given the potential for increases in Project-generated sediment load, the spatial distribution of turbidity was monitored at 7 surface water sites and at 6 construction site discharges along the Nam Kathang.
- 17 parameters on a quarterly basis and TSS on a monthly basis for construction and construction camp discharges, 27 parameters on either a semi-annual basis for leachate and landfill observation wells, and 23 parameters on an annual basis for HC/CC potable water.
- 12 physio-chemical parameters at 15 Resettlers and Project Lands Groundwater sampling site on a quarterly basis. One bacteriological parameter at 39 Resettlers and Project Lands Groundwater sampling sites on a monthly basis. These are new groundwater installations located on the Nakai Plateau that have been provided by NTPC.
- 12 physio-chemical parameters and one bacteriological parameter at 13 Community Groundwater sampling sites on a quarterly basis. These are groundwater installations already owned by the community in the Project area.
- One bacteriological parameter at 15 Public Health Groundwater sampling sites on a quarterly basis. These are restaurants associated with camp followers.

Field Observations - June 2007

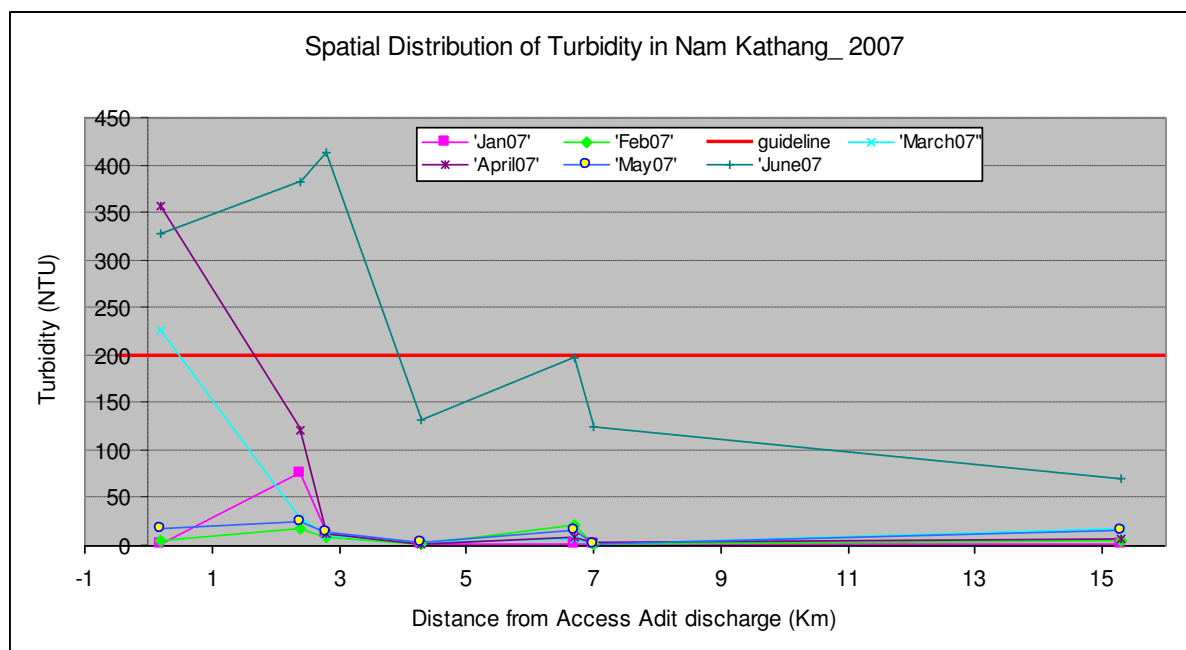
The major field observations and measurements are as follows:

- The turbidity in the Nam Kathang has deteriorated when compared to the previous month with exceedence of the previous¹ guideline in the upper section of the Nam Kathang. This reflects the increase in rainfall and the subsequent surface runoff from cleared construction areas.
- Turbidity levels exceed the Project guideline in the upper section of the Nam Kathang between the point where the discharge from Saddle Dam 12b enters the Nam Kathang upstream of the Power House and Platform 1. Thereafter, turbidity remains within the guideline and tends to decrease with distance downstream.
- Discharge from Saddle Dam 12b construction site was 816 NTU.
- There was no discharge from the Access Adit Platform 415 sedimentation basins during sampling.
- Discharge from the Power House was 21.2 NTU.
- During the sampling event there were no discharges down the Nakai escarpment from the Headrace Channel or Intake Structure construction areas.
- During the sampling event there was no discharge from the Headrace Channel to the wetland area adjacent to Ban Phonphanpek

¹ NTPC monitors turbidity as a relative indicator whereas turbidity has been replaced with TSS in the Project Water Quality Guidelines for surface water quality monitoring for the HC/CC.

- ² SW13 is located on a seasonal water body and therefore monitoring only in wet season. SW10 is located on the Nam Pan which is no longer included in the WQMAP.
- ² NTPC monitors turbidity as a relative indicator whereas turbidity has been replaced with TSS in the Project Water Quality Guidelines for surface water quality monitoring for the HC/CC.

² SW13 is located on a seasonal water body and therefore monitoring only in wet season. SW10 is located on the Nam Pan which is no longer included in the WQMAP.



Turbidity Sampling sites

May 2007 Water Quality Results

The laboratory results for June 2007 will be presented in the July 2007 monthly progress report.

The laboratory analytical results for May 2007 are presented in the tables below. As a screening procedure, the results have been compared with Project guidelines. Values highlighted in yellow represent exceedences. Comparison of measured values with guidelines is intended as an initial screening step to assist in data interpretation. Exceedences are then considered on a site-specific basis to assess whether a measured value poses an environmental or human health risk. The significant project-related exceedences are discussed below and are highlighted in the tables following.

Surface Water

Nam Theun

- With the exception of faecal coliform, the water quality in the Nam Theun continues to be considered as good with few exceedences of the Project Water Quality Guidelines ("Guidelines").
- Potassium exceeds the Guideline at all sites except SW1. The source of the elevation is likely to be an increase in the proportion of groundwater in the dry season surface water flow rather than being Project related.
- Faecal coliform exceeds the Guideline downstream of the Dam Site at SW18. Effluent from the Dam Site camp is likely to be contributing to this elevation. Faecal coliforms are indicators of the bacteria and pathogen load in the water which could pose a risk to human health. Although there are no permanent communities directly downstream of the Dam Site, it is recommended that people should continue with the practice of boiling water prior to consumption.

Nam Kathang

- No flow in the upstream control site (SW4).
- With the exception of pH and faecal coliform, the water quality in the Nam Kathang can be considered good with few significant exceedences of the Guidelines.
- pH exceeds the Guideline downstream of the Regulating Dam (SW9). The likely source of this elevation is discharge from the Platform 1 concrete batch plants. The WHO suggests that a pH greater than 8.0 would markedly impair the potability of water. Extreme pH (>11 or <4) can cause irritation of the eyes, skin and mucous membranes. The observed pH remained within this range and should not have any health implications.
- Alkalinity exceeds the Guideline in lower Nam Kathang (SW14). The likely source is a higher proportion of groundwater, from a limestone dominated catchment, in surface water flow. The sharp increase at SW14 is a result of the Nam Gnom inputs. The measured levels are not deemed to pose a risk to human health.
- Potassium exceeds the Guideline at SW5, SW9 and SW15 on the Nam Kathang. It is likely that elevated potassium is being sourced from mineral solution in groundwater. There is no health-based drinking water guideline for potassium and therefore the measured level is not deemed to pose a risk to human health.
- Faecal coliform exceeds the Guideline downstream of Power House (SW5), RNT (SW9) and in the lower Nam Kathang (SW14). Given that there was no flow at the upstream control it is difficult to determine the source of the elevation at SW5. Effluent from construction camps is likely contributing to the levels measured at SW9. However, given that there are no construction sites or camps located on the Nam Kathang between SW9 and SW14, the sharp increase at SW14 is not deemed to be Project-related. Faecal coliforms are indicators of the bacteria and pathogen load in the water which could pose a risk to human health. It is recommended that these communities should continue with the practice of boiling water prior to consumption.

Nam Gnom

- With the exception of pH and faecal coliform, the water quality in the Nam Gnom continues to be considered as good with few significant exceedences of the Guidelines.
- pH slightly exceeds the Guideline at SW12. The likely source of this elevation is an increase in the proportion of groundwater, from the limestone karsts which surround the Nam Gnom catchment, in surface water flow.

- Alkalinity and calcium both exceed their respective Guidelines at the upstream control (SW11), and are not deemed to be Project-related. High calcium and alkalinity are likely a result of an increase in the proportion of groundwater in surface water flow.
- Potassium exceeds the Guideline at SW12 but is likely to be a result of groundwater inputs rather than Project-related.
- Faecal coliform exceeds the Guideline at both SW11 and SW12. Given that elevated levels were recorded in the upstream control, the source of these faecal coliform are not deemed to be Project-related but rather poor sanitation infrastructure and livestock of Ban Thod, although Project related activities may be contributing to the significant elevation measured at SW12. The human health implications are discussed above.

Nam Phit

- No flow in the upstream control site (SW13).
- The water quality in the Nam Phit can be considered as good with no significant exceedences of the Guideline.
- Alkalinity and calcium both exceed their respective Guidelines at SW6. Although, there was no upstream control for comparison, the high calcium and alkalinity are likely a result of an increase in the proportion of groundwater in surface water flow rather than Project-related.

Xe Bangfai

- The water quality of the Xe Bangfai can be considered as good with few exceedences of the Guidelines.
- pH exceeds the Guidelines at SW17. Given that there are no construction activities in the middle Xe Bangfai, the source of the elevation is likely to be groundwater inputs rather than Project-related. The human health implications of elevated pH are discussed above.

Resettlers and Project Lands Groundwater

The Resettlers and Project Lands Groundwater monitoring is determining whether groundwater installations provided by NTPC are of an acceptable quality, and also establishing a pre-operations baseline for groundwater.

Faecal coliform results for Resettlers & Project Lands Groundwater are presented below. The implications of exceedences are summarized as follows:

- During collection the outside of the hand pump spouts were sterilized with ethanol prior to sampling to prevent contamination from the hand pump casing itself. Post sterilization faecal coliform levels exceed the Lao standard at RGW 4, 11, 12, 14, 21, 26 and 34. For these sites it appears that the source of the contamination appears to be from the groundwater. The human health implications are discussed above.

Community Groundwater

The Community Groundwater monitoring establishes a pre-operations baseline for groundwater already established in the community (i.e., not provided by the Project).

- No special remarks for this reporting period.

Construction Site Discharges

The construction site discharge monitoring is determining whether construction activities are impacting the surface water of the Project area. Analytical results are presented in the table below. The implications of exceedences are summarized as follows:

- TSS exceeds the proposed³ guideline for the Dam Site (CAD1), Access Adit (CAD4), Regulating Dam (CAD6) and Downstream Channel Tunnel (CAD 7) discharges. From an environmental health perspective, a high TSS would have a negative effect on the primary several sub-lethal effects on fish which may also result in a negative impact on

³ Project Water Quality Guidelines for construction site discharges have not yet been agreed by NTPC.

productivity. From a human health perspective, the measured levels can make water less palatable and sediment can also act as a substrate for bacteria growth and absorption of metal ions.

Construction Camp Discharges

The construction camp discharge monitoring is determining whether construction camp activities are impacting the surface water of the Project area. Analytical results are presented in the table below. The implications of exceedences are summarized as follows:

- TSS exceeds the proposed guideline in the effluent of all camp discharges. The environmental and human health implications are discussed above.
- With the exception of COD in CAMP 2, BOD and COD exceed their proposed guidelines in the effluent for all the Nakai Dam Camp trickle filters. As the previous month's results have shown, the source of the elevated BOD and COD is high organic matter with contributions from ammonia and oil and grease. High BOD may result in oxygen depletion in the receiving water body. Although COD also measures those organic compounds not readily oxidized by biological action, a high COD may also result in a decrease in dissolved oxygen in the surface water downstream of the discharge.
- Faecal coliform exceeds the proposed guideline in all camp discharges. The source of these exceedences is likely to be septic waste entering the grey water system of the camps. The human health implications are discussed above.

Table: May 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bangfai.

Parameter	Unit	WQ Guidelines	River-Specific Guideline	Nam Theun			
				SW 1	SW 2	SW3	SW 18
Sampling Date				5/5/2007	5/5/2007	6/5/2007	6/5/2007
Sampling Time				11.11 h	09.15 h	11.00 h	10.40 h
Water Depth	(m)			0.5	2	4.9	2.1
Sampling Method				grab	grab	grab	grab
Air Temperature	(°C)			25.9	26.5	26.6	26.7
Cloud Coverage				100	100	89	100
Water Temperature	(°C)			26.8	27	27.7	28.1
pH		6.0-8.0		6.99	6.85	7.07	7.12
DO	(mg/L)	> 5.0		7.21	7.24	7.54	7.41
% DO Saturation	(%)			94.4	95	101.4	100.5
Conductivity	(µS/cm)	< 350 or <750 *		*	*	*	*
Turbidity	(NTU)	< 200		3.52	7.89	18.4	17.5
Total suspended solids	(mg/L)	< 40 or <80*		1.6	5.4	11.9	6.8
Alkalinity	(mg/L)	- ¹¹	36.26	20.1	20.9	27.5	26.6
Ammonia-nitrogen	(mg/L)	< 0.5		0.074	0.085	0.048	0.058
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		0.11	0.055	ND ¹	ND ¹
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		ND ²	ND ²	ND ²	ND ²
Potassium (K)	(mg/L)	- ¹¹	1.072	1.03	1.15	8.79	8.3
Sodium (Na)	(mg/L)	300		3.46	4.65	35.1	43.5
Manganese (Mn)	(mg/L)	< 0.5		0.032	0.044	0.039	0.042
Total iron (Fe)	(mg/L)	< 1.0		0.29	0.364	0.395	0.414
Lead (Pb)	(mg/L)	< 0.05		ND ³	ND ³	ND ³	ND ³
Calcium (Ca)	(mg/L)	50		4.82	3.17	3.92	1.19
Magnesium (Mg)	(mg/L)	< 15		1.14	0.991	3.92	1.14
Sulphate (SO ₄ ⁻²)	(mg/L)	< 500		5.37	2.4	3.68	2.69
Chloride (Cl ⁻)	(mg/L)	< 250		1.62	2.38	2.38	3.14
BOD	(mg/L)	< 15		1	1.3	0.7	0.9
COD	(mg/L)	< 40		8.1	ND ⁴	11.3	22.6
Total phosphorus	(mg/L)	< 0.2		0.062	0.053	0.04	0.118
Faecal Coliform	(C/ 100mL)	150		78	108	145	180

* - conductivity meter not working.

¹ 350 µS/cm for Nam Theun; 750 µS/cm for lowlands rivers⁴ 40 mg/L for all rivers in all seasons with the exception of 80 mg/L for the Xe Bangfai in wet season

Table: May 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bangfai.

Parameter	Unit	WQ Guidelines	River-Specific Guideline	Nam Kathang					River-Specific Guideline	Nam Gnom	
				SW 4	SW5	SW 9	SW 14	SW15		SW 11	SW 12
Sampling Date					3/5/2007	3/5/2007	2/5/2007	3/5/2007		3/5/2007	3/5/2007
Sampling Time					09.25 h	10.58 h	09.14 h	09.14 h		10.25 h	11.30 h
Water Depth	(m)				0.2	0.2	0.8	1		0.9	0.3
Sampling Method				N	grab	grab	grab	grab		grab	grab
Air Temperature	(°C)			O	27.8	29.9	25.7	25.2		26.2	28
Cloud Coverage					90	90	99	90		70	85
Water Temperature	(°C)			W	28.1	30.8	27.1	25.4		26	30.8
pH		6.0-8.0		A	7.56	8.5	7.34	7.46		7.69	8.09
DO	(mg/L)	> 5.0		T	6.91	10.18	6.97	6.89		6.65	12.39
% DO Saturation	(%)			E	89	138.3	88.3	85.1		85.3	167.8
Conductivity	(µS/cm)	< 350 or <750 *		R	*	*	*	*		*	*
Turbidity	(NTU)	< 200			3.1	2.41	6.26	6.54		5.74	11.6
Total suspended solids	(mg/L)	< 40 or <80*		S	2.3	1	7	2.3		8.4	6.9
Alkalinity	(mg/L)	- ¹¹	127	A	112	100	151	105	196.4	201	142
Ammonia-nitrogen	(mg/L)	< 0.5		M	0.084	0.072	0.053	0.088		0.136	0.058
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		P	ND ¹	ND ¹	0.011	0.055		0.22	ND ¹
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		L	ND ²	ND ²	ND ²	ND ²		ND ²	ND ²
Potassium (K)	(mg/L)	- ¹¹	1.556	E	2.97	3.9	1.01	1.96	0.445	0.358	4.5
Sodium (Na)	(mg/L)	300			48.6	40.9	5.6	19.9		0.99	33.6
Manganese (Mn)	(mg/L)	< 0.5			0.058	0.017	0.132	0.054		0.03	0.038
Total iron (Fe)	(mg/L)	< 1.0			0.168	0.202	0.302	0.121		0.154	0.262
Lead (Pb)	(mg/L)	< 0.05			ND ³	ND ³	ND ³	ND ³		ND ³	ND ³
Calcium (Ca)	(mg/L)	50			32.7	22.2	43.1	26.5		56.2	47.3
Magnesium (Mg)	(mg/L)	< 15			7.89	6.89	2.59	2.44		2.89	5.35
Sulphate (SO ₄ ⁻²)	(mg/L)	< 500			101	58.4	5.96	5.37		3.29	3.68
Chloride (Cl ⁻)	(mg/L)	< 250			25.6	23.7	5.23	25.9		1.05	0.38
BOD	(mg/L)	< 15			1.2	0.7	0.8	0.5		0.8	1.5
COD	(mg/L)	< 40			12.9	19.3	17.7	12.9		8.04	11.2
Total phosphorus	(mg/L)	< 0.2			0.124	0.078	0.09	0.074		0.093	0.068
Faecal Coliform	(C/100mL)	150			160	180	660	92		250	650

* - conductivity meter not working

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

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

Table: May 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bangfai.

Parameter	Unit	WQ Guidelines	River- Specific Guideline	Nam Phit	
				SW 13	SW 6
Sampling Date					2/5/2007
Sampling Time					11.50 h
Water Depth	(m)				0.9
Sampling Method					grab
Air Temperature	(°C)				23.2
Cloud coverage				N	53
Water Temperature	(°C)			O	22.4
pH		6.0-8.0			7.53
DO	(mg/L)	> 5.0		W	9.6
% DO Saturation	(%)			A	110.4
Conductivity	(µS/cm)	< 350 or <750 *		T	*
Turbidity	(NTU)	< 200		E	23.3
Total suspended solids	(mg/L)	< 40 or <80*		R	22.9
Alkalinity	(mg/L)	⁻¹¹	198.2		230
Ammonia-nitrogen (NH ₃ -N)	(mg/L)	< 0.5		S	0.072
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		A	0.286
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		M	ND ²
Potassium (K)	(mg/L)	⁻¹¹	0.7288	P	0.128
Sodium (Na)	(mg/L)	300		L	0.463
Manganese (Mn)	(mg/L)	< 0.5		E	0.03
Total iron (Fe)	(mg/L)	< 1.0			0.322
Lead (Pb)	(mg/L)	< 0.05			ND ³
Calcium (Ca)	(mg/L)	50			60.9
Magnesium (Mg)	(mg/L)	< 15			6.24
Sulphate (SO ₄ ⁻²)	(mg/L)	< 500			4.08
Chloride (Cl ⁻)	(mg/L)	< 250			5.61
BOD	(mg/L)	< 15			0.6
COD	(mg/L)	< 40			11.3
Total phosphorus	(mg/L)	< 0.2			0.065
Faecal Coliform	(C/100mL)	150			80

River- Specific Guideline	Xe Bangfai			
	SW7	SW8	SW16	SW 17
	2/5/2007	2/5/2007	4/5/2007	4/5/2007
	10.00 h	13.00 h	12.05 h	13.25 h
	0.7	1.5	1.5	2.2
	grab	grab	grab	grab
	26.9	28.7	30.6	30.8
	95	90	80	90
	28.5	29.3	30.7	30.9
	7.84	7.92	7.74	8.05
	8.6	8.84	8.02	7.63
	112.2	118.3	100.6	104.3
	*	*	*	*
	2.02	2.43	5.66	10.06
	1.4	1.6	2.2	6.8
198.2	173	166	162	158
	0.073	0.094	0.042	0.04
	ND ¹	0.011	0.011	0.022
	ND ²	ND ²	ND ²	ND ²
0.7288	0.597	0.537	0.568	0.629
	1.6	7.46	1.63	2.02
	0.012	0.01	0.027	0.02
	0.056	0.048	0.03	0.157
	ND ³	ND ³	ND ³	ND ³
	45.8	43.8	41.7	39.3
	4.09	4.24	4.29	4.99
	2.79	4.28	3.78	4.28
	0.28	1.24	1.24	1.24
	0.9	0.8	1.3	0.8
	12.9	11.3	19.4	3.24
	0.078	0.102	0.059	0.053
	19	8	12	23

* - conductivity meter not working

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

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

Table: May 2007 Resettler's & Project Lands Groundwater Faecal Coliform Results

Date	Location	Faecal Coliform Result. Col/100	Guideline
	Ban Oudomsouk		
2-05-07	RGW1	0	0
2-05-07	RGW28	0	0
2-05-07	RGW39	0	0
	Ban Oudomsouk Mai		
2-05-07	RGW2	0	0
2-05-07	RGW9	0	0
2-05-07	RGW27	0	0
2-05-07	RGW38	0	0
	School		
2-05-07	RGW3	0	0
	Ban Phonphanpek		
3-05-07	RGW4	1	0
3-05-07	RGW29	0	0
3-05-07	RGW37	0	0
	Ban Nongboua		
3-05-07	RGW5	0	0
3-05-07	RGW30	0	0
3-05-07	RGW33 after filter	0	0
	Ban Bouama		
5-05-07	RGW6	0	0
5-05-07	RGW22	0	0
5-05-07	RGW23	0	0
	Ban Phonsavang		
5-05-07	RGW7	0	0
5-05-07	RGW20	0	0
5-05-07	RGW21	15	0
5-05-07	RGW34	1	0
	Ban Sop On		
7-05-07	RGW8	0	0
7-05-07	RGW10	0	0
7-05-07	RGW18	0	0
7-05-07	RGW19	0	0
	Ban Done		
7-05-07	RGW11	2	0
7-05-07	RGW12	1	0
7-05-07	RGW16	0	0
7-05-07	RGW17	0	0
	Ban Sop Phene		
6-05-07	RGW13	0	0
6-05-07	RGW32	No water sample	
	Ban Sophia		
6-05-07	RGW14	28	0
6-05-07	RGW24	0	0
6-05-07	RGW25	0	0
	Ban SopMa		
6-05-07	RGW15	0	0
6-05-07	RGW26	31	0

Date	Location	Faecal Coliform Result. Col/100	Guideline
6-05-07	RGW36	0	0
	Ban Khone Kaen		
7-05-07	RGW31	No water sample	
7-05-07	RGW35	0	0
7-05-07	RGW Bottle Blank	0	0
7-05-07	RGW Field Blank	0	0

Table: May 2007 Construction Site Discharge

Parameter	Unit	Project Guideline	Dam Site CAD 1	Headrace CAD 2	Intake CAD 3	Access Adit CAD 4	Powerhouse CAD 5	Regulating Dam CAD 6	DC Tunnel CAD 7
Sampling Date			06/05/07			03/05/07	03/05/07	03/05/07	02/05/07
Sampling Time			11.15 h			08.25 h	08.42 h	09.50 h	10.55 h
Water Depth	(m)		0.1	N	N	0.1	-	0.1	0.5
Sampling Method			grab	O	O	grab	grab	grab	grab
Air Temperature	(°C)		25.5			24.4	27.4	-	25.4
Water Temperature	(°C)	<40	26.1	D	D	24.0	27.0	28.5	24.8
pH		6.0 - 9.5	8.95	I	I	9.05	8.11	8.05	7.63
DO	(mg/L)		7.09	S	S	8.12	8.31	8.08	6.48
% DO Saturation	(%)		92.2	C	C	100.5	100.7	103.7	78.1
Conductivity	(µS/cm)	<3500	*	H	H	*	*	*	*
Turbidity	(NTU)		63.5	A	A	57.9	22.3	267	607
Total suspended solids	(mg/L)	<40	52.9	R	R	93.9	16.5	172	537
BOD	(mg/L)	<30	0.8			0.6	0.6	0.5	1.2
Oil and Grease	(mg/L)	<5	ND ¹			ND ¹	ND ¹	ND ¹	1.1

Table: May 2007 Construction Camp Discharge

Parameter	Unit	Project Guideline	Dam Site Camp				Ban Oudomsouk Camp	RNT
			CAMP 1	CAMP 2	CAMP 3	CAMP7	CAMP 4	CAMP 6
Sampling Date			06/05/07	06/05/07	06/05/07	06/05/07	05/05/07	04/05/07
Sampling Time			12.00 h	12.25 h	12.10 h	12.35 h	10.18 h	09.21 h
Water Depth	(m)		0.1	0.1	0.1	0.1	0.1	0.1
Sampling Method			grab	grab	grab	grab	grab	grab
Air Temperature	(°C)		-	-	-	-	-	-
Water Temperature	(°C)	<40	25.3	25.6	25.9	27.9	24.4	30.1
pH		6.0-9.5	6.05	7.52	6.04	7.62	7.32	7.26
DO	(mg/L)		0.48	3.48	5.28	6.02	1.43	4.22
% DO Saturation	(%)		6.1	44.7	68.5	81.2	48.6	56.4
Conductivity	(µS/cm)	<3500	*	*	*	*	*	*
Turbidity	(NTU)		176	158	151	434	**	43.7
Total suspended solids	(mg/L)	<40/30 ³	111	66.3	158	201	854	99.0
BOD	(mg/L)	<30	335	32.9	380	14.6	20.8	7.8
COD	(mg/L)	<130	600	93.4	586	38.6	102	72.8
Fecal coliform	(CFU/ 100mL)	<1000	22,600	19,200	24,400	15,400	29,200	16,800

* Conductivity meter not working

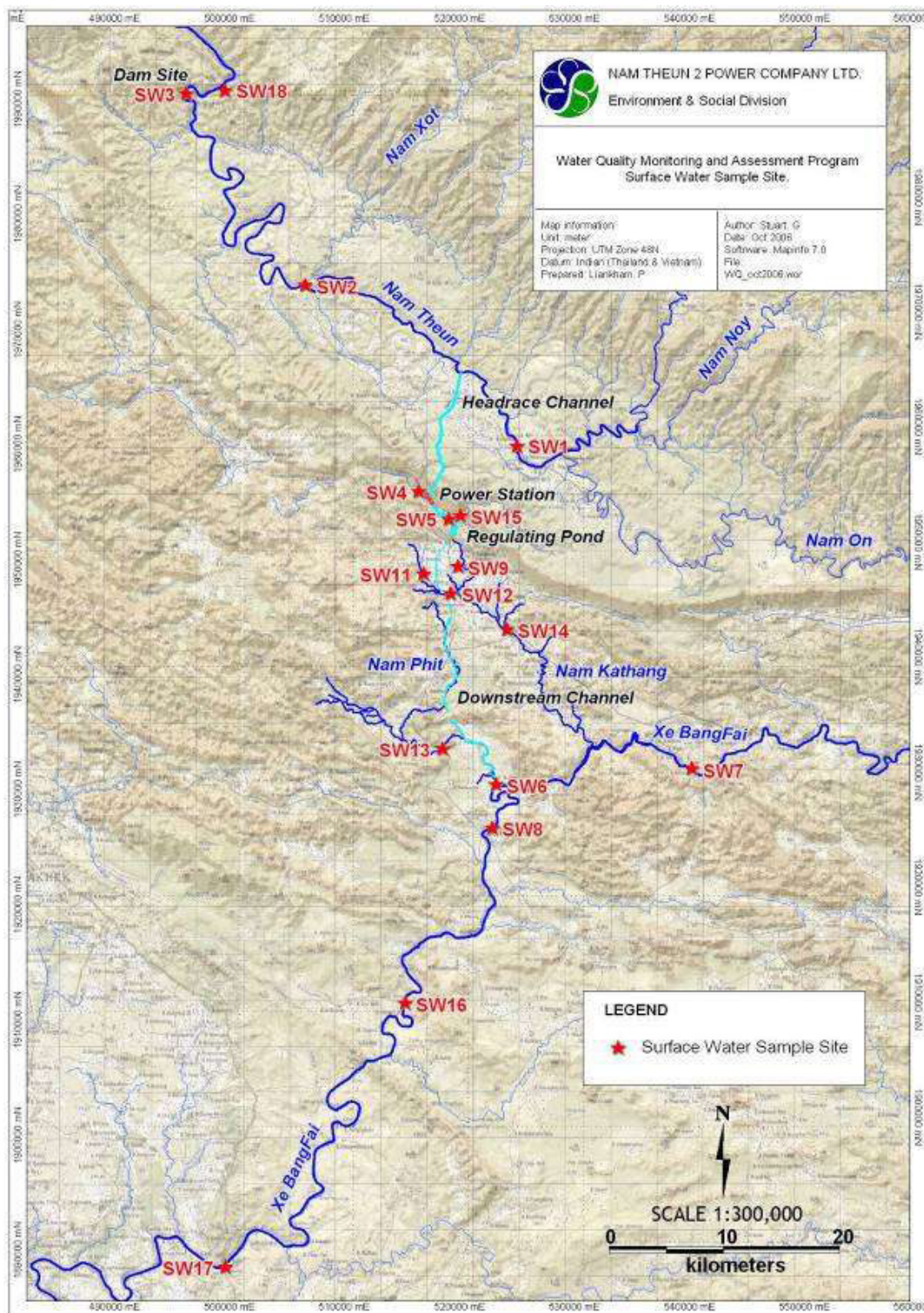


Figure: Surface Water sampling sites

LEGEND

- ★ Resettlers Ground water
- Resettlement Area

Scale: 1:155,000

0 5 10 kilometers

File: Resettle_Groundwater.wor

3.4 Environment Management Unit (EMU) Technical Assistance (TA)

Activities undertaken by the EMU and EMU TA during June 2007 are presented in the Work Plan below and also include:

- EMU personnel continue to accompany EMO Inspectors on joint site inspections, alternating personnel from EMU Khammouane and EMU Bolikhamxay. Details of the construction areas inspected by the EMU are provided in Part B, Section 1.2 (*Environment Protection*) of this Report.

CA Ref No.	Activity
Carried over from the Fourth Quarter	
NA	Request assistance from GOL Engineer for occasional spot checks of environmentally-related project infrastructure.
03	Assist in the development of a GOL strategy for lesser value biomass removal
8 / 19	Continue to consult with the NTPC regarding establishment of adaptive management committees for the riparian releases into the Nam Theun River and to oversee the implementation and review the effectiveness of the wildlife program.
11	Prepare a letter to NTPC requesting the report, "Cross Section Survey – Xe Bangfai and Nam Kathang" (ref: NTPCNO030401000001A)
11	Confirm results of GOL Engineer's review of the design specifications of the Confluence Area to confirm that appropriate stabilization or protection measures, such as rip-rap, are provided to minimize scouring.
18	Assess the capacity of the GOL enforcement agencies (technical, human, financial resources) to implement hunting controls in the Resettlement Areas, including confirming NTPC has sufficient baseline for the program. Assist the GOL enforcement agencies with the development of capacity as required.
20	Confirm with the GOL who are the appropriate agencies to be involved in the public education and awareness program concerning environmental issues, in consultation with the NTPC
30	Follow up on request for inventory of quantities and types of hazardous material used by the Project.
35	Conduct a preliminary municipal waste audit in Lak Sao Consult with the NT2 STEA Committee regarding the development of suitable standards and options for the treatment or disposal of hazardous waste.
36	Follow-up request for NTPC to provide a routine report on progress of landscaping and revegetation activities.
Every 2 Weeks	
NA	Review NTPC Site Specific Environmental Plans (SSEPs)
01	Review NTPC water quality monitoring results.
Monthly	
NA	Review NTPC Monthly Progress Reports.
NA	Review HC Monthly Progress Reports.
01	Conduct site inspections to identify existing or potential sources of water contamination.
NA	Consult with district and village level authorities to record environmental grievances. Based on consultation, assess adequacy of NTPC's Grievance Procedures.
03	Conduct field inspections of the salvage logging operations to identify measures to maximize biomass removal. Report on findings to the STEA NT2 Committee.
NA	Conduct field inspection of construction areas and camp sites to identify environmental issues arise from construction activities.
Quarterly	
01	Conduct water quality spot checks to verify NTPC water quality monitoring results.
18	Conduct infield spot checks to confirm the effectiveness of the GOL control and enforcement of wildlife protection.
NA	Continue to review documents submitted to the EMU.
June 2007	
01	Develop the EMU's Standard of Operation Procedures for water quality monitoring and sampling
environmental education program syllabus development for GOL Officers.	
21	Follow-up on request to report on spoil disposal activities

23	Follow-up request for NTPC to report on vegetation clearance activities
01 / 31	Conduct a formal review of NTPC water quality data and the adequacy of the NTPC reporting format
41	Conduct a survey in the resettlement villages to determine the status / impacts of livelihood restoration of resettled villages on adjacent environment and forests.

3.5 EMO's activities linked to construction

The environmental activities linked to construction works are part of the Construction Progress Report, Part B of this Monthly Progress Report.

Internal, External Monitoring

4 Internal and External Monitoring

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

No change from previous report.

GOL Related Activities

5 GOL related activities

5.1 Watershed Management Protection Authority (WMPA)

No change from previous report

5.2 Optimization of Salvage Logging on the Nakai Plateau

Progress Report on Salvage Logging and Reservoir Sanitation Operations has been released by Ministerial Steering Committee Salvage Logging and Reservoir Sanitation Management Nam Theun II Project.

5.3 Social issues (RMU & DWG)

See social section.

Annexes

