

Environment and Social Monitoring Report

Monthly Progress Report
January-June 2007 (2/3)

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 March 2007**

Part C : Environmental & Social Report

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General Overview

1 General Overview

Project lands:

- Implementation of 2007 Livelihood Restoration Activities started in preparation for oncoming wet season.
- Construction of 20 replacement wooden houses started in Gnommalat. 4 additional replacement houses and one replacement primary school in Ban Phonekhaen assessed and expected to be included in Variation Order #1 to the main house construction contract in early April.
- Compensation payments for RMU invoice # 4 completed and acquittal submitted. RMU invoice #5 prepared, to be initiated pending acceptance of acquittal.
- Bore hole drilling campaign awaiting arrival of drill rig being repaired in Champasak. UXO clearance of proposed borehole locations substantially complete.

Public Health:

Following major activities were undertaken during March 2007:

- Rehabilitation of Mahaxai District Health Office is ongoing.
- Painting of Nakai District Health Office is complete.
- Number of training courses held during the month:
 - Training course on the use of Biochemistry for Khamkeut lab staff during 28/02-02/03/07
 - Practical training on surgery to Khamkeut DH staff during 28/02-02/03/07
 - Peer education training for the High School students in Mahaxai on 27/02-02/03/07.
- Providing feedback on the results of health checks and survey in Nakai DHO and Nongboua, Sop On, Bouama and Phonsavang Villages during 27-30/03/07.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) is being cleaned and analysis being carried out.
- 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 244 clinics in 61 villages.
- Quarterly meeting was held in Mahaxai, Gnommalat and Nakai District, and Khammouane Provincial Health Office on 1-5/03/07
- Obstetric register supervision and discussion on analysis at Provincial Hospital.
- Update on HIV/AIDS prepared for the NTPC project area.
- Routine visits to the resettlement villages continued and population health monitored
- Visit with RMU Director to the remaining villagers in Sop Hia (18 households) for review of weekly visits by district health office Khamkeut and any other local health issues.

Nakai Plateau resettlement

Infrastructure:

- Topographic survey and mapping: : A small contract for the survey and mapping of a 35 ha area near Area 7 for Sop Hia and Nam Nian was signed and the work completed. The setting out of house and agricultural plots is an ongoing activity by Resettlement Office personnel.
- UXO search and clearance: The on-going contract for UXO community awareness and on-call roving response team is still proving successful. By the end of February the roving unit have found and disposed of 1,982 UXO items including 1,788 bomblets. Results for March are not yet available. Additional UXO awareness training for project Staff, including managers and extension workers was undertaken.

- Timber houses: The contractors awarded the six VG1 timber houses construction contracts are continuing with the construction works as are three of the VG2 contractors which were given notice to proceed in February. A further VG2 contract for Area 7 village houses was signed in March and the contractor has commenced work. Also in March four contracts were signed with various sawmills for the supply of a total of 3,503 m³ of sawn timber for house construction. A contract for the lease of a large warehouse in Oudomsouk for storing the sawn timber until dispatch to the various contractors was signed and warehouse rehabilitation and staff recruitment is underway.
- Roads and tracks: There are now four road construction contracts underway. The three southern VG1 road and track contract is now substantially complete as is the Southern Resettlement Road contract. The contract for the four northern resettlement village access roads and tracks will be completed in April. The two southern VG2 village contract is about 41 % complete. A contract was signed for the construction of Area 7 and Area 13 agricultural area access roads and the contractor is mobilizing. Construction of the Oudomsouk Urban Area access roads is underway via variation orders to the Southern Resettlement Road contract.
- Irrigation: Progress with the construction of the irrigation area extension at the Pilot Village for the Keng Gnao resettlers increased and the pipelines should be tested for water tightness in early April. Design of a pilot groundwater irrigation area at Sop On had to be further revised and it is expected that bidding procedures will now begin in April.
- Villages Layout: The preparation of preliminary resettlement village and agricultural layouts for the VG2 villages is continuing by NTPC personnel in consultation with villagers.
- Community Buildings: Bid opening for the construction of community buildings was on 9 February. Ten companies bid for four contracts and evaluation is underway.

Domestic Water Supply and Sanitation :The boreholes drilling program has continued as per schedule and a total of 12 new productive wells were completed in 7 villages of Gnommalat District (Project land) and in the villages of Ban Nongbouakham (area 9) and Ban Sop Hia (area 7). In Nongbouakham, 3 boreholes were abandoned due to insufficient yield.

To date, 139 deep productive boreholes have been successfully drilled and developed on a total of 157 tentatives. All included, the total failure rate is of about 11.5%. However still sixty six (66) wells only are equipped with water lifting devices, due to further delay in the hand pumps procurement.

- Electricity: The design of the resettlement village electrification systems is continuing. Bid procedures for the electrification of three villages were delayed until March.

Livelihood Plans:

Forestry:

- Logs have been selected from Salvage Logging areas for a volume of 6,244 m³
- Total volume timber delivery in February to contractors: 311.080 m³

Agriculture / Livestock:

- Meetings have been held in 4 villages to explain the new approach
- Farmers continued to prepare their rice field in the drawdown areas
- Preparation of 0.66 ha field in 10 villages
- Survey of additional 3 ha agriculture land done for the entire plateau
- Recruitment process on-going

Fisheries:

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

Community Development:

- Final census for the remaining VG1 and VG2 villages> consultations conducted to know Nongbouakham relocation planning; relocation of Nakai Tai, Nakai Neua and Thalang due to the main dam impact this wet season. Last group of Vietic families are still subjected to final consultation by an independent facilitator.
- More and more members are joining activity groups (wicker work, weaving, tailoring, food processing and savings).
- Rice and protein are still being procured to support all resettlers. However protein support will cease at end March 07 for the first three villages relocated more than 9 months ago as per RC approval
- Vulnerable people and families are being treated with special care and suitable income activities are being explored to cope with their needs.
- Grievance procedures and system (at district and village levels) have been improved all the time. Cases were recorded and filed at both the district and village levels.

Downstream Program:

- Quarterly VDCC / RMU / DWG / NTPC Downstream Program coordination meeting
- Jatropha nurseries established in two pilot villages
- Sanitation awareness training commenced in pilot villages
- Procurement of sanitation facility materials began for four villages
- Design of a mini-polder scheme in the lower Xe Bangfai region continued
- Village fund training courses were conducted.

Environment:

- Contractual activities for the re-survey for the fish and aquatic habitats baseline survey
- Ongoing baseline wildlife survey and wildlife management and monitoring planning activities. Submission of the Progress Report
- Ongoing Interim Human Elephant Conflict (HEC) Monitoring and continued contractual activities for Elephant Program Phase II
- Commencement of survey activities for the interim wetlands for the wildlife management and monitoring program.
- Commencement of the environmental education component of the Transitional Strategy
- Procurement activities for the wildlife rescue and patrolling boat under the Transitional Strategy
- Water Quality sampling and analysis.

Monitoring:

- ADB VP site visit (1st and 2nd)
- IFIs Management review mission (5th to 9th)
- ADB French ED (15th and 16th)
- Lender's Engineer (19th to 23rd)
- ADB EDs (26th to 28th)

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

NTPC E&SD Staffing

Legend:

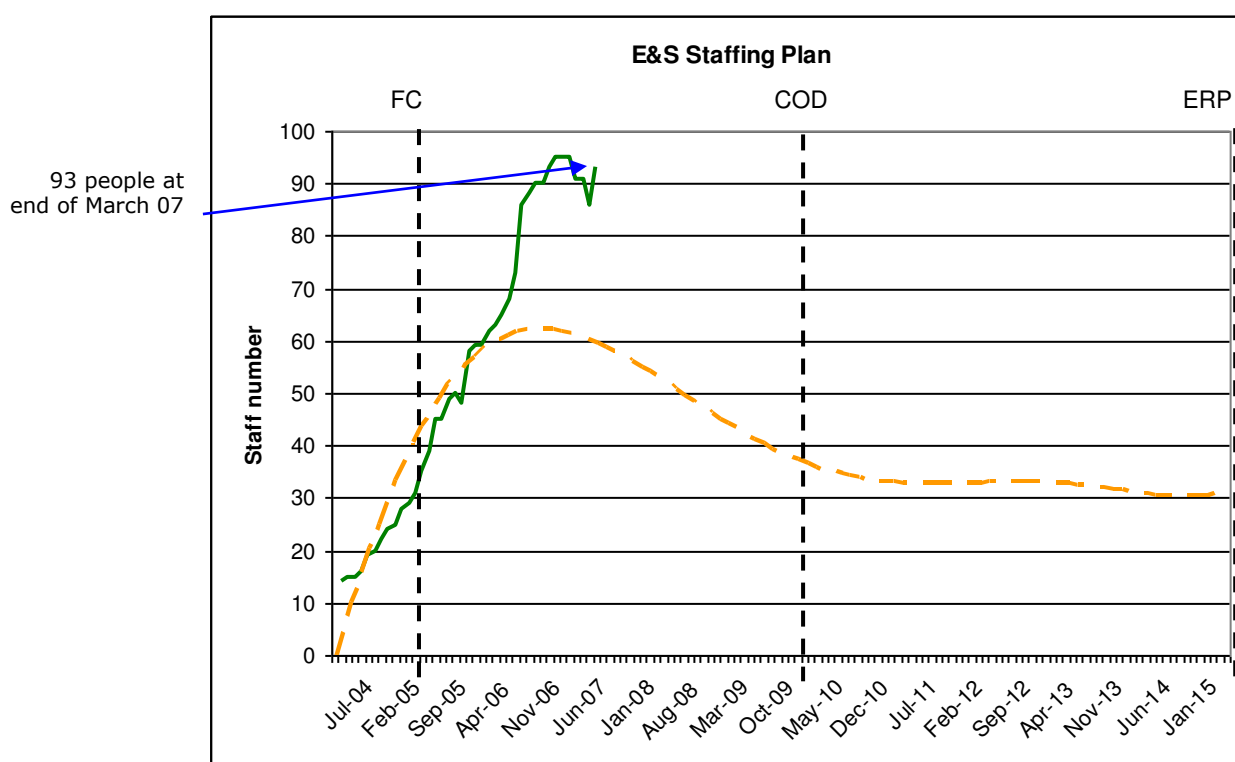
Scheduled staffing plan

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 local staffs moved to other division during of this month.

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

No change from the previous report

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

- Completion of the evaluation process and award of 4 contracts for the construction of community buildings (VG1 and VG2)
- Procurement process of consultancy services (pre-feasibility studies: irrigation, flood management)
- Procurement process of consultancy services (reservoir impoundment)
- Procurement process of consultancy services (flood control/ irrigation manager)
- Completion of the evaluation process and award of contracts for the construction of roads – areas 7 & 13 (non NTSEP)
- Completion and award of the contract for the installation and supply of IT & TV network for the residential complex (non NTSEP)
- Call for order for 300 Afridev pumps (through UNICEF)
- Single source selection (non NTSEP) for the contract for the construction of timber houses of Ban Sop Hia and Nam Nian (Area 7)
- Receipt of NOL for all 3 remaining IMAs (PL, DS, Env.)
- Receipt of NOL for the construction of boreholes (contract C1012)
- Completion of the evaluation process and award for the supply of fertilizers & herbicides for the A/L programme (non NTSEP)
- Re-bid process for the construction of access roads and tracks (areas 1 & 2)
- Completion of the evaluation process and award for the supply of vehicles for the DS programme
- Completion of the evaluation process and award for the supply of submersible pumps & pipe system to the water tanks for health infrastructures
- VO3 for Gnommalat hospitals
- VO1 for the construction of the drying kilns building
- Call for order for the supply of 21 units of urban motorcycles (to DWG and A/L)
- Order of 6 Yamaha 125cc for Environment.

1.7 Monitoring:

No change from previous report.

1.8 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 VG2PCR sites.

Activities during March 2007 include:

- Pre-relocate ceremonies were conducted at Nong Boua Kham and Nam Nian.
- With the exception of two temple sites, the IoCR have conducted the requested management measures for the remaining PCR sites of VG2. The IoCR have now submitted the report for the following VG2 compensation activities. The report is under NTPC review.

Custodian	PCR Site	PCR Type	Management Measures
Ka Oy	PCR/IN/100/33	Spirit Site	Appeasement ceremony
	PCR/IN/100/30	Cemetery	Appeasement ceremony
Nakai Neua	PCR/IN/100/55	Spirit Site	Appeasement ceremony
	PCR/IN/100/53	Cemetery	Appeasement ceremony
	PCR/IN/100/56	Temple	To be scheduled with resettlement activities
Nakai Tai	PCR/IN/100/57	Cemetery	Appeasement ceremony
	PCR/IN/100/57	Cemetery	Appeasement ceremony
Thalang	PCR/IN/100/6	Cemetery	Appeasement ceremony
	PCR/IN/100/12	Temple	To be scheduled with resettlement activities

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).

Activities during March 2007 include:

- In response to NTPC comments, the DMA continues to finalize the report on the Archaeological Salvage of the Historic Kiln Site on the Xe Bangfai.

Chance Find PCR

No special remarks for this reporting period.

PCR Monitoring

On 27 March 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
Nongping	PCR/IN/52/1	Spirit Site	quest a ceremony to appease the spirits for Transmission Line construction
	PCR/IN/52/1	Cemetery	quest a ceremony to appease the spirits for Transmission Line construction
	PCR/IN/52/1	Cemetery	No issue
Korbone	PCR/ADJ/52/8	Spirit Site	No issue
Na Myxay	PCR/ADJ/52/9	Historic	No issue
	PCR/ADJ/52/10	Cemetery	No issue
	PCR/ADJ/52/11	Cemetery	quest a ceremony to appease the spirits for Transmission Line construction

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



Examples of PCR activities undertaken during March 2007: Animist (top left) and Buddhist (top right) ceremonies conducted for the relocation of Nam Nian. Buddhist ceremony (bottom left and bottom right) conducted for the relocation of Nongbouakham.

2.1.2 Project Lands

Project Lands
Status at end of **March 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				~ 85
		Cumulative at end of the month	64				30
		Progress during the month	0				0
		comments	26 relocations done in temporary structures, corresponding permanent structures under construction				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		16			
		Progress during the month		7			
		comments					
	Compensations	impact below 10% : Final compensation (payment in cash)	Number of affected hh < 10%	315			639
			Cumulative HH compensated	291			324
			Done during the month	+ 13			180
			Cumulative amount paid to date (US\$)				
			comments				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	372			
			Interim compensation paid in 07	~ 410			
			Cumulated amount paid (US\$)				
	livelihood restoration	number of hh entitled for livelihood restoration	417				
		number of hh engaged in livelihood programs	294				
		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 March:Baseline Studies & data management

The collection of baseline study data is complete. Efforts have begun 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 March 2007. Internal management meetings conducted to discuss future Project Land management and staffing structure.

Compensation

A summary of compensation payments which have been completed (RMU#4) during the months of February and March 2007 are displayed in the following table:

No.	Req. number	Budget description	Actual expense (KIP)
1	4027	Supplemental to Sept (Interim) (LPA 33)	796,000
2	4027	Supplemental to Sept (Interim) (LPA 34)	7,034,000
3	4027	Supplemental to Sept (Interim) (LPA 35)	1,836,000
4	4027	Supplemental to Sept (Interim) (LPA 42)	2,241,000
5	4025	Housing Land + Structures (Final) (LPA 35)	53,750,000
6	4025	Housing Land + Structures (Final) (LPA 36)	-
7	4025	Housing Land + Structures (Final) (LPA 40)	84,240,000
8	4025	Housing Land + Structures (Final) (LPA 38a)	75,402,000
9	4025	Housing Land + Structures (Final) (LPA 38a)(DT1-5)	2,260,000
10	4025	Housing Land + Structures (Final) (LPA 38b)	32,600,000
11	4028	Replacement house and business disruption (LPA 38b)	200,000,000
12	4079	Moving allowance 3 houses (LPA 38a)(DT4)	23,070,000
13	4108	Interim compensation (LPA 38a)	555,380,000
14	4108	Interim compensation (LPA 38a)(DT1-5)	160,805,538
15	4108	Interim compensation (LPA 38b)	209,185,500
16	4108	Interim compensation (LPA 46)	27,111,604
17	4107	Final Compensation PAP <10% (LPA 38a)	184,610,500
18	4107	Final Compensation PAP <10% (LPA 38a)(DT1-5)	172,565,600
19	4107	Final Compensation PAP <10% (LPA 38b)	451,527,819
20	4123	Replacement house	135,300,266
21	4124	trees – house's replacement (38a)	14,343,000
22	4111	Full replacement cost of 32 obstacles ID by HC(XBF)	54,709,440
		Total (kip)	2,448,768,267

Financial training for PAPs receiving cash compensation is ongoing to ensure that PAPs possess knowledge regarding effective management of the compensation money they receive.

Compensation (cash and infrastructure) coordinator consultant commenced 2-month assignment on 27th March. He will be responsible for overseeing the implementation of compensation through the cash payments, infrastructure replacement and livelihood restoration infrastructure.

2.1.2.1 Infrastructure

RAP 2 - Oudomsouk

Electrical connection to 5 replacement houses in Oudomsouk is expected to be completed in early April 2007.

RAP3 – Gnommalat

Construction of 20 houses under C817 commenced. Additional work involving site clearance, 4 additional houses and one 6-room school has been evaluated and acceptable quotations from the contractor received. VO1 will be issued in early April to cover these activities.

7 boreholes for water supply have been completed, 1 of which (Gnommalat horticulture site) has been equipped with a solar powered pump. 6 community boreholes await delivery of hand pumps (currently in customs on the Lao side). **58** additional borehole locations (which replace the previously reported C971 for dug well construction) have been identified with consensus from villages, DWG and RMU achieved. These boreholes are being installed as compensation for disrupted water supply caused by the construction activities near these villages. Drilling will commence as soon as drill rig repairs (being done in Champasak) are complete, under contracts C675 and C1012. One drill rig will be dedicated to Project Lands needs so a significant proportion of the boreholes will be completed before the onset of the wet season, after which access can become marginal in many locations. All new boreholes will be equipped with hand pumps after drilling is complete.

RAP5 – Transmission Lines

The Phone Khaen school, impacted by the 500kV line at T15/1, will be included in C817 VO1.

Additional obstacles to be removed in the TL corridor have been identified:

- a) Section 1 and 2 (phase 2 relocation in May 07) – 1 bamboo hut, 8 rice field huts and 1 rice store. Cost of removing and replacing these private structures will be calculated and approved by DWGs during April for inclusion in RMU invoice #6.
- b) Sections 8,11,15,17,19 (phase 3 relocation in Oct 07) – 11 bamboo houses, 10 wooden houses, 7 rice stores, 6 Animal pens, 3 rice field huts, 1 brick house, 1 restaurant, 2 shops.

2.1.2.2 Livelihood restoration

A Livelihood Restoration Coordinator will be appointed in the near future. 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 interest will remain committed. Revision of designs of livelihood restoration infrastructure is underway, 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 will soon select appropriate sites for infrastructure construction. All sites shall be cleared of UXO prior to commencing construction. 2006 participants will also be heavily involved with the initiation of 2007 participants during farmer-to-farmer training sessions and information exchange.

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 may then apply their knowledge, and disseminate techniques, under supervision, to the less innovative farmers during farmer-to-farmer training sessions conducted in their fields before and during the cultivation season.

Fish and frog production: The Aquaculture Consultant contract is expected to start in early April. Activities for 2007 shall involve 2006 participants producing hatchlings for the project to purchase and provide to new participants. Activities include construction of 15 new fishponds (possibly more if suitable land can be found), and construction of 53 frog tanks. Fish reproduction specialists from Khammouane PAFO conducted hands on training of fish multiplication techniques during

March for the 10 2006 PAPs using forced spawning of selected vigorous local parents in nets in existing fishponds. Income from fish rearing has started and some families have sold as much as 50kg of fish since the program has started. Frog breeding will commence in early April. Frog production participants were involved in a cross-visit study tour of each other's frog tanks. This resulted in some improvements being made in the management of 2 of the weaker PAPs frog tanks.

Non-Timber Forest Products: The NTFP and Jatropa 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. Production of Jatropa 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 Jatropa 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 April 2007. Marketing of orchids needs to be done strategically to avoid overexploitation of naturally grown (wild) orchids. A Vientiane buyer (Orchidees) 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. The 2007 contract for forage and livestock development consultant commences at the beginning of April. The 30 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: 58 new PAPs have declared interest in participating in pig production in 2007. Pig production consultant will commence the contract in early 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.

Mushroom cultivation: The 2007 mushroom production consultant contract commenced and 2007 participants' facilities site selection is underway. 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 700,000 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. 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: The horticulture program is currently being re-evaluated to address concerns about the high cost of inputs and the technologies being employed. PAPs participating in Mahaxai horticulture are saving the proceeds from vegetable sales for purchasing more inputs. Part of the realignment of the horticulture program will be to direct the PAPs more strongly towards self-sufficiency.

The Gnommalat horticulture site water supply was completed on 23rd March with the contractor technicians installing the solar cells and tube well pump. Over 5 m³/hour of water is now available for use at no cost for fuel or electricity. Planting in the nursery will commence as soon as some materials become available.

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. 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 collection 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 season.

Project Lands Photographs for the month of March 2007



Forage and Demonstration, Gnommalat



Mushroom production house, Gnommalat



Replacement housing construction Thong Mang Village



Fish breeding nets in a PAP fishpond



Grand onion harvesting



Women attending Project Land/PAP communication session



Communication in a local dialect



Rice cultivation training, Thasano

Social Activities

Health Programs

2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during March 2007:

- Rehabilitation of Mahaxai District Health Office is ongoing.
- Painting of Nakai District Health Office is complete.
- Number of training courses held during the month:
 - Training course on the use of Biochemistry for Khamkeut lab staff during 28/02-02/03/07
 - Practical training on surgery to Khamkeut DH staff during 28/02-02/03/07
 - Peer education training for the High School students in Mahaxai on 27/02-02/03/07
- Providing feedback on the results of health checks and survey in Nakai DHO and Nongboua, Sop On, Bouama and Phonsavang Villages during 27-30/03/07
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) is being cleaned and analysis being carried out
- 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 244 clinics in 61 villages
- Quarterly meeting was held in Mahaxai, Gnommalat and Nakai District, and Khammouane Provincial Health Office on 1-5/03/07
- Obstetric register supervision and discussion on analysis at Provincial Hospital
- Update on HIV/AIDS prepared for the NTPC project area
- Routine visits to the resettlement villages continued and population health monitored
- Visit with RMU Director to the remaining villagers in Sop Hia (18 households) for review of weekly visits by district health office Khamkeut and any other local health issues.

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	16	
4	Khamkeut	22	10	45.5%
	Total	81	65	

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	114	
3	Nakai	20	6	0	
4	Khamkeut	22			Nam Papa system
	Total	81	31	114	

3. Khammouane Provincial Water Supply produces chlorine as required by the districts - ongoing

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	Awaiting 1 water pump for completion	Work completed at 95%
	Provision of medical equipment	X ray machines, biochemistry and lab. Equipment, hematology unit, etc....	All equipment provided, but some training by suppliers still pending	95%
	Provision of vehicles	4 ambulances 12 motorbikes 4 4WD pick-ups	-	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.	-	70% 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 in MHX 13 Health education sessions in KK Five feedback meetings on the survey results in Nakai	172 sessions 32 481 participants
		- Relocation of medicinal plants - Training of traditional healers	Logistic problem with Traditional Medicine Research Center	
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	350 sessions 19 317 participants
		Strengthening health services delivery in health centers	Ongoing	Ongoing
		Strengthening health services delivery in villages	Ongoing	244 Monthly MCH Clinics in 61 villages
	Training	Community level (villages)	Ongoing	42 sessions 809 participants

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
		Health Centers (village – District and Provincial levels)		22 sessions 264 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	15 sessions 102 participants
	Meetings	Create Outbreak Detection and Response Preparedness Unit		100% - includes Avian influenza
		Meetings at provincial and district levels	Ongoing	101 meetings 1 606 participants
		Quarterly meeting at HC (VHVs, HCs)		12 meetings 380 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	Complete in Village Group I: Nong Boua Sop On Boua Ma Phonsavang Sop Ma Khone Kaen Done Ka Oy
		Monthly MCH clinics	Ongoing	244 Monthly MCH clinics in 61 villages
Equity fund		Payment of treatment for entitled PAPs	As and when required	21 individual referred to TTK hospital and financially supported



Visiting to remaining Sop Hia villagers by provincial, district and health centre staff as well as RMU Director and HPMU staff



Quarterly Meeting at Khammouane PHO



Monthly MCH clinic



Providing feedback in Nakai DHO on the results of health checks and survey of resettlement villages



On the job training obstetric care and supervision visit to Khamkeuth DH

Social Activities

Nakai Plateau Resettlement

2.3 Nakai Plateau Resettlement

2.3.1 General

March was another month of consolidation of the villages in transition – the eight villages that were established prior to and during the previous wet season. Access roads to all the villages were maintained in good condition for work to proceed smoothly

Good progress was again made in both the northern and southern resettlement area access roads as well as the Southern Resettlement Road to Area 22, on the southernmost tip of the plateau.

Villagers from Nong Boua Kham, Sop Hia and Nam Nian have begun preparing their housing plots at Area 9 and Area 7 and the construction of temporary houses (on their permanent plots) and community facilities. These villagers started their move to transition resettlement in March 2007, with the move to transition expected to be completed during April.



Transition Resettlers from Hia and Nam Nian participate in Agricultural training at Area 7.

As reported in the previous two monthly reports, the following measures have been implemented in order to improve and expedite the supply of sawn timber for houses:

- Better cooperation from housing contractors
- Re-design of houses to accommodate timber already delivered as much as possible
- Better quality control at saw mills through more coordinated supervision
- Better communication with and cooperation from villagers regarding acceptance of timber
- Efforts to further develop VFA operations to be able to do some re-processing

These efforts continued throughout March and good progress continues to be made in house construction at several villages. Many houses are now nearing completion at Boua Ma, Phonsavang and Sop On. The contractors for the northern villages of Sop Phene, Sop Hia and Sop Ma have also started erecting concrete piers for houses and have also started their timber construction, with most timber frames now erected at Sop Hia and Sop Ma.

Rice and protein distribution programmes as described in previous reports is continuing, as are bi-weekly health checks. Consultations with transition villagers were commenced in January 2007 in order to jointly agree on an appropriate plan for ramping down of transition support as villagers settle in and livelihood opportunities are provided. It has been agreed by the RC that although rice support will continue throughout the foreseeable future, protein support will discontinue as villagers income opportunities increase.

Efforts continue to be focused on clearing of agricultural plots (0.66 Ha plots) in time for villagers to make use of these plots during the upcoming wet season. Before access to the plots can be granted to the resettlers for preparation, the following steps need to be completed:

- VFA to remove hardwood (done in all areas except some agricultural areas near Thalang which are not yet accessible)

- DAFO to remove other commercially viable timber (now nearing completion)
- Remaining large trees to be cut into small pieces for villagers to handle, with a certain number of trees remaining, according to the requirements of the agricultural program. (This is being done by Army contractors in Sop Phene and Nong Boua Kham, and by the villagers themselves in the other areas.

Consultations with the remaining 18 Vietic (Ahoi) families in old Sop Hia are on-going, and it has been decided that another round of independent consultations with these families will be conducted in April. The purpose of these consultations will be to:

- ensure that these households have been fully informed of the choices available to them (which consist of Area 7 within the Nakai Plateau and several other alternatives identified as acceptable by GOL)
- Ensure that all the households understand the extent of support and benefits that they will receive according to the respective options available to them.
- Ensure that the households make an informed choice of their own volition.

An independent consultant has been identified and the consultations have been scheduled to take place in April 2007, immediately following the Lao New Year.

In the meantime, the 18 Vietic households remaining at Sop Hia have been placed on food support, and monitoring of health continues to be conducted by District staff. Arrangements are in place to move these households uphill, at their existing location, prior to the 2007 wet season, should a decision on final location not be agreed in the short term.



The Vietic (Ahoi) of old Sop Hia. – The old matriarch is seating at the top of the steps.

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 Gnao 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.

The chart presented on the following page shows progress of the respective tasks associated with resettlement of the Plateau villages.

				Transition																													
				Topo survey	Village layout design (Housing)	Village layout design (Agric.)	up Hill relocation	Access track	UXO temp area	Logging temp housig area	drill wells, hand pumps	Temporar y Schools	Temp. toilets	Building Temp. houses	Commencem ent of Transition Resettlement	Transition Support - food, health, household goods	Target Date - full transition	UXO whole areas	Logging whole area	Road Construct ion	Stump Removal	Clear housing area	Start House Building	Dismantle house and transport	Water Supply	Electricity	Communit y Buildings	Agric land preparatio n	Other non-farm activites	Irrigation	Target Date - Permanen t Houses Complete		
New area code	new area	village to move in this area	hh # (2006)																														
N1	8	Ban Hat Khamphane	22				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07	
N1	8	Ban Sop Ma	23				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07	
N1	8	Ban Keng Gnao	21				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07	
N2	16	Ban Keng Gnao	8				NR	NR		NR		NR					T2/06		NR									Jun-07			Feb-07		
N3	19	Ban Sop On	104				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07	
N3	19	Ka Oy	30				NR						Mar-07	Apr-07			T2/07						Feb-07	May-08	Apr-07		Dec-07	Jun-07	Oct-07	Apr-07	Dec-07	T2/08	
N4	21	Ban Done	142				NR										T3/06							Mar-07			Jun-08	Jan-08	Apr-07		Nov-08	T4/07	
N5	22	Ban Khone Khen	52				NR										T3/06							Mar-07			Jun-08	Jan-08	Apr-07		Nov-08	T4/07	
N6	11	Ban Sop Phene	56				NR										T2/06							Jan-07			Dec-07	Jun-07	Apr-07		Dec-07	T4/07	
N7	17	Bouama	74				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07	
N8	18	Ban Phonsavang	41				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07	
N15	7	Ban Sop Hia	37					Feb-07		Mar-07	Mar-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	T2/07		May-07	Mar-07	May-07	May-07	May-07	May-07	May-07	May-07	Dec-07	Jan-08	Oct-07	Apr-07	Dec-07	T2/08	
N9	8a	Ban Sop Hia (first group)	30														T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07	
N3	8a	Ban Nam Nian (first group)	6														T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07	
N10	9	Ban Nong Boua Kham	57				NR	Feb-07		Mar-07	Mar-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	T2/07			Jan-07	Mar-07	Mar-07	Mar-07	May-07	Feb-07	Dec-07	Jun-07	Oct-07		Dec-07	T1/08		
N11	13	Ban Thalang	73				May-07	Mar-07				Oct-07	Oct-07	Oct-07	Oct-07	Nov-07	Nov-07	T1/08			Oct-07	Oct-07	Oct-07	Nov-07	Mar-08	Oct-07	May-08	Nov-08	Dec-07		Nov-08	T1/08	
N12	1	Ban Nakai Neua	89				May-07	Mar-07				Oct-07	Oct-07	Oct-07	Oct-07	Nov-07	Nov-07	T1/08			Oct-07	Oct-07	Oct-07	Nov-07	Mar-08	Oct-07	May-08	Nov-08	Dec-07		Nov-08	T1/08	
N15	7	Ban Nam Nian	25				NR	Feb-07		Mar-07	Mar-07	Apr-07	Apr-07	Apr-07	Apr-07	Apr-07	T2/07		May-07	Mar-07	May-07	May-07	May-07	May-07	May-07	May-07	Dec-07	Jan-08	Oct-07	Apr-07	Nov-07	T2/08	
N13	2	Ban Nakai Tai	190				May-07	Mar-07				Oct-07	Oct-07	Oct-07	Oct-07	Nov-07	Nov-07	T1/08			Oct-07	Oct-07	Oct-07	Nov-07	Mar-08	Oct-07	May-08	Nov-08	Dec-07		Nov-08	T1/08	
N4	21	Ka Oy	3				NR								Mar-07		T2/07							Nov-07	May-07		Jun-08	Jan-08	Apr-07	Apr-07	Nov-08	T4 / 07.	
N14		Ban Oudomsouk / Phon Phan Pek	103+56				NR	NR				Nov-07	NR	NR	NR	NR	NR				Nov-07	Nov-07	Nov-07	Nov-07	Apr-08	Nov-07	Apr-08	NR	Nov-08	May-08	Nov-08	T2/08	

NR

Not Relevant

P

In procurement

C

Contract signed, mobilization phase

Implementation - On going

Task completed

2.3.2 Infrastructure

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

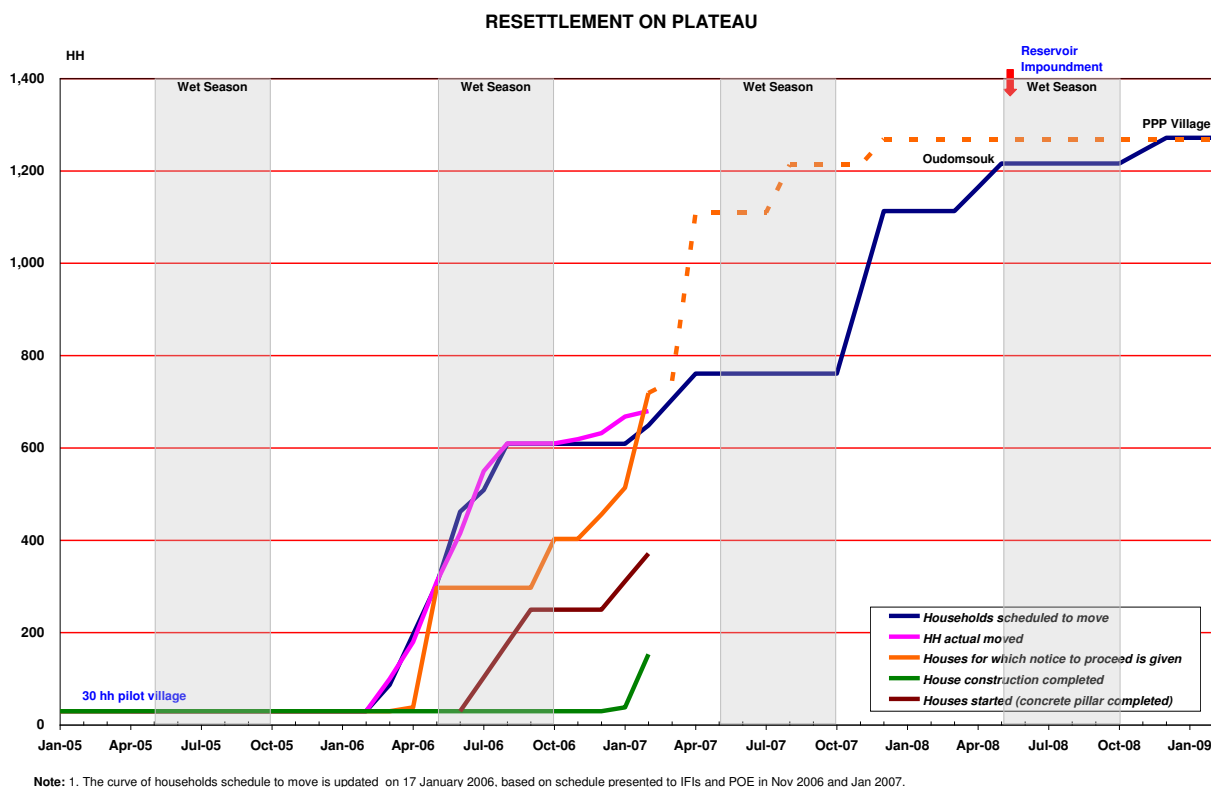
Nakai resettlement

Status at end of March 2007

		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	159	1290
	Houses to be constructed	674	487	159	1320
	Resettled to date (all infrastructures complete)	0	0	0	0
	Resettled to date (transitional)	671	71	0	742
Infrastructures	ha to be cleared (housing plots)	171.42	122.26	0	294
	ha de-stumped	186.1	62.16	0	248
	ha cleared	184.42	62.16	0	247
	% access road	94%	52%	0%	28%
	% village road	79%	19%	0%	16%
Wood - Timb er	m3 Total required (frames,floors,walls)	8390	6164	2059	16613
	m3 delivered total	2956	0	0	2956
Houses	transitional houses built	604	17	0	621
	Notice to proceed given (number of houses)	674	61	0	735
	concrete pillars erected (number of houses)	409	0	0	409
	permanent houses completed (excluding connection to the electricity grid)	72	0	0	72
	permanenent houses completed (including electricity)	38	0	0	38
domestic water	number of tubewells to drill and equip	107	72	16	195
	Successful wells drilled	99	6	0	105
	pumps installed	50	5	0	55

Timber house construction has continued at a slow rate of progress at the six VG1 villages notice to proceed has been given to the contractors of three of the seven VG2 contracts which were awarded in February. A further contract was signed for Area 7 house construction in March and this contractor will commence construction straight away.

In March, four contracts were signed for a total of 3,503 m3 of sawn timber from three Nakai Plateau sawmills and one from Savannakhet. A storage warehouse was rented in Oudomsouk and rehabilitation works have commenced and the recruitment of staff advanced.



2.3.2.1 Figure: progress of relocation and house construction

2.3.2.2 Topographic survey and mapping

In anticipation that the eighteen ex-Nam Pan Sop Hia and Nam Nian households, that previously did not wish to move to Resettlement Areas 8A, may at some time in the future decide to move to Area 7, a contract for the survey and mapping of a 35 ha potential agricultural plot area was prepared with HEC-Engineering. The contract will be signed in March. It was previously reported that these families might choose to move to an area known as Pong Phai, located west of Ban Thalang. However this did not happen.

The setting out of boundary markers for the resettlers house and agricultural plots is a continuing activity. The contract with SM Survey Equipment Supplies for the two month hire of a Senior Surveyor and a Total Station surveying instrument was extended by a further two months to include survey work required for the data collection of Oudomsouk households that will be impacted by Nakai Reservoir inundation.

2.3.2.3 Finalization of village location – Village layout Design

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

Name of the original villages in VG2	New village area	Village layout	Agriculture Layout
Thalang	Area 13	Complete	Complete
Nakai Tai	Area 2	Complete	Complete
Nakai Neua	Area1	Complete	Complete.
Done	Area 21	Complete	Complete
Khone Khen	Area 22	Complete	Complete
Oudomsouk and Phonphanpek	Oudomsouk Urban Area B and Area 15	First draft completed. No further progress until the number of households known	No further progress until the number of households is firmly known.

2.3.2.4 UXO search and clearance

The contractor has 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. To the end of February 2007, 1,982 UXO items, including 1,788 bomblets, have been found and destroyed by the response team. At the time of this report preparation, the results for March were not available.

Additional UXO awareness training for project staff, including managers and extension workers was undertaken.

2.3.2.5 Roads and drainage

Bid and contract award procedures are underway for the construction of the access roads and tracks for Nakai Tai and Nakai Neua and Area 7 and Area 13 agricultural area access roads were signed.

There are four ongoing road construction contracts and they made varying degrees of progress during the month.

Southern VG1 Access roads to and within villages:

The construction of access roads to and within the new villages of Bouama (area 17), Phonsavang (area 18) and Sop On (area 19), are substantially complete with the only outstanding works being minor finishing on some of the agricultural area access tracks.

Southern Resettlement Road:

The construction of the 11.765 km long Southern Resettlement Road is also substantially complete and a certificate of completion is in the process of being issued.

Oudomsouk Urban Area Access Roads

The construction of access roads in Oudomsouk Urban Area B is necessary for the Oudomsouk families that will be impacted by inundation of the Nakai Reservoir. The contractor was given the construction of the road works via two Variation Orders to Contract C715. The first Variation Order was for the construction of the main access road from the existing Urban Area A, through the new Urban Area B to the new Road 8B, which is being constructed by the NT2 Head Contractor. The company has made good progress with the construction of a fairly large reinforced concrete box culvert with four cells, 1.5 x 2m each and road embankment filling. It is estimated that these works are about 73% complete.

The same contractor has also signed a second Variation Order for the construction of the access road network from the above road to the individual resettlers houses.

Northern Access roads to and within villages:

The contractor has made poor progress with 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. This is mainly due to continuing breakdowns with the earthmoving and compaction machinery. The company has been sent a letter stating in strongest terms that they must complete the remaining works soonest or face penalties. It is estimated that the works are about 95% complete with the installation of a couple of small culvert crossings and some tree stumps at Area 9 remaining.

Northern Access roads to and within villages, Contract C979:

As stated above, the contract for the construction of the access roads to and within Area 7 and for the Area 13 agricultural area was signed. The contractor is in the process of mobilizing equipment and constructing the camp.



Area 7 taking shape

Southern VG2 Access roads to and within villages:

The construction of access roads to and within the new villages of Done (area 21) and Khone Khen (area 22) have slowed down also principally because of earthmoving machinery breakdowns. The Contractor has completed all the clearing and tree stump removal work on both areas and made progress with embankment compacted fill works at Area 21. However there is poor progress at Area 22. It is estimated that the contract works are about 41% complete.

2.3.2.6 House Construction

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

Progress with the contracts is as follows:

C604, Area 14 for Bouama, 75 houses, Area 16 for Keng Gnao, 13 houses 8 houses for Keng Gnao resettlers at Area 16 are complete and the other 5 are under construction. The 74 houses for resettlers and 1 house for school teachers at Bouama are still under construction. The contract is about 92% complete with the availability of wall planks to finish off the works still a problem. Without the walls, it is not possible to complete the electrical works.

C605: Area 18 for Phonsavang, 42 houses: the 42 houses are under construction (41 for resettlers) and the contract is about 70% complete. Wall planks and electrical works are still not complete.

C606: Area 19 for Sop On, 137 houses: one house is complete and work on 136 houses commenced and construction of substantial construction of 104 houses underway. The contract is about 55% complete.

C607: total 106 houses, Area 8a for Sop Hia first group, 36 houses and Sop Ma 68 houses: Included are two houses for school teachers. Foundation and concrete columns are completed and minimum timber construction completed.

C608: Area 9 for Nong Boua Kham, contract 61 houses: Foundation and concrete column works is continuing on about half of the houses.

C609: Area 11 for Sop Phene, contract 58 houses: Foundation and concrete column work is continuing.

In February seven contracts were signed for the construction of timber houses in five VG2 villages. The villages of Ban Done and Ban Nakai Tai are large and the house construction was divided into two contracts. In March, one contract was signed for the construction at Area 7, second group of Sop Hia and Nam Nian resettlers. The total number of VG2 houses to be constructed is now 647.

Progress with notice to proceed is as follow:

C803, Area 21 for Ban Done, Hamlet No. 1, 80 houses: Notice to proceed 28 February 2007 and little progress apart from general mobilization.

C804, Area 21 for Ban Done, Hamlet No. 2, 80 houses: Notice to proceed 28 February 2007 and little progress apart from general mobilization.

C805, Area 22 for Khone Khen, 58 houses: Notice to proceed 28 February 2007 and little progress apart from general mobilization.

C806, Area 2 for Nakai Tai, Hamlet No. 1, 102 houses: No notice to proceed.

C807, Area 2 for Nakai Tai, Hamlet No. 2, 102 houses: No notice to proceed.

C808, Area 1 for Nakai Neua, 97 houses: No notice to proceed.

C809, Area 13 for Thalang, 84 houses: No notice to proceed.

C1011, Area 7 for Sop Hia and Nam Nian second group, 44 houses: The contractor is to commence construction upon contract signature.

In order to solve the problem of the delivery of sawn construction wood the following contracts have been signed in March:

- 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 continuing to provide sawn timber from resettlement area logs.

In order to provide storage for the sawn timber before allocation and delivery to the various house contractors, a large warehouse in Oudomsouk has been rented. This is requiring some rehabilitation works, which have commenced, and the recruitment of labor and security personnel. Also to be stored in the warehouse will be hand pumps, gensets and fertilizer.



Wall planks going up in
Phonsavang



Uxo awareness
training for project

2.3.2.7 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 opening of bids for the VG1, and some of the VG2a (schools and health centers) buildings, was held 9 February 2007. Ten companies submitted bids for the four contracts and a bid evaluation report was completed and sent to the Bank for a letter of no objection

2.3.2.8 Domestic Water Supply and Sanitation

Boreholes with hand pumps:

As foreseen, and due to the fact that the 2 drilling rigs of the Champasack Water Supply Section (the contractor) were repatriated to Pakse for heavy periodic maintenance and necessary repairs on several high-tech components, no physical implementation of the programme has been realized on the field excepted the installation of 4 hand pumps replacing temporary installed electric pumps.

Therefore, at the end of this reporting period, there is still an actual total of 140 deep boreholes are successfully completed out of 161 drilled since the beginning of the operations in December 2005. The total number of failures is now 21 for a global rate of about 13.5%. The rate of failures has now increased with the activities focusing now in the villages located in northern area of the Village Group 1, where more adverse soil conditions than in the south are met and therefore better drilling sites have to be investigated. The outcome of these constraints has been the decision to postpone the implementation in those northern areas to the phase No 2 planned from May to December 2007, but provided that sufficient installations are in place.

The recapitulative progression for March 2007 and the summary of the actual performance vs initial and update plan (based on the continuous reconciliation of the data on resettlers' population) is included in the following pages along with a tentative schedule of planned interventions until 31 December 2007. This following summary also includes the boreholes drilled for the benefit of Project Affected Persons (PAPs) by the construction of the Nam Theun 2 infrastructure (ref. Table 1 "Project lands") as well as those under the health infrastructure rehabilitation plan (ref. Table 3) and the Pilot groundwater based irrigation scheme in Sop On area 19. This pilot scheme is pre-designed and the construction will start with the drilling of 9 boreholes in early April.

The Variation Order No 1 to the contract C675 has been signed in February in order to reconcile the actual implementation status, the next finalized additional needs (addition of area 7 and adjustments of the coverage targets in each village according to resettlers population), the real actual and next expected costs as well as to provide time to install the hand pumps. This contract has been extended to 30 April 2007 but it is foreseen a supplementary extension of 1 month for HPs complete installation.

The hand pumps ordered through UNICEF Procurement Services have finally been delivered to Thanaleng Port of Entry and under custom clearance process. Their delivery to Nakai is expected not later than 10 April and their installation just after Lao New Year.

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 has been defined and negotiated with the Champasack Water Supply Section. This contract will be signed in early April with starting date established on 30 April 2007 immediately after the completion of the current C675 contract

Nam Theun 2 Power Company Ltd

ENVIRONMENTAL AND SOCIAL DIVISION

NTPC - Construction of machine drilled boreholes for domestic water supply and irrigation schemes

RECAPITULATIVE MONITORING DRILLING PERFORMANCE

SITUATION ON MONTH OF: 31 March 2007

RECAPITULATIVE TABLE No 1: 'Project Lands'						Balance vs plan		Total Completion				
			Initial plan - Dec 2005		Update Plan	Productive	Equipped	Total BHs drilled	Productive	Equipped	Failures	Failures
			Option average coverage 8 Houses/BH	Difference initial plan vs update plan	Option average coverage 8 Houses/BH	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled
No	New Area	Villages	Total Qty	Total Qty	Total Qty							
1	ODS New Urban area A (Oudomsouk May)	Oudomsouk SD12B PAPs	9	1	10	0	1	10	10	9	0	0.00
2	ODS New Urban area (Primary School)	Oudomsouk SD12B PAPs	1	0	1	0	0	1	1	1	0	0.00
3	ODS	Oudomsouk SD12B PAPs - ODS old areas 8, 7 and market	5	0	5	0	0	5	5	5	0	0.00
4	PPP	Pon Pan Pek - Intake PAPs	5	0	5	0	0	5	5	5	0	0.00
5	ODS	NRC Oudomsouk - Reserve	0	1	1	0	1	1	1	0	0	0.00
6	GML	New 8 Houses GML (electric pumping)	0	1	1	0	1	1	1	0	0	0.00
7	GML	GML Horticulture Demonstration Center (electric pumping)	0	1	1	0	1	1	1	0	0	0.00
8	GML	Gnommalath Tay	0	12	12	11	12	1	1	0	0	0.00
9	GML	Gnommalath Neua	0	16	16	15	16	1	1	0	0	0.00
10	GML	Ban Lao Naa Ngam	0	8	8	7	8	1	1	0	0	0.00
11	GML	Ban Phone Lath Khouey (Nalath Khouey)	0	5	5	4	5	1	1	0	0	0.00
12	GML	Ban Tongmang	0	3	3	2	3	1	1	0	0	0.00
13	GML	Ban Sangkeo	0	8	8	8	8	0	0	0	0	
14	GML	Ban Nongseng	0	4	4	3	4	1	1	0	0	0.00
16	GML	Ban Thad	0	3	3	3	3	0	0	0	0	
17	GML	Ban Koboung	0	3	3	3	3	0	0	0	0	
18	GML	Ban Koud Pha Dang	0	2	2	2	2	0	0	0	0	
19	GML	Livelihood compensation - Mr. Khen (Ban Sangkeo)	0	1	1	1	1	0	0	0	0	
SUB TOTAL Project lands			20	69	89	59	69	30	30	20	0	0.00

RECAPITULATIVE TABLE No 2: "Nakai Plateau resettlement"						Balance vs plan		Total Completion				
			Initial plan - Dec 2005		Update Plan	Productive	Equipped	Total BHs drilled	Productive	Equipped	Failure	Failures
			Option average coverage 8 Houses/BH	Difference initial plan vs update plan	Option average coverage 8 Houses/BH	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled
No	New Area	Villages	Total Qty	Total Qty	Total Qty							
1	16	Ban Nongboua, Keng Nyao (PV)	7	2	9	1	4	8	8	5	0	0.00
2	17	Ban Bouama	11	0	11	2	4	15	9	7	6	40.00
3	18	Ban Phonsavang	8	-1	7	0	0	8	7	7	1	12.50
4	19	Ban Sop On	17	2	19	0	8	19	19	11	0	0.00
5	8	Ban Sop Ma, Hatkhamphan, Keng Nyao	11	0	11	0	7	11	11	4	0	0.00
6	8a	Ban Sop Hia Vietic	7	0	7	2	4	8	5	3	3	37.50
7	9	Ban Nong Boua Kham	10	1	11	8	9	8	3	2	5	62.50
8	11	Ban Sop Phene (incl. additional 2 BHs for temporary relocation)	9	2	11	3	10	12	8	1	4	33.33
9	21	Ban Done	22	1	23	0	15	24	23	8	1	4.17
10	22	Ban Khon Kaen	8	1	9	0	9	10	9	0	1	10.00
11	1	Ban Nakai Tay	27	0	27	27	27	0	0	0	0	
12	2	Ban Nakai Neua	14	0	14	14	14	0	0	0	0	
13	13	Ban Thalang	12	0	12	12	12	0	0	0	0	
14	7	Ban Sop Hia/ Nam Nian	11	-1	10	7	7	3	3	3	0	0.00
16	xxx	Oudomsouk	15	-1	14	14	14	0	0	0	0	
17	PPP	Ban Pon pan Pek	0	2	2	2	2	0	0	0	0	
SUB TOTAL Resettlement villages			189	8	197	92	146	126	105	51	21	16.67

RECAPITULATIVE TABLE No 3: "HEALTH INFRASTRUCTURE"						Balance vs plan		Total Completion				
			Initial plan - Dec 2005		Update Plan	Productive	Equipped	Total BHs drilled	Productive	Equipped	Failure	Failures
				Difference initial plan vs update plan		Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled
No	District	Buildings	Total Qty	Total Qty	Total Qty							
1	Gnommalath	Gnommalath Hospital	1	0	1	0	1	1	1	0	0	0.00
2	Gnommalath	Khed Phit Health Center	1	0	1	0	1	1	1	0	0	0.00
3	Gnommalath	Nadou Health Center	1	0	1	0	1	1	1	0	0	0.00
4	Gnommalath	Nasok Health Center	1	0	1	0	1	1	1	0	0	0.00
5	Kamkeuth	Kaeng Deng Health Center (september)	1	0	1	0	1	1	1	0	0	0.00
SUB TOTAL Health Infrastructure			5	0	5	0	5	5	5	0	0	0.00
GRAND TOTAL 1			214	77	291	151	220	161	140	71	21	13.04

RECAPITULATIVE TABLE No 4: " PILOT IRRIGATION SCHEME - NAKAI RESETTLEMENT"													
			Initial plan - Dec 2005		Update Plan	Balance vs plan		Total Completion					
						Productive	Equipped	Total BHS drilled	Productive	Equipped	Failure	Failures	
				Difference initial plan vs update plan		Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled	
No	New Area	Villages	Total Qty	Total Qty	Total Qty								
1	19	Sop On	0	9	9	9	9	0	0	0	0		
SUB TOTAL Irrigation schemes Nakai Re			0	9	9	9	9	0	0	0	0		
GRAND TOTAL 2			214	86	300	160	229	161	140	71	21	13.04	

RECAPITULATIVE TABLE No 5: " DOWNSTREAM WASH PROGRAMME"													
			Initial plan - Dec 2005		Update Plan	Balance vs plan		Total Completion					
						Productive	Equipped	Total BHS drilled	Productive	Equipped	Failure	Failures	
		183 villages		Difference initial plan vs update plan	Estimates	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled	
No	District	Villages	Total Qty	Total Qty	Total Qty								
		Pilot villages - Start October 2007 - 16 villages	0	40	40	40	40	0	0	0	0		
		Pilot villages + non- pilot riparian villages - 2008 - 20 villages	0	165	165	165	165	0	0	0	0		
		Non-pilot hinterland villages - 2009 - 25 villages	0	100	100	100	100	0	0	0	0		
		Non-pilot hinterland villages - 2010 - 31 villages	0	100	100	100	100	0	0	0	0		
		Non-pilot hinterland villages - 2011 - 91 villages	0	55	55	55	55	0	0	0	0		
SUB TOTAL Downstream WASH Programme			0	460	460	460	460	0	0	0	0		
GRAND TOTAL 3			214	546	760	620	689	161	140	71	21	13.04	

RECAPITULATIVE TABLE No 6: " IRRIGATION SCHEMES - NAKAI RESETTLEMENT"													
			Initial plan - Dec 2005	Difference initial plan vs update plan	Update Plan Estimates	Balance vs plan		Total Completion					
						Productive	Equipped	Total BHS drilled	Productive	Equipped	Failure	Failures	
						Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	Cumul to date	% of total drilled	
No	New Area	Villages	Total Qty	Total Qty	Total Qty								
1	All	All	0	100	100	100	100	0	0	0	0		
SUB TOTAL Irrigation schemes Nakai Reset.			0	100	100	100	100	0	0	0	0		
GRAND TOTAL 4			214	646	860	720	789	161	140	71	21	13.04	

Construction of machine drilled boreholes for domestic water supply in:

- 1) Resettlement Villages New Areas - Nakai District, Khammouane Province
- 2) Health Centers and District Hospitals - Gnommalath District, Khammouane Province and Khamkeuth District, Bolikhamsay
- 3) Project Land areas - Nakai and Gnommalath Districts, Khammouane Province
- 4) Pilot irrigation scheme - Ban Sop On - Nakai District

INDICATIVE GENERIC TENTATIVE SCHEDULE OF IMPLEMENTATION UP TO DECEMBER 2007

DRILLING AND EQUIPPING BOREHOLES OF MINIMUM 30 METERS AND MAXIMUM 60 METERS DEPTH

		General Data			Year 2007									
New Area	Name of Village/Health Center/Hospital	Maximum Qty required (cov. 1/8HHs)	Qty already completed on date	Maximum Qty completion balance on date	Mar. C675 no	Apr. C675 2 rigs	May C1012	June C1012	July C1012	Aug C1012	Sept C1012	Oct C1012	Nov C1012	Dec C1012
		Update			C675		NEW CONTRACT C1012 planned Qtys and period							
1- Resettlement areas														
16	Ban Nong Boua (PV)	9	8	1			1							
17	Ban Bouama	11	9	2			2							
18	Ban Phonesavang	7	7	0										
19	Ban Sop On	19	19	0										
8	Ban Sop Ma/ Hatkhampan/Keng Nyao	11	11	0										
8a	Ban Sophia Vietic	7	5	2			2							
9	Ban Nong Boua Kham	11	3	8		2	3							
11	Ban Sop Phene (incl. additional 2 BHs for temporary relocation)	11	8	3			3							
21	Ban Done	23	23	0										
22	Ban Khon Kaen	9	9	0										
	SUB TOTAL 1 PHASE 1	118	102	16	0	2	11							
xxx	Oudomsouk	14	0	14			14							
	Pon Pan Pek	2	0	2			2							
2	Ban Nakai Tai	27	0	27			27							
1	Ban Nakai Neua	14	0	14			14							
13	Ban Thalang	12	0	12		3	12							
7	Ban Sop Hia/Nam Nian	10	3	7			7							
	SUB TOTAL 2 PHASE 2	79	3	76	0	3	76							
Total 1 resettlement areas		197	105	92	0	5	87							
2- Health Centers and District Hospitals														
GML	Gnommalath Hospital	1	1	0										
GML	Khed Phit Health Center	1	1	0										
GML	Nadou Health Center	1	1	0										
GML	Nasok Health Center	1	1	0										
KK	Kaeng Deng Health Center	1	1	0										
Total 2 Health Infrastructure		5	5	0	0	0	0							

		General Data			Year 2007									
New Area	Name of Village/Health Center/Hospital	Maximum Qty required (cov. 1/8HHs)	Qty already completed on date	Maximum Qty completion balance on date	Mar. C675 no	Apr. C675 2 rigs	May C1012	June C1012	July C1012	Aug C1012	Sept C1012	Oct C1012	Nov C1012	Dec C1012
					C675		NEW CONTRACT C1012 planned Qtys and period							
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	1	11						9				
GML	Gnommalath Neua	16	1	15		2				11				
GML	Ban Lao NaaNgam	8	1	7		7								
GML	Ban Phonlathkhouey	5	1	4		4								
GML	Ban Tongmang	3	1	2						2				
GML	Ban Sangkeo	8	1	7						8				
GML	Ban Nongseng	4	0	4						4				
GML	Ban Thad	3	0	3						3				
GML	Ban Kobung	3	0	3						3				
GML	Ban Koud Pha Dang	2	0	2						2				
GML	Livelihood compensation Mr. Khen (Ban Sangkeo)	1	0	1		1								
Total 3 Project lands		89	30	59	0	14				42				
GRAND TOTAL Domestic WS		291	140	151	0	19				129				
4- Pilot Irrigation scheme														
19	Ban Sop On - Agriculture plots block No 3	9	0	9		9								
Total 4 Irrigation schemes		9	0	9	0	9				0				
GRAND TOTAL incl.irrigation		300	140	160	0	28				129				

Update 31.03.2007

Expected maximum remaining implementation period for contract C675 - Including HPs installation

2.3.2.9 Irrigation Systems

The progress with the construction of the extension area to the Pilot Village irrigation scheme for the resettlers from Ban Keng Gnao improved in March. Pipeline and fitting installations are nearly complete and it is expected that the system will be tested in early April. Once tested, and no leaks observed, pipeline trenches will be backfilled and the construction will be complete.

The preparation of irrigated agricultural layouts is an important part of the resettlement village planning exercise and this has been reported on above. The preparation of the layout is underway for the Area 7 extension area using the recently completed contour maps.

A review of the design of the pilot irrigation area at Sop On (area 19), using ground water for irrigation, was made in February and it was decided to revise some aspects of the layouts. A review of the revisions showed that further design modifications are necessary. It is now expected that bidding procedures for the installation of submersible pumps, pipelines and header tanks will commence in Mid-April. Drilling and development of the boreholes is schedule to take place in April.

2.3.2.10 Electricity

Between supervising various works for non-resettlement contracts, such as for public health facilities the Senior Electrical Engineer is continuing with the preparation of design, layouts and quantity estimates for the resettlement villages

The preparation of bid documents for the installation of the village distribution systems and house connections at Bouama, Phonsavang and Sop On was delayed and bid procedures will commence in April. Letters have been sent to various contractors enquiring if they are interested to bid and if so, to submit qualification criteria. Bids were received for a small contract for the construction of shelters for the generators purchased for Bouama, Phonsavang and Sop On and are being evaluated.

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 March 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	0	0	0	0
	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 prepared ready to cultivate (following Ag/liv progr)	180	0	0.0	180
	ha equipped for irrigation	28	0	0	28
	Target for cultivation (ha)	144	105	0.0	249
	Ha cultivated	92	0	0.0	92
	Target for coverplant (fallow improved/pasture in ha)	288	210	0.0	498
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
	Ha prepared ready to cultivate (following Ag/liv progr)	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	Ha to be sowed in pasture (maximum 5 ha per hh)	2863	1193	0	4055
	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	Target seasonal land for cultivation or pasture (ha)	1428	742	0	2170
	Ha prepared (following Ag/liv progr)	219	65	0	284.3
	Ha sowed in crop	0	0	0	0
	Ha sowed in pasture	0	0	0	0
VFA	VFA quarterly Board meeting (since Oct 2006)	0	0	0	0
	VFA staff training (target)(man.day)	0	0	0	0
	VFA staff trained (man.day)	0	0	0	0
	sawmill completion progress (ongoing / completed)	0	0	0	0
	number of furnitures produced	0	0	0	0
Livestock	Target registered large ruminants (%)	100%	100%	100%	1
	Large ruminant registered (%)	63%	62%	0%	55%
	Target for training about breeding per hh (hh/day)	5232	3816	0	9048
	Training about breeding for hh	0	0	0	0
	Target for meeting about health animal senzitivization for breeders (breeders/day)	54	30	0	84
	Meeting about health animal sensitivization 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
	boats required	0	0	0	0
CD	boats built/provided	0	0	0	0
	off-farm activities (number of families engaged in OFA)	86	4	0	90
	number of vulnerable hh	34	0	0	34
	number of vulnerable hh getting additional support	28	0	0	28
	number of disturb. Allowances paid	0	0	0	0
	Food security - kg of rice distributed	417629	2141	0	419770
	Food security - kg of meat/fish/eggs distributed	0	0	0	0
	education material (% of children equipped for the current year)	0%	0%	0	0
	saving and credit (1 comitee per village)	0	0	0	0
	LSMS - number of survey carried out (2 / year - 1st in Aug 2006)	91	108	0	199
grievance process	grievance total	64	0	0	64
	new grievance for this month	3	0	0	3
	grievances closed total	14	0	0	14
	grievance closed during the month	1	0	0	1
	total grievances still open	0	0	0	0

2.3.3.1 Communication

No change from previous report.

2.3.3.2 Staffing

No change from previous report.

2.3.3.3 Institutional strengthening

No change from previous report.

2.3.3.4 Land allocation

No change from previous report.

2.3.3.5 Nakai Plateau Forestry Development Program**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 (m³) from sawmill</i>	<i>Delivery (m³) to contractors</i>
1	Sawmill Lak 20			
2	Sawmill Nakai		59.219	
3	Sawmill Xio		95.657	
4	VFA Sawmill		104.063	
5	Changed			
	Total		258.939	
1	Total supplied to all contractors			44.033
2				34.848
3				118.115
4				212.497
5				23.254
6				36.752
	Total			469.499

<i>Total 2006 up to now</i>	<i>Total Production (m³)</i>	<i>Total Delivery (m³)</i>	<i>Total Remaining VFA storage (m³)</i>
	4,805.834	3,237.314	1,568..520

2.3.3.6 Furniture, handicraft manufacture

Production in March 2007:

<i>Description</i>	<i>Quantity</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>
Decoration pole5x5			
Decoration pole10x10			
Blackboard Frame			
Room numbering panel			
Small table			
Door frame			
Window frame			
Window			
Total			4,382,000

2.3.3.7 Charcoal & Brick making

The villagers are very busy with the relocation from old to new village and at the same time they have to clear their land for agricultural purpose. They stopped other works including Charcoal production.

2.3.3.8 Silviculture (Plantation, Nursery, Enrichment)

Nursery

Seedling production:

<i>Description</i>	<i>Quantities</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>
valuable native species seed harvested – <i>Tectona grandis</i>	12 kg		

Plantation

No change from previous report

Forage

No change from previous report

NTFP

No change from previous report

2.3.3.9 Nakai Plateau Agricultural and Livestock Development Program

2.3.3.10 General meetings in the villages

During the month of March, the meetings in the villages had been made for 4 villages. So, all the villagers have been informed on the implementation of the Agroecology approach: methodological, technical and financial points.

2.3.3.11 Preparation of the fields

Inside the drawdown, the farmers have been authorized to make slash and burn for this season to produce rice. Globally, there is a good level of work in this type of area. However inside each village, the level of implication is not the same between each farmer. In total, it represents 11 villages, 236 ha, 448 farmers.

For the preparation of the fields of 0.6 ha, the level of participation is more important for the village of the South than the villages of the North.

For the villages of Sop Phene, Nong Boua Kham and Thalang, the farmers are waiting the end of the work of the cutting of the big trees, to be able to start the preparation of the fields. At 20th of March, the Army (under NTPC contract) has started to cut the trees in Nong Boua Kham. This same team will make the work in Sop Phene and after in Thalang.

We still have some problems of logs stored inside the fields of 0.6 ha (Nakai Tai, Nakai Neua, Khone Kaen, Ban Done, Sop Ma, Sop Hia). These logs are the property of private companies under contract with the DAFO.

The progress of the preparation is globally late in front of the objective (sowing in May of the cover plants and rice). This is essentially because of the late in the process of land allocation. The CD team and the infrastructure have finished their work of allocation during the month of March. So, the farmers were waiting for this allocation to start in their fields.

2.3.3.12 The land allocation

The work of land allocation managed by the A&L team is now in process for the additional land of 3 ha. A global scheme of allocation has been finalized at our level during this month. With this scheme, we planned to have an equivalent allocation of 3 ha/farmer, for all the villages. During April, this global scheme is going to be approved by the VFA and the authorities.

2.3.3.13 The recruitments

The work of land allocation managed by the A&L team is now in process for the additional land of 3 ha. A global scheme of allocation has been finalized at our level during this month: an equivalent

allocation of 3 ha/farmer in each village. During April, this global scheme is going to be approved by the VFA and the authorities.

Villages	Number of house hold	Number of fields of 0.66 ha in progress of preparation	Making the fences for the fields of 0.6 ha	Draw down zone Current Slash and burn (ha)
Khone Kaen	52 hh	51	0	8
Ban Done + Ka Oy	151 hh	113	0	56
Sop On	141 hh	136	20	16
Phonsavang	44 hh	43	23	30
Boua Ma	74 hh	74	3	15
Nong Boua + Keng Gnao	38 hh	36	22	17
Nakai Neua	89 hh	74	4	4
Nakai Tai	201 hh	133	3	0
Area 7 + Nam Nian	41 hh	1	0	0
Sop Ma	74 hh	69	0	14
Sop Hia	36 hh	38	8	15
Nong Boua Kham	58 hh	0	0	28
Sop Phene	56 hh	0	0	35
Thalang	79 hh	0	0	14

2.3.3.14 Fisheries Reservoir Program

The field study has been carried out and a draft report on the Reservoir Fisheries Management Program has been released to NTPC on 1st April 2007.

The final report, approved by the Ministry of Agriculture and Fisheries is expected to be available by the end of April 2007.

2.3.3.15 Community Development Program

Main activities are on final census for the remaining VG1 and VG2 villages. Consultations are conducted to know Nongbouakham relocation planning and uphill relocation of Nakai Tai, Nakai Neua and Thalang due to the main dam impact this wet season. Last group of Vietic families are still subjected to final consultation by an independent facilitator.

After most of the resettlers having been properly relocated, CD Team will concentrate to explore their off-farm activities to contribute as much as possible to their incomes and new living conditions. A lot more and more members joining activity groups (wicker work, weaving, tailoring, food processing and savings). Incomes statistics are being compiled for this month and the months to come. Small trade within the village will be supported also for the months to come, since this can help the resettlers' incomes (but limited members to be supported).

Rice and protein are still procured to support all resettlers. However protein support will cease at end March 07 for the first three villages moved more than 9 months ago as per RC approval.

Vulnerable people and families are being treated with special care and suitable income activities are being explored to cope with their needs.

Grievance procedures and system (at district and village levels) have been improved all the time. Cases were recorded and filed.

It is noted that Irrigation O&M activities for all villages have been transferred to Agriculture and Livestock Team at the end of March 07 (including Nongboua village).

2.3.3.16 Non-farm CD Activities

Monitor tailoring funds by District Lao Women Union at the Sop on, Bouama, Phonsavang, and Nongboua which are still in actions and doing well.

Consultation with Phonsavang, Ka Oy and Keng Gnao -Nong Boua 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:

- Phonsavang total 41 households : amount 4,900,000 kip saved in BCEL;
- Keng Gnao move to Nongboua 9 households : amount 840,000 kip in BCEL;
- Ka Oy to Sop on and Done village total 36 households: amount 3,690,000 kip in BCEL.

Wicker work: will be on study tour to Phonsytha village, Thakhek District on 5th May, one person from each village (15 persons + 1 per DWG + 1 SRO) – product for sale and to explore marketing of wicker work in Thakhek market.

Weaving group (Sop Hia Area 8a) is on-going and for next time will improve and change some of production from cotton to silk. For this month weaving members returned fund to Village Development Fund 9 persons (350,000 kip)

Tailoring activities continued to return funds and each member received more income per month.

Village Revolving Fund Committee (VRFC) 're activity plan meeting on role and duties of VRFC district level, 8 attendants (3 women) and plan on 27-31/3/2007 to conduct consultation about Pasason Fund.

District teams' consultation Pasason Fund and selection village fund committee. 7 villages as follows:

Details activities are as below table:

No.	Village	Date	Participants	Male	Female
1	Sop Phene	27/3/07	30	12	18
2	Sop Ma	27/3/07	61	23	38
3	Nongboua	28/3/07	38	19	17
4	Bouama	28/3/07	69	32	37
5	Sop On	30/3/07	109	37	72
6	Done	30/3/07	82	49	33
7	Khone Kaen	31/3/07	49	27	22

Food production:

Training on Tea production for 4 groups, 3 days per group (Ginger tea, Lemon grass tea, Aegle marmelos tea):

- 1st group of 3 persons from Sophia and 3 persons from SopMa village: 6 attendants
- 2nd group of 6 persons from Sop on and 5 persons from Phonsavang village
- 3rd group of 8 persons from Khone Kaen village and 6 persons from Done village
- 4th group of 5 persons from Bouama and 4 persons from Nongboua

Some of trainee will produce tea for sell in the village, and some needs NTPC to find the market for production.

Education:

- Nursery in 9 villages: monitored and provided lunch support for children on-going (479 children of which 221 female).
- New nursery will be started in April at Nongbouakham village and Area 7 (village relocation on mid- March).
- Monitor of non-formal teachers: we have 19 teachers in 10 villages and number of students 389 person (293 women)

- To monitor primary school at Sop Hia – Area 7 and will be open on April, 30 student and 12 female.

Micro-credit: Village saving groups have been monitored in December in 9 villages (588 members) – Attachment SG table.

Rice and Food support:

Continuous Monitoring and provision of rice, protein at Sop On, Phonsavang, Bouama, Sop Ma, Nong Boua extension, Sop Phene, Sop Hia- Area 8a, Done, Khone Kaen, Nongbouakham, SopHia – Area 7 (11 villages – 3559 persons= 54,768 kg).

Continuous Monitoring and provision protein at SopMa, Sop Phene, SopHia- Area 8a, Done, Khone Kaen, Sop Hia – Area 7 and Nongbouakham (7 villages – 1925 persons).

Protein: once per week (fresh meat or fish 437 kg/per week, dry meat or dry fish 437 kg/per week, fish can: 4387 can/ per week).

Other activity: on 27-28/3/2007 to be baseline survey for villager contribution all of NTPC activities during village relocation (puppet drama – prompt) – 5 villages: Done, SopOn, Bouama, SopMa and NamNian: 34 attendants (12 women)

Census:

100% completed for resettlers to Area 7: From Sop Hia – Area 7 (75 persons: 16 HH) and Nam Nian to Area 7 (110 persons: 22 HH). 10 persons: 3 HH from Sop Hia – Area 8 (Area 7 before).

ICD/VRC/CD

No	Activities / Locations	Dates	Participants	Outputs/ Results
1.	Ban Nakai Tai House and Agriculture plots Selection Consultation	14-15/03/07	SRO: 4 persons DWG: 1 person 176 attendant (77 women)	All understand and agree with the House and Agriculture plots Selection consultation
2.	Follow up Relocation Planning activities for Ban Nam Nian to Ban Nongbouakham	1-31/03/07	SRO: 1 person DWG: 1 person	27 families Moved to Area 9
3.	Follow up Relocation Planning activities for Ban Nam Nian to Ban Phonthong Khamkeut District Bolikhamxay province	26-31/03/07	SRO: 1 person DWG: 1 person	5 families moved to Ban Phonthong Khamkeut District
4.	Follow up Relocation Planning activities for Ban Sop Hia/Nam Nian to Area 7	1-24/03/07	SRO: 1 person DWG: 2 persons	Moved in to the temporary houses 38 families

Village saving group in March 2007

No.	Name of village	No. of Member	Saving Deposited	Total No. Loans disbursed	Total No. Loans Repaid	Total Loan Interest Received	Total No. Loans outstanding	Total No. Loans Outstanding past	Total value of past due loans	Current total fund value
1	Nakai Neua	33	18,345,000	12	12,200,000	601,000	31,200,000	13,800,000	45,000,000	51,000
2	Nakai Tai	13	405,000	0	0	75,000	500,000	1,800,000	2,300,000	438,000
3	Oudomsouk	336	100,253,000	59	221,325,000	34,044,000	317,225,000	461,575,000	778,800,000	36,112,000
4	Thalang	38	22,036,000	8	0	0	14,900,000	0	14,900,000	7,160,000
5	Bouama	55	0	0	1,500,000	450,000	0	1,134,000	1,134,000	1,950,000
6	Nongbouakham	19	4,030,000	7	450,000	1,159,000	5,680,000	21,420,000	27,100,000	7,500
7	SopOn	14	410,000	1	2,700,000	149,000	3,000,000	5,100,000	8,100,000	1,229,500
8	Phonphanpek	33	2,300,000	3	0	0	2,200,000	0	2,200,000	280,000
9	Nongboua	47	0	0	2,500,000	438,000	0	7,400,000	7,400,000	3,143,000



Ban Nakai Tai House and Agriculture plots Selection Consultation



*Nam Nian village move to Phonthong village, Khamkeut District
Bolikhamxay province*

Social Activities

Downstream Areas

2.4 Downstream Areas Development Plans

Downstream Program - status at end of March 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 2013 (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	51	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)	+/- 200	+/- 200	+/- 200	+/- 40	0	0	Tubes Well
(WA)SH program (including sanitation facilities)	86	86	75	16	0	0	Village
Agriculture, horticulture - TA + support	86	86	86	51	0	14	Village
Livestock - TA + support	86	86	86	51	0	14	Village
Fisheries co-management (villages component)	86	86	86	0	0	0	Village
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW
Aquaculture	86	86	86	46	0	14	Village
Saving and Credit	86	86	86	51	0	14	Village
Handicraft	86	86	86	31	0	7	Village

HINTERLAND							
Total villages Hinterland : 97	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit
VDCC + Villages comitees establishment	97	59	6	6	0	6	Village
Mini-Polders							
Flood gates rehabilitation							
Water supply (tube wells)	+/- 260	+/- 130	12	12	0	0	Tubes Well
(WA)SH program (including sanitation facilities)	97	59	6	6	2	2	Village
Agriculture, horticulture - TA + support	97	6	6	6	0	7	Village
Livestock - TA + support	97	6	6	6	0	7	Village
Fisheries co-management (villages component)	97	97	50	0	0	0	Village
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW
Aquaculture	97	97	TBA	6	6	0	Village
Saving and Credit	6	59	6	6	0	6	Village
Handicraft	0	0	6	3	0	3	

Downstream of the dam							
Total villages DS of the dam : 38	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit
VDCC + Villages comitees establishment	38	38	38	38	0	0	Village
Mini-Polders							
Flood gates rehabilitation							
Water supply (tube wells)	n/a	n/a	n/a	n/a	0	0	Tubes Well
(WA)SH program (including sanitation facilities)	n/a	n/a	n/a	n/a	0	0	Village
Agriculture, horticulture - TA + support	n/a	n/a	n/a	n/a	0	0	Village
Livestock - TA + support	n/a	n/a	n/a	n/a	0	0	Village
Fisheries co-management (villages component)	38	12	6	0	0	0	Village
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW
Aquaculture	n/a	n/a	n/a	n/a	0	0	Village
Saving and Credit	38	38	38	38	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 for 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

- Quarterly VDCC / RMU / DWG / NTPC Downstream Program coordination meeting
- Jatropha nurseries established in two pilot villages
- Sanitation awareness training commenced in pilot villages
- Procurement of sanitation facility materials began for four villages
- Design of a mini-polder scheme in the lower Xe Bangfai region continued
- Village fund training courses were conducted.

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

During the reporting period, Downstream Program team members participated in the following meetings:

- IFI management meeting, held in Thakhek on 5 March 2007
- LTA meeting on 19 March 2007
- Quarterly VDCC/ RMU/DWG Downstream Program coordination meeting

A Downstream Program section leader meeting is held 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. Meeting with RMU is also held every Tuesday after section leader meeting. Starting in April it is expected that the RMU coordination meeting will be held every other week.

Reports

The latest revision of the Downstream Livelihood Restoration Program report was submitted to IFI in October 2006. Official comments have not been received yet.

2.4.4 Administration

Personnel issues

The interviewing of candidates for additional administration/financial staff (1 position) was conducted in March 2007. Further interviews will be undertaken in April 2007.

The requisition for 4 additional drivers was submitted for approval in January 2007 but was not approved during the reporting period. It is expected that the new vehicles will arrive during the month of May to support the ever increasing level of field activity being undertaken by the Downstream Program.

The Downstream Program Flood Control / Irrigation Engineer submitted his resignation on 5 February 2007 and finished his assignment on 5 March 2007. Interviews with four potential replacement candidates were conducted during the reporting period. It is expected that a candidate will be selected during the month of April.

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 banks in Khammouane Province, problems currently identified with the 20 pilot villages, issues relating to existing village fund bank accounts with

BCEL, development of a strategy for outsourcing microfinance activities to commercial banks in the future; recruitment of one more part-time staff (seconded from the RMU) for fish catch monitoring data entry in April 2007; collection of UXO data for Khammouane Province, and other issues related to the Downstream Program.

2.4.6 Community Organization / Village Development Fund

Village Organization - VDCC

A VDCC Quarterly Meeting was held on 28 March 2007. More than 70 people participated in the meeting, which included 8 RMU staffs, 10 DWG's and 40 VDCC from the 20 pilot villages. All NTPC Downstream technical staff attended the meeting to address the issues raised by the VDCC / RMU / DWG members. NTPC Downstream staff also presented brief progress reports on specific downstream program activities. Emphasis was given during the meeting on lessons learned to date, both positive and negative.

The meeting provided an opportunity for involving all downstream program implementation sectors to share comments. In general, discussions highlighted the lack of support from village authorities for the downstream program and the need for more participation of district officers to assist VDCC in motivating households to participate in demonstration activities. Other problems identified included difficulties in managing the village fund and saving fund in term of insufficient accounting procedures, incomplete implementation guidelines and limited knowledge regarding cash management.

To address the issues mentioned above the Community Development team, together with DWG's, conducted village fund management training sessions for 6 VDCC members from each pilot village. After completion of the training the NTPC team will visit every village for follow up training and assist VDCC in revising village fund/saving fund guideline with household level which included replacing new accounting procedures. The Community Development team was occupied with revising the VDCC structure and its function in some of the 20 pilot villages as in some villages there exist previous Village Development committees not established by NTPC downstream program that caused a confusion of their tasks and responsibility.

Village Revolving / Saving Funds

During the reporting period the Community Development team facilitated six training courses on Village Fund Management, included one set of training for "Training of Trainers". The outputs from a short term Micro Finance Consultancy had developed new financial systems and procedures for managing NTPC compensation fund in the villages. The Community Development Team addressed management issues from the previous system in this training course such as adjusting job descriptions of 5 VDCC, Advisory Committee and Audit Committee. The agreement on loan periods, loan repayment and interest rates for different activities were also discussed during the training courses.

The training course was held for three days per set and for each set there were a total 24 participants, with participants from each of the 20 villages. A total of 47 women participated in the training. The revising of different business plan formats was addressed by a representative of downstream livelihood team.

Daily evaluation and feedback was conducted during the training, to improve and emphasize VDCC trainers to have more experience and take full responsibility.

The table below is showing the number of participants and their achievements from the training courses:

Items	Total Participant		High score 80%-100%	Middle level 60%-79%	Low level 50%-59%	Failed (need more training)
	Male	Fem				
TOT Course	14	9	12	10	1	0
VDCC 1 st set	16	8	11	9	1	2
VDCC 2 nd set	16	8	6	11	4	3
VDCC 3 rd set	16	6	0	5	8	9
VDCC 4 th set	16	8	5	9	5	2
VDCC 5 th set	16	8	9	8	4	2
Total=	94	47	43	52	23	18

2.4.7 Livelihoods

General

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

Agriculture / Horticulture

Jatropha plantation activity

Jatropha nursery in Kengpe village was completed, which included construction of the nursery house, and installation of a water pump. Seedling production has commenced. Twenty-three households are involved.

In Veunsananh Village, 6 households began construction of a jatropha nursery. The Downstream Program is providing the village with seeds, plastic bags, plastic shade material, water cans, nails, fertilizer, and other basic materials. Seed germination has already begun. Over 4,000 seedlings were transferred from the Gnommalat nursery to Veunsananh.

Dry season rice and crop production

Dry season rice and crop production activities within 18 pilot target villages in the 4 districts. Summary activities

Items	Total Participant		High score 80%-100%	Middle level 60%-79%	Low level 50%-59%	Failed (need more training)
	Male	Fem				
TOT Course	14	9	12	10	1	0
VDCC 1 st set	16	8	11	9	1	2
VDCC 2 nd set	16	8	6	11	4	3
VDCC 3 rd set	16	6	0	5	8	9
VDCC 4 th set	16	8	5	9	5	2
VDCC 5 th set	16	8	9	8	4	2
Total=	94	47	43	52	23	18

Aquaculture

Downstream aquaculture activities during the reporting period included:

- Fish seed production - Demonstration households successfully sold fish seed (approximately 5,000 head) to other villages. Results of a sample of fish seed production in nursery ponds and rice field of only three seed producers was completed, with results as follows:

No	Producer name	Village	Species produced		Remarks
			Tilapia	Common cap	
1	Mr. Peunmany	Beungxe	15,000	150,000	2.5 -3.0cm
2	Mr. Syphakang	Beungxe	5,000	50,000	3.5 - 4.0cm
3	Mr. Phanh	Navangneua	3,000	30,000	2.0 -2.5cm

- NTPC staff and staff from Gnommalat district Livestock and Fisheries have been monitoring and advising village committees in Khoksavang and Khamfeuang on fishpond management and fish feeding. The sampling growth of fish stocked was done and the estimation of fish production in both villages are shown the table below:

Species	Tilapia	Common carp	Silver carp
Khoksavang Village			
Average weight(g)	53g/head	76.5g/head	46g/head
Initial stocked	1,600heads	400heads	3,600heads
Estimate production	84.8kg	30.6kg	165.6kg
Total estimated		281kg	
Khamfeuang Village			
Average weight(g)	200g/head		50g/head
Initial stocked	500heads		2,500heads
Estimate production	100kg		100kg
Total estimated		200kg	

- Fish culture in the irrigated area – Sampling average length of fish that have been stocked in rice field and pond in Pova, Mahaxai, Hatkhamhieng, Yangkham, Navangneua and Hatxaifong villages has been done and the summary results are shown in the table below:

Village	Tilapia	Common Carp	Silver Barb
Pova	6cm	5cm	
Mahaxai	5-6cm	5cm	
Hatkhamhieng	7-9.5cm	3.5-6.5cm	6-8.5cm
Yangkham	7-13.5cm	5.5-9.5cm	6-9cm
Navangneua	6-12cm	4-8cm	6-12cm
Hatxaifong	6-10cm	5-10cm	10-12cm

- Consultation with Khamfeuang village committee and villagers was undertaken to finalize the number of new fishpond that will be constructed in April 2007. Until now 26 households are interested in borrowing village fund money to construct new fishponds. Pova and Mahaxai villagers are interested in constructing new fish ponds and are currently preparing business plans in order to receive the necessary loan from the village fund.
- Yearly and quarterly activity planning for fish culture in the 20 target villages was developed.
- Fish feed machines were demonstrated to fish farmers in Pova, Mahaxai, Beungxe and Navangneua. Training includes how to use the machines, fish feed formulation and processing.
- New fish farmers were selected to be target fish farmers in Nongping Village, Gnommalat District. Selection of other target fish farmers will be continued in Mahaxai, Xe Bangfai, Nongbok and Xaibouli district in the next quarter.
- A budget proposal for supporting community fishpond, fish seed production and nursing network was developed and submitted for comment and approval to the Downstream Manager.

Livestock Activities

Downstream pig activities during the reporting period included:

- On the job training for village veterinary workers on village medicine fund;
- Completion of a farmer-field day to visit the most successful pig farmers.
- Castrating piglets in demonstration villages;
- Animal veterinary care and vaccination;
- Follow up with pig raising groups.
- Preparation of an extension brochure on:
 - Improved rural pig production.
 - Wet season forage planting for pig feed.
 - Livestock production systems.
 - Village animal regulation.

During the reporting period the Downstream team obtained data that indicates about 23% of Mong Cai pigs have died this year from diarrheal disease. This disease can be caused by many different microbes, both bacteria and viruses. These microbes can enter healthy pigs when they eat feed or

water that is contaminated with faeces from affected pigs. The microbes go to live in the small or large intestine.

There are 778 pigs in 10 downstream pig raising demonstration villages: 563 pigs of local variety, 59 Mong Cai (Vietnamese Local Breed) pigs, and 156 other imported pigs. A total of 153 currently households raise pigs by using village fund, with most families owning between 5 to 20 pigs.

Handicraft

During the reporting period, handicraft / weaving training was held in Ban Kengpe from 26 February to 7 March 2007. The purpose of the training was to:

- establish weaving groups for different cotton and silk handicraft products in 10 pilot villages;
- provide training on natural dying techniques using local growing vegetation;
- provide information to villagers about market demand for different types of handicrafts so that products can be adjusted.
- train villagers in new silk pattern weaving design (Mat Me)
- provide knowledge to weaving and handicraft groups on investment calculation and realistic pricing of products;
- train handicraft and weaving groups to formulate their household business plans, including investment costs, market, logistics, and trade opportunities to enable use of the village fund;
- Check quality of production from previous training;

In total, 21 participants from 9 villages within 5 districts attended the training sessions. The training sessions demonstrated that the participants had a strong sense of commitment and concentration and that they were very responsible in managing their time.

2.4.8 Infrastructure Related Activities

Mini-polder construction

A topographic survey for one mini-polder scheme was completed during February. The scheme includes 5 villages: Yangkham, Hatkhamhieng, Somsat, Naphoktha, and Namphou, three of which are pilot villages. During the month of March processing of the field survey was completed and preliminary design drawings prepared. A meeting was held on 7 March with GoL representatives to discuss the status of implementation and further clarification regarding the mini-polder concept.

Water Supply / Sanitation / Hygiene (WASH)

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

- Submittal of a requisition for the procurement of sanitation & hygiene promotion materials, such as posters, books, pamphlets, and videos.
- Conducted a full day coordination meeting with district counterparts from Gnommalat, Mahaxai and Xe Bangfai districts. Topics discussed during the meeting included:
 - a) NTPC WASH planning (types of activities, schedules, etc.)
 - b) Explanation of the role of the RMU, district and provincial counterparts
 - c) Logistic / administrative arrangements for government staff to work with NTPC
- Finalized plans & agreements for household and school toilet construction in 9 villages within 3 districts.
- Conducted sanitation and hygiene training at Phathoung primary school. The emphasis was on clean water and hygiene promotion. A total of 47 students participated, 29 were female.

It is expected that during the following reporting period the following activities will be undertaken:

- Work with Khammouane Province sanitation / hygiene coordinator to prepare training seminars for district counterparts and village volunteers.
- Conduct further sanitation awareness programs at various schools
- Distribute materials for toilet construction in 9 villages.

Water Gate rehabilitation

No activity for water gate rehabilitation during the reporting period.

Asset Restoration

No activity for asset restoration / relocation was undertaken during the reporting period.

Irrigation activities, including Operation & Maintenance

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

UXO Activities

Preparation of a UXO risk assessment paper for the downstream area continued.

2.4.9 Fish Catch Monitoring

General

Presently, fisheries monitoring is ongoing in 39 villages. See following table.

Province	District	Villages	District Monitors	Participating Households
Bolikhamxay	Khamkeut	11	1	55
Khammouane	Gnommalat	6	1	30
	Mahaxai	6	1	30
	Xe Bangfai	6	1	30
	Nongbok	3	1	15
Savannakhet	Xaibouli	7		35
3	6	39	5	195

The following 39 villages are included in the daily fish catch monitoring of 5 selected households.

	Village	District
1	Phathoung	Gnommalat
2	Nongping	Gnommalat
3	Khoksavang	Gnommalat
4	Nalatkhuy	Gnommalat
5	That	Gnommalat
6	Naxok	Gnommalat
7	Povatai	Mahaxai
8	Nakio	Mahaxai
9	Khamfeuung	Mahaxai
10	Mahaxaitai	Mahaxai
11	Povaneua	Mahaxai
12	Dangkang	Mahaxai
13	Hatkhamhieng	Xe Bangfai
14	Yangkham	Xe Bangfai
15	Veunsananh	Xe Bangfai
16	Kasee	Xe Bangfai
17	Kengpe	Xe Bangfai
18	Sang	Xe Bangfai
19	Hatxaifong	Nongbok
20	Navangneua	Nongbok
21	Hatxiengdee	Nongbok
22	Beungxe	Xaibouli
23	Nasang	Xaibouli
24	Nonenakham	Xaibouli
25	Dongmakfai	Xaibouli
26	Veunsivilai	Xaibouli
27	Beungbouathong	Xaibouli
28	Thaphoxai	Xaibouli
29	Khammouane	Khamkeut
30	Vangpha	Khamkeut
31	Phonthong	Khamkeut
32	Chengsavang	Khamkeut
33	Oudom	Khamkeut
34	Sopphouan	Khamkeut
35	Phonthob	Khamkeut
36	Phonpheng	Khamkeut
37	Nakham	Khamkeut
38	Vangkor	Khamkeut
39	Nongxong	Khamkeut

At each of these 39 villages, household fish catch is monitored on a daily basis by 5 households. Forms are filled in by in total 195 households and collected by 5 fish catch monitors. Subsequently these forms will be delivered to the data entry contractor in Vientiane. These activities are ongoing.

In addition to the monitoring of household fish catch, in each of the 39 villages, fish catch information is collected through (i) village profile meetings and household interviews (20 households per village), (ii) interviews with fish traders, and (iii) monitoring of large scale fisheries, and community fishing activities.

Activity	Total Completed	Increase from last reporting period	Remaining to be completed	Estimated total
Daily Household Monitoring	44,584	3,924	99,416	144,000
Profile meetings	72	4	4	76
Individual HH interviews (Phase 1+2)	1,437	83	123	1,560
Fish trader interviews	36	1	24	60
Traditional community fishing interviews	300	-	-	300
Large scale fishery assessments	35	1	0	35

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.

The potential impacts from NT2 on this region include:

- 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 38 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 should be recruited to strengthen the fish catch monitoring team.

During the reporting period, the following activities were undertaken:

- Daily household monitoring continued
- An additional fish catch monitor supervisor was hired for Khamkeut District on a part time based (20 days/ month) to assist with checking all the forms

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 enter into the database through the new part-time staff recruited through the RMU.

2.4.10 Photographs



Village handicrafts



Raw materials for handicrafts (all natural)



RMU & DWG quarterly meeting



Jatropha Nursery



Demonstration on Chilli in Nongping



Demonstration on Chilli in Nongping



Pig castration



Pig Vaccinations



Fish Pond production in Khamfeuang



Fish Ponds in Navangneua



FCM activities upstream of the Nakai Reservoir, on the Nam Theun

2.4.11 Fisheries Reservoir Program

Two consultants have been recruited to formulate the Reservoir Fisheries Management Program. Both were mobilized in early February, 2007 to Thakhek and subsequently to Nakai. During their time in Nakai, the consultants visited villages in the impoundment area, as well as the resettlement areas for consultation. Interviews and meetings have been held with organizations agencies as well as government organizations and NTPC divisions that will be involved in reservoir management. The consultants have demobilized and are now preparing their report, which is expected to be submitted in draft form in early April. The final report is expected to be available by the end of April 2007 and is to be submitted for approval by the Ministry of Agriculture and Fisheries.

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 March 07 have included the following:

- Contractual activities to re-survey some sites for the fish and aquatic habitats baseline.
- Ongoing baseline wildlife survey and wildlife management and monitoring planning activities. Submission of the Progress Report.
- Ongoing Interim Human Elephant Conflict (HEC) Monitoring and continued contractual activities for Elephant Program Phase II.
- Commencement of survey activities for the interim wetlands which is a management measure for the wildlife management and monitoring program
- Commencement of the environmental education component of the Transitional Strategy.
- Procurement activities for the wildlife rescue and patrolling boat 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 March 2007 include:

Contractual activities for consultant to re-survey 3 sampling sites which were surveyed during the baseline species and habitat survey in 2006. The fish specimens collected at these 3 sampling sites were destroyed in transit. Re-survey activities are scheduled for the dry season 2007 to collect resident fish species rather than migratory species.

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

Phase I Activities were commenced by the service provider on 30 September 2006 and the baseline survey and wildlife management plan are schedule to be submitted on 31 July 2007.

Activities during March 2007 include:

- Ongoing baseline survey and management planning activities. The Progress Report has been submitted and is under NTPC review. In Summary, the Progress Report presents the following findings:

Birds

- In all area from which previous records of the White-winged duck have been surveyed, no evidence of the White-winged duck has been found. However, these results should not be taken as conclusive absence of the species.
- River Lapwings are possibly in decline since the 1990s, and there may be fewer kingfishers than expected. Further analysis still required.
- Lesser Fish Eagle found in three areas of the Plateau which is encouraging.
- First records on the Nakai Plateau of five species of birds, though none are of conservation concern.

Large mammals

- Otter presence detected in the majority of river stretches. Fresh otter signs are less common than in 1990s surveys which suggest fewer individuals. Further analysis is required.
- Pigs, muntjacs, and Sambar appear relatively abundant but no signs of big cats or wild cattle.

Herptiles

- 35 reptiles and 20 amphibian species recorded. Three turtle species classified as vulnerable by IUCN but are aquatic so the reservoir may present a more suitable habitat: (i) Asiatic Softshell turtle; (ii) Asian Box turtle; (iii) Asian Giant Pond turtle. One turtle species classified as Endangered is the Elongated Tortoise. This species is found elsewhere in SE Asia and inhabits dry forest. Two species (1 frog & 1 lizard) are potentially undescribed but were recorded outside the inundation area.

Small Mammals

- 38 species recorded which represents an exceptionally high diversity for Indochina. The level of distinctiveness of the species needs to be established by detailed genetic and morphological analysis.

Phase II

Activities in March 2007 include:

- Commencement of survey activities for interim wetlands habitat to be established above FSL to act as a buffer for impacts that inundation will have on existing wetlands on the Nakai Plateau.
- Two consulting firms have surveyed the NPA and identified 7 potential sites in which to construct interim wetlands.
- Survey Report submitted which presents (i) wetland location; (ii) wetland design; (iii) dyke design; (iv) timber; and (iv) manpower requires. Presentation of survey outputs to WMPA for approval.

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. The draft Final Report for Phase I was submitted on 31 May 2006. 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 146 individuals has been estimated based on the DNA analysis.

NTPC is in the final stages of contract negotiations with WCS to conduct Phase II. Phase II is expected to commence in May 2007. 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 March 2007 include:

- WCS is finalizing the Phase I Final Report.
- Ongoing contractual activities for Phase II.
- 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	7

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.

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

Activities during March 2007 include:

- The Wildlife Management and Monitoring Program provided recommendations on wildlife rescue activities, and concluded that an extensive wildlife rescue program is not required. A wildlife rescue plan will be developed by the consultant in April 2007. The wildlife rescue specialist developing the plan has been identified as the likely person to conduct implementation. A boat that has been reviewed by the wildlife rescue specialist for use during rescue and patrolling is under procurement.

- To instill environmental awareness in the Nakai Plateau population an education program will be implemented. The scope has been expanded from CA obligations to include (i) general environmental awareness (waste management, hygiene, etc.); and (ii) target audience of Resettlers, school children, and resettlement construction workforce. During March 2007, the consultant has been contracted to conduct the program up until COD. The consultant has conducted the pre-education survey of the target audience to act as a baseline to measure the success of the education and to identify people's understanding to help tailor the environmental syllabus.
- The EMU has identified the need for GOL to be responsible for control and enforcement of wildlife protection and prevention of wildlife trade. Refer to section 3.4.

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

NTPC and WMPA have agreed to take steps to formalize an Adaptive Management Committee for the wildlife programs in terms of committee members and frequency of meetings.

3.3 Water Quality Monitoring and Assessment Program

The WQMAP includes the following monitoring:

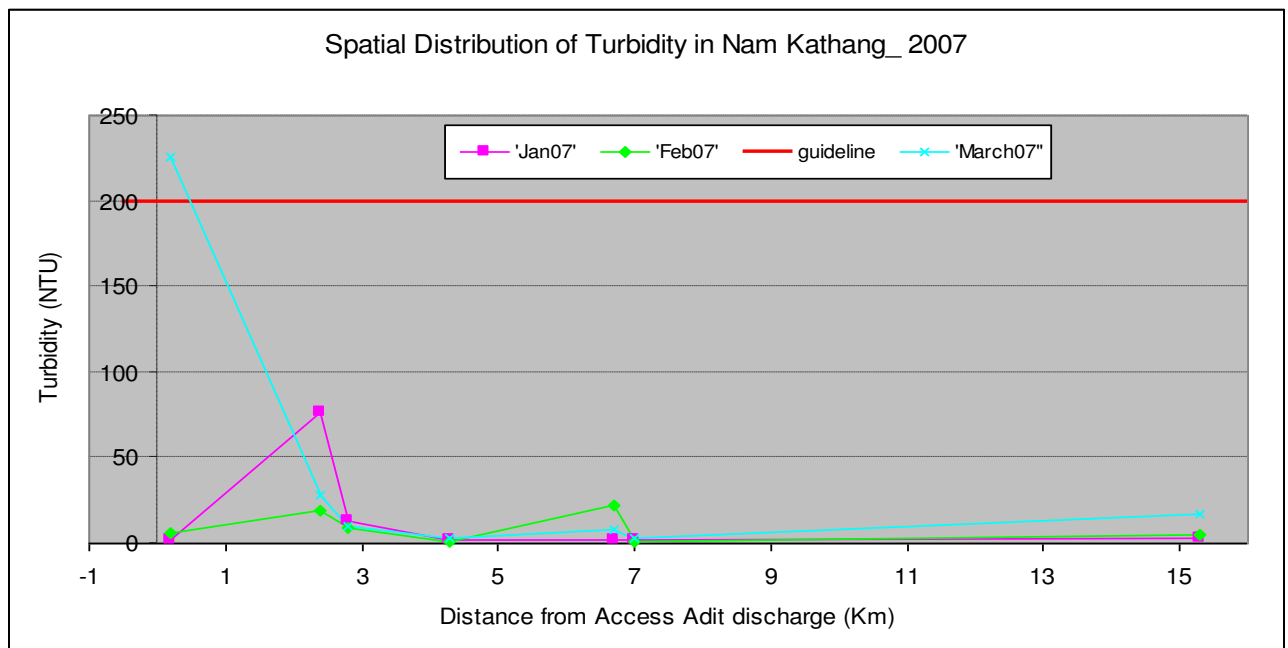
- 25 parameters on a monthly basis and 7 parameters on a weekly basis at 17 Surface Water sampling sites. These are located upstream and downstream of construction areas on the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit, and Xe Bangfai. Given the potential for Project increases in sediment load, the 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 bi-annual or annual basis for leachate and landfill observation wells, and 23 parameters on an annual basis for HC/CC potable water.
- 12 physiochemical parameters at 15 Resettlers and Project Lands Groundwater sampling site on a quarterly basis. 1 bacteriological parameter at 33 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 physiochemical parameters and 1 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.
- 1 bacteriological parameter at 15 Public Health Groundwater sampling sites on a quarterly basis. These are restaurants associated with camp followers.

Field Observations - March 2007

The major field observations and measurements are as follows:

- The turbidity in the upper Nam Kathang exceeds the previous guideline which reflects an increase in rainfall and surface runoff from cleared construction areas, and in particular the Saddle Dam 12b.
- After an initial exceedence in the upper Nam Kathang, turbidity levels are then within the guideline from downstream of the Power House to Ban Gnommalat. The exceedence in the upper Nam Kathang is resulting from discharge from the Saddle Dam 12b.
- Discharge from Saddle Dam 12b construction site was 178 NTU, the discharge is then picking up sediment from newly excavated Saddle Dam 12b discharge channel as it descends the Nakai escarpment to the Nam Kathang.

- There was no discharge from the Access Adit Platform 415 sedimentation basins during sampling.
- Discharge from the Power House was 43 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 the discharge from the Headrace Channel to the wetland area adjacent to Ban Phonphanpek was 37 NTU.
- There was no discharge from the Access Adit Platform 415 sedimentation basins during sampling.
- Discharge from the Power House was 43 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 the discharge from the Headrace Channel to the wetland area adjacent to Ban Phonphanpek was 37 NTU.





Turbidity Sampling sites

February 2007 Water Quality Results

The laboratory results for March 2007 will be presented in the April 2007 monthly progress report.

The laboratory analytical results for February 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

- The water quality in the Nam Theun continues to be considered as good with no significant exceedences of the Project Water Quality Guidelines (“Guidelines”).
- pH is less than the lower range of the Guideline at SW2. The source is likely acidic groundwater representing a higher proportion of the dry season surface water flow. The Nam Theun catchment is mainly forested with little limestone karst formation. The WHO suggests that a pH less than 6.5 would markedly impair the portability 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.
- Potassium slightly exceeds the Guideline at SW1 but this value is not deemed to present a risk to human or environmental health, and is not deemed to be Project-related.

Nam Kathang

- No flow in the upstream control site (SW4).
- The water quality in the Nam Kathang can be considered good with few significant exceedences of the Guidelines.

- Alkalinity exceeds the Guideline downstream of the Power House (SW5), RNT (SW9), and lower Nam Kathang (SW14). The likely source is a higher proportion of groundwater, from a limestone dominated catchment, in surface water flow. Groundwater from the water conduits at the Power House may also be contributing, however, with no flow in the upstream control (SW4) for comparison, this is difficult to confirm. The measured levels are not deemed to pose a risk to human health.
- Potassium exceeds the Guideline downstream of the Power House (SW5) and RNT (SW9). It is likely that elevated potassium is being sourced from mineral solution in groundwater with a mica containing catchment. 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.

Nam Gnom

- The water quality in the Nam Gnom continues to be considered as good with few significant exceedences of the Guidelines.
- Alkalinity and calcium both exceed their respective Project 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, from the limestone karsts which surround the upper Nam Gnom catchment, in surface water flow.
- Potassium slightly exceeds the Guideline at SW12 but this value is not deemed to present a risk to human or environmental health.

Nam Phit

- No flow in the upstream control site (SW13).
- The water quality in the Nam Phit can be considered as good with few exceedences of the Guidelines.
- Alkalinity and calcium both exceed the 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 level is not deemed to be significant.

Xe Bangfai

- The water quality of the Xe Bangfai can be considered as good with no exceedences of the Guidelines.

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 was sterilized with ethanol prior to sampling to prevent contamination from the hand pump casing. Post sterilization faecal coliform levels exceed the Lao standard at RGW14, 15, 21, 26, and 34. For these sites it appears that the source of the contamination is from within the groundwater. There is a further problem for RGW32 with an observed increase in faecal coliforms during storage in the header tank. The groundwater facility at Ban Sangkeo appears to be heavily contaminated. 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.

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:

- pH exceeds the upper range of the proposed guideline for discharges at the Dam Site and Access Adit. The source of these exceedences is likely to be cement waste entering the discharge. The human health implications of extremes in pH are discussed above.
- TSS exceeds the proposed guideline for the Regulating Dam discharge. From an environmental health perspective, a high sediment load would have a negative effect on the primary productivity of the river with a reduction in light penetration and therefore photosynthesis. Over the long term, a reduction in primary productivity could subsequently impact fish production. Although some fish species may be adapted to wet season elevations in suspended solids, prolonged exposure to elevated levels of suspended solids may have several sub-lethal effects on fish resulting in a negative impact on fish productivity (such as siltation of fish spawning grounds, irritation of fish gills, induced stress, loss of food or ability to feed, etc.). From a human health perspective, the measured levels can make water significantly less palatable and sediment can also act as a substrate for bacteria growth and absorption of metal ions which can all have a negative impact on human health

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:

- With the exception of CAMP 5, TSS exceeds the proposed guidelines at all CAMP discharges. The environmental and human health implications are discussed above.
- Ammonia exceeds the proposed guideline in the Oudomsouk camp discharge (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 the proposed guideline in the RNT camp discharge (CAMP 6). 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-feed infants from methemoglobinemia, and poses a threat to human health.
- Oil and grease exceed the proposed guideline in the effluent for two of the Nakai Dam Site trickle filters. 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 biological trickle filters through coating the biological solids and interfering with oxygen transfer. Contamination with oil and grease can make water significantly less palatable.
- Coupled with elevated oil and grease, COD exceeds the proposed guideline in the effluent for two of the Nakai Dam Site trickle filters. The source of the high COD is high organic matter content of the camp discharge, with contributions from oil and grease. Although COD also measures those organic compounds not readily oxidized by biological action, a high COD may result in a decrease in dissolved oxygen in the surface water downstream of the discharge.
- Total Phosphorous exceeds the proposed guideline in the effluent for one of the Nakai Dam Site trickle filters. 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.

- Faecal coliform exceeds the proposed guideline in all camp discharges. The source of these exceedences is septic waste entering the grey water system of the camps. The human health implications are discussed above.

Table: February 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				25/02/07	25/02/07	24/02/07	24/02/07
Sampling Time				10.37 h	08.45 h	12.15 h	12.05 h
Water Depth	(m)			0.7	2.0	5.6	3.0
Sampling Method				grab	grab	grab	grab
Air Temperature	(oC)			24.1	23.4	26.0	25.4
Cloud Coverage				98	10	100	100
Water Temperature	(oC)			24.1	24.5	25.8	25.5
pH		6.0-8.0		6.1	5.5	6.9	7.1
DO	(mg/L)	> 5.0		7.24	6.89	7.79	7.53
% DO Saturation	(%)			90.9	86.9	100.3	97.4
Conductivity	(µS/cm)	< 350 or <750*		*	*	*	*
Turbidity	(NTU)	< 200		10.49	5.97	58.06	15.35
Total suspended solids	(mg/L)	< 40 or <80*		4.2	4.3	10.2	3.1
Alkalinity	(mg/L)	-11	36.26	27.2	26.8	26.4	26.8
Ammonia-nitrogen	(mg/L)	< 0.5		0.056	0.076	0.046	0.042
Nitrate-nitrogen(NO3-N)	(mg/L)	< 3.4		0.138	0.055	0.009	0.009
Nitrite-nitrogen(NO2-N)	(mg/L)	< 0.2		ND2	ND ²	ND ²	ND ²
Potassium (K)	(mg/L)	-11	1.072	1.13	1.02	0.892	0.895
Sodium (Na)	(mg/L)	300		3.76	3.75	3.19	3.51
Manganese (Mn)	(mg/L)	< 0.5		0.019	0.044	0.031	0.032
Total iron (Fe)	(mg/L)	< 1.0		0.584	0.826	0.400	0.346
Lead (Pb)	(mg/L)	< 0.05		ND3	ND ³	ND ³	ND ³
Calcium (Ca)	(mg/L)	50		3.09	2.69	42.2	3.69
Magnesium (Mg)	(mg/L)	< 15		1.06	0.964	0.914	0.964
Sulphate (SO4-2)	(mg/L)	< 500		5.14	4.13	4.59	3.58
Chloride (Cl-)	(mg/L)	< 250		1.91	2.30	2.49	2.59
BOD	(mg/L)	< 15		0.6	0.7	0.5	0.6
COD	(mg/L)	< 40		9.6	8.0	3.2	6.4
Total phosphorus	(mg/L)	< 0.2		0.010	ND4	0.019	0.016
Faecal Coliform	(C/100mL)	150		86	74	144	104

Table: February 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					21/02/07
Sampling Time					11.40 h
Water Depth	(m)				0.4
Sampling Method					grab
Air Temperature	(oC)				30.0
Cloud coverage				N	30
Water Temperature	(oC)			O	26.4
pH		6.0-8.0			7.1
DO	(mg/L)	> 5.0		W	8.69
% DO Saturation	(%)			A	109.3
Conductivity	(µS/cm)	< 350 or <750*		T	*
Turbidity	(NTU)	< 200		E	22.9
Total suspended solids	(mg/L)	< 40 or <80*		R	33.3
Alkalinity	(mg/L)	-11	198.2		241
Ammonia-nitrogen (NH3-N)	(mg/L)	< 0.5		S	0.038
Nitrate-nitrogen(NO3-N)	(mg/L)	< 3.4		A	0.294
Nitrite-nitrogen(NO2-N)	(mg/L)	< 0.2		M	ND2
Potassium (K)	(mg/L)	-11	0.7288	P	0.159
Sodium (Na)	(mg/L)	300		L	0.512
Manganese (Mn)	(mg/L)	< 0.5		E	0.030
Total iron (Fe)	(mg/L)	< 1.0			0.804
Lead (Pb)	(mg/L)	< 0.05			ND3
Calcium (Ca)	(mg/L)	50			55.6
Magnesium (Mg)	(mg/L)	< 15			5.31
Sulphate (SO4-2)	(mg/L)	< 500			3.76
Chloride (Cl-)	(mg/L)	< 250			0.96
BOD	(mg/L)	< 15			1.6
COD	(mg/L)	< 40			16.2
Total phosphorus	(mg/L)	< 0.2			0.016
Faecal Coliform	(C/100mL)	150			35

River- Specific Guideline	Xe Bangfai			
	SW7	SW8	SW16	SW 17
	21/02/07	21/02/07	23/02/07	23/02/07
	10.00 h	12.25 h	12.45 h	02.00 h
	0.8	2.5	1.1	1.8
	grab	grab	grab	grab
	27.3	29.0	29.2	28.8
	80	70	70	95
	27.9	28.2	29.4	28.3
	7.7	7.2	7.4	7.5
	8.17	8.38	8.10	7.98
	104.9	110.4	108.1	104.9
	*	*	*	*
	2.17	1.25	3.87	7.57
	1.7	2.1	1.5	4.5
198.2	192	192	174	186
	0.030	0.044	0.030	0.041
	ND1	ND1	ND1	ND1
	ND2	ND2	ND2	ND2
0.7288	0.570	0.546	0.510	0.551
	2.04	1.90	2.07	2.02
	0.024	0.018	0.016	0.014
	0.088	0.084	0.092	0.198
	ND3	ND3	ND3	ND3
	44.8	47.1	45.7	41.2
	3.51	3.81	4.06	4.96
	4.22	3.12	3.85	4.22
	1.15	1.53	1.15	0.96
	1.6	0.9	0.7	0.8
	11.3	39.0	ND5	14.6
	0.074	0.022	ND6	ND6
	59	21	7	12

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

Date	Location	Faecal Coliform result	WQ guideline
Ban Oudomsouk			
25/02/07	RGW1	0	0
25/02/07	RGW28	0	0
Ban Oudomsouk mai			
21/02/07	RGW2	0	0
21/02/07	RGW9	0	0
21/02/07	RGW27	0	0
School			
25/02/07	RGW3	0	0
Ban Phonephanpek			
25/02/07	RGW4	6	0
25/02/07	RGW29	0	0
Ban Nongboua			
25/02/07	RGW5	0	0
25/02/07	RGW30	0	0
25/02/07	RGW33 at Header tank	36	0
25/02/07	RGW33 after filter	12	0
Ban Bouama			
25/02/07	RGW6	0	0
25/02/07	RGW22	0	0
25/02/07	RGW23	0	0
Ban Phonsavang			
26/02/07	RGW7	0	0
26/02/07	RGW20	0	0
26/02/07	RGW21	18	0
26/02/07	RGW34	5	0
Ban Sop-on			
26/02/07	RGW8	0	0
26/02/07	RGW10	0	0
26/02/07	RGW18	0	0
26/02/07	RGW19	0	0
Ban Done			
26/02/07	RGW11	0	0
26/02/07	RGW12	0	0
26/02/07	RGW16	0	0
26/02/07	RGW17	0	0
Ban Sop Phene			
24/02/07	RGW13	0	0
24/02/07	RGW32. from Pump	0	0
Ban SopHia			
24/02/07	RGW14	7	0
24/02/07	RGW24	0	0
24/02/07	RGW25	0	0
Ban Sop-ma			
24/02/07	RGW15	5	0
24/02/07	RGW26	1	0
Ban Khone Kaen			
26/02/07	RGW31. from Pump	0	0
26/02/07	RGW from tank	0	0
26/02/07	RGW35	0	0
Sangkeo Primary School			
25/02/07	Sangkeo school	160	0
	Bottle blank	0	0
	Field blank	0	0

Table: February 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			24/02/07			22/02/07	22/02/07	22/02/07	21/02/07
Sampling Time			11.15 h			09.00 h	09.20 h	10.40 h	10.57 h
Water Depth	(m)		0.1	N	N	0.1	-	0.2	0.8
Sampling Method			grab	O	O	grab	grab	grab	grab
Air Temperature	(°C)		22.6			24.4	27.0	27.7	26.4
Water Temperature	(°C)	<40	22.8	D	D	23.2	25.7	27.4	24.5
pH		6.0 - 9.5	9.6	I	I	10.7	7.3	7.6	7.2
DO	(mg/L)		7.96	S	S	7.88	7.21	8.34	5.61
% DO Saturation	(%)		97.4	C	C	95.9	89.8	106.1	68.4
Conductivity	(µS/cm)	<3500	*	H	H	*	*	*	*
Turbidity	(NTU)		26.6	A	A	14.9	4.28	32.5	1.70
Total suspended solids	(mg/L)	<40	38.7	R	R	3.6	3.4	96.7	1.6
Ammonia-nitrogen(NH ₃ -N)	(mg/L)	<4	0.116	G	G	0.052	0.204	0.040	0.056
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	<30	0.331	E	E	0.189	ND ¹	ND ¹	0.606
Aluminium (Al)	(mg/L)	<2.	1.01			0.560	ND ²	1.01	0.030
Manganese (Mn)	(mg/L)	<1	0.034			ND ³	0.024	0.042	ND ³
Total iron (Fe)	(mg/L)	<2	1.36			0.256	0.130	1.29	0.247
Lead (Pb)	(mg/L)	<0.2	ND ⁴			ND ⁴	ND ⁴	ND ⁴	ND ⁴
Zinc (Zn)	(mg/L)	<1	0.012			0.023	0.020	0.214	0.033
Sulphate (SO ₄ ⁻²)	(mg/L)	<1000	14.8			42.9	168	16.7	4.04
Oil and Grease	(mg/L)	<5	ND ⁵			ND ⁵	ND ⁵	ND ⁵	ND ⁵
COD	(mg/L)	<130	14.5			22.7	17.8	11.3	13.0
Total phosphorus	(mg/L)	<10	0.016			0.056	0.013	0.010	0.019

* Faulty meter

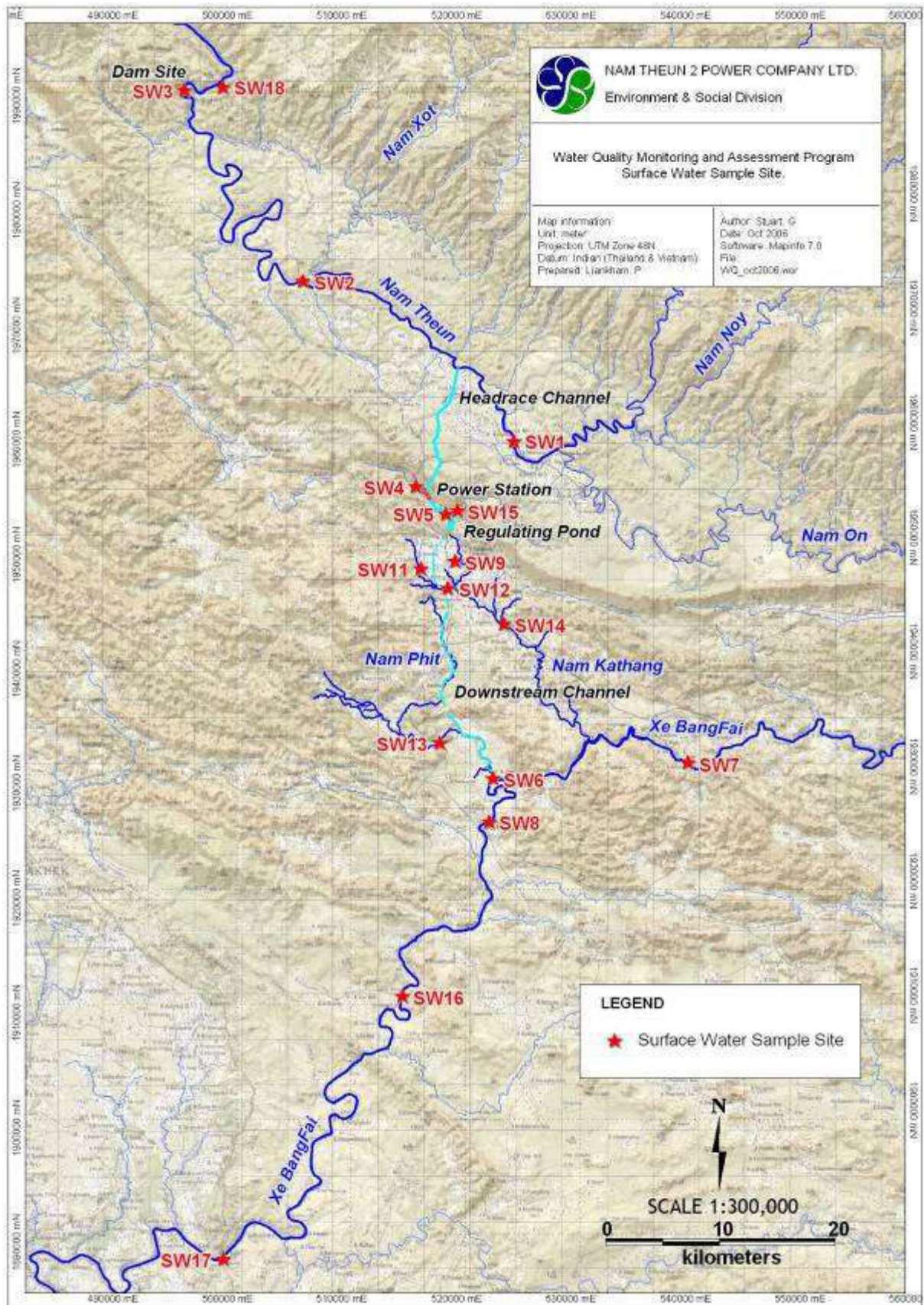
¹ Non-detectable (Detection limit = 0.001 mg/L)² Non-detectable (Detection limit = 0.005 mg/L)³ Non-detectable (Detection limit = 0.006 mg/L)⁴ Non-detectable (Detection limit = 0.010 mg/L)⁵ Non-detectable (Detection limit = 1.0 mg/L)

Table: February 2007 Construction Camp Discharge

Parameter	Unit	Project Guideline	Dam Site Camp			Ban Oudomsouk Camp	Platform No.1 Camp	RNT
			CAMP 1	CAMP 2	CAMP 3	CAMP 4	CAMP 5	CAMP 6
Sampling Date			24/02/07	24/02/07	24/02/07	25/02/07	23/02/07	23/02/07
Sampling Time			10.50 h	10.28 h	10.13 h	09.57 h	09.30 h	10.15 h
Water Depth	(m)		0.1	0.1	0.1	0.2	0.1	0.1
Sampling Method			grab	grab	grab	grab	grab	grab
Air Temperature	(°C)		22.3	21.8	22.5	23.6	-	28.2
Water Temperature	(°C)	<40	23.4	23.6	23.7	23.1	26.3	28.5
pH		6.0-9.5	7.3	7.3	6.3	6.7	7.7	7.3
DO	(mg/L)		3.52	5.24	0.13	0.75	5.31	4.10
% DO Saturation	(%)		44.1	65.4	1.1	10.9	66.1	54.7
Conductivity	(µS/cm)	<3500	*	*	*	*	*	*
Turbidity	(NTU)		129	44.5	222	93.4	18.5	10.17
Total suspended solids	(mg/L)	<40/30 ³	111	43.9	206	52.7	33.0	93.0
Ammonia-nitrogen (NH ₃ -N)	(mg/L)	<4	2.23	0.434	0.700	9.30	0.828	0.038
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	<30	0.018	0.405	0.046	0.018	0.029	50.8
Aluminium (Al)	(mg/L)	<2	1.36	0.660	0.170	1.42	0.230	0.560
Manganese (Mn)	(mg/L)	<1	0.054	0.024	0.263	0.144	0.050	0.038
Total iron (Fe)	(mg/L)	<2	1.97	1.03	0.298	1.18	0.242	0.866
Lead (Pb)	(mg/L)	<0.2	0.014	0.014	ND ¹	ND ¹	ND ¹	ND ¹
Zinc (Zn)	(mg/L)	<1	0.050	0.030	0.168	0.078	0.084	0.132
Sulphate (SO ₄ ²⁻)	(mg/L)	<1000	40.4	19.5	10.5	27.4	364	47.6
Oil and Grease	(mg/L)	<5	5.1	ND ²	12.1	ND ²	2.6	ND ²
COD	(mg/L)	<130	134	66.0	739	86.7	88.5	74.0
Total phosphorus	(mg/L)	<10	4.33	2.11	16.1	1.26	1.42	8.52
Fecal coliform	(CFU/100mL)	<1000	1,639	1,598	1,852	1,695	1,498	1,545

* Faulty meter

¹ Non-detectable (Detection limit = 0.010 mg/L)² Non-detectable (Detection limit = 1.0 mg/L)³ Guideline for RNT WWTW



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

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

- Submission of the third Quarterly Progress Report which is under NTPC review.
- 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.
March 2007	
03	Review the NTPC survey results of present biomass in the inundation area and the proposed means for maximizing biomass removal.
03	Assist in the development of a GOL strategy for lesser value biomass removal.
03	Organize meeting with SLC to discuss the issues presented in the Salvage Logging Monitoring Reports.
11	Prepare a letter to NTPC requesting the report, 'Cross Sections Survey – Xe Bangfai and Nam Kathang'.
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.
33	Follow up on request for the NTPC to rapidly implement options to control dust on road corridors, particularly in the vicinity of villages.
36	Follow-up request for NTPC to provide a routine report on progress of landscaping and revegetation activities
37	Follow-up request for NTPC to develop enforcement mechanisms for vehicle speed limits

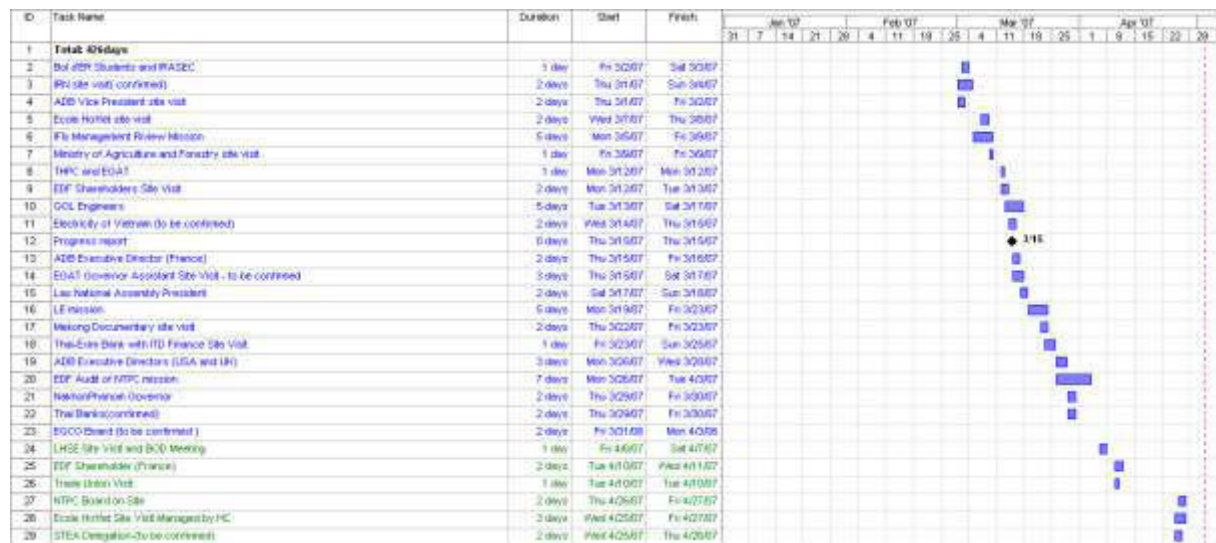
3.5 EMO's activities linked to construction

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 expert 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

Proposed NT2 Reservoir Nakai Plateau Village Relocation Routes





Nam Theun 2 Power Company Ltd.

Nam Theun 2 Hydro-Electric Project

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

Part C : Environmental & Social Report

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General Overview

1 General Overview

Project lands:

- Implementation of 2007 Livelihood Restoration Activities started in preparation for coming wet season.
- Construction of 20 replacement wooden houses is ongoing in Gnommalat. 4 additional replacement houses and one replacement primary school in Ban Phonekhaen commenced in Variation Order #1 to the main house construction contract C817.
- RMU invoice #5 prepared, to be initiated pending acceptance of request.
- Bore hole drilling campaign awaiting arrival of drill rig, currently being repaired in Champasak. UXO clearance of proposed borehole locations substantially complete.

Public Health:

Following major activities were undertaken during April 2007:

- New GMLT District Hospital and two Health Centers (Khedphit and Naxok) were formally opened by Vice Governor Khammouane Province on 3 April 2007.
- Rehabilitation of Mahaxai District Health Office is ongoing.
- 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 for Naxok and Khedphit is in advanced stages of completion.
- Number of training courses held during the month:
 - Peer educator training on STIs prevention among High School students in Nakai on 5-8/04/2007
 - One-day training on the use of various medical equipment by suppliers of the equipment, including X-ray, ultrasound, centrifuge, autoclave in 5 hospitals 2-5 April 2007.
 - Training on Emergency Obstetric Care in Xaibouathong and Boualapha Districts, Khammouane Province 23-28 April 2007.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) is being analyzed for the preparation of a comprehensive report on Village Group I (VG1).
- Introduction and consultation meeting with Sop Hia villager leaders for health checks on 12 April 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 313 clinics in 69 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
- Visits to Souy Lake (artificial lake for irrigation) to study long term effects on villagers on 21-22 April 2007.

Nakai Plateau resettlement

Infrastructure :

- Topographic survey and mapping: The ongoing setting out of house and agricultural plots by Resettlement Office personnel is the only activity.

- UXO search and clearance: The on-going contract for UXO community awareness and on-call roving response team is still proving successful. In April, 18 UXO items were destroyed. By the end of April the roving units have disposed of 2,010 items including 1,807 bomblets.
- Timber houses: Apart from Oudomsouk Nakai Reservoir PAPs, all the resettlement village house contracts have been signed. The expected increase in supply because of the four contracts signed in March with various sawmills for the supply of a total of 3,503 m³ has not yet taken effect. The sourcing of the unsecured sawn timber is an ongoing activity. Good progress was made with the houses at Area 8 and 8a.
- Roads and tracks: There are four road construction contracts underway. The two contracts for the three southern VG1 road and tracks and the Southern Resettlement Road were completed. A completion inspection was made for the contract for the four northern resettlement village access roads and tracks but it was found that there were still some works to be finished off. The two southern VG2 village contract is about 49 % complete. Works have started at Area 7 and Area 13 agricultural area access roads. Construction of the Oudomsouk Urban Area access roads is underway via variation orders to the Southern Resettlement Road contract. A contract was signed for the roads in Areas 1 and 2.
- Irrigation: The construction of the irrigation area extension at the Pilot Village for the Keng Gnao is nearly complete. The system was tested and some minor leakages observed which are being rectified by the Contractor. The bore holes at the pilot groundwater irrigation area at Sop On were completed and yield testing underway. The pipeline designs will be further reviewed once the yields are known.
- Villages Layout: The preparation of preliminary resettlement village and agricultural layouts for the VG2 villages is continuing by NTPC personnel in consultation with villagers.
- Community Buildings: Four contracts were signed for the construction of 36 community buildings in ten resettlement areas.
- Domestic Water Supply and Sanitation: A total of 149 deep boreholes have been successfully completed out of 173 drilled since the beginning of the operations in December 2005. The total number of failures is now 24 for a global rate of about 13.87%. 200 hand pumps ordered from UNICEF have finally been delivered and 34 sets were installed.
- Electricity: The design of the resettlement village electrification systems is continuing. Bid procedures for the electrification of three villages are underway and a small contract was signed for the construction of 3 genset shelters.

Livelihood Plans:

Forestry:

- Total volume timber delivery in April to contractors: 103,193 m³
- VFA Board held on 26 April 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:

- April has long Pimai holidays, so less activity can be described for the month. Census and consultations with resettlers who have to be relocated temporary due to impact from main dam construction have been done. Actual relocation for Thalang has been completed, Nakai Tai and Nakai Neua are ongoing.

- Now all resettlers from Nongbouakham have been moved to their selected new village (Area 9). Sop Hia still subject to final consultation by an independent consultation Team supported by World Bank and GoL.
- Oudomsouk resettlers impacted by the reservoir Assets survey has started and expected to be completed by the end of May 2007. This is the phase 1 survey.
- Other CD off-farm activities have been proved to be effective with more and more incomes for the resettlers, but a lot more resettlers still to be supported and join the program according to their potentials and wish. Study tours and training were organized for both the leaders and members, so as sustainable off-farm network can be realized.
- Resettlers' Incomes derived from participating with project activities (in cash) were partly encouraged to be put in BCEL Khammouane branch.
- Education support is ongoing with more villages being supported.
- Rice and protein supports are ongoing. Resettlers are happy with the support and ready to co-operate and participate in all livelihood activities to get sufficient incomes to procure their own rice and protein in the end.
- Vulnerable households identified and consulted for supports earlier, were supported with basic needs such as cloth, food and suitable income generating activities and school for their children.

Downstream Program:

- Sanitation awareness training continued in pilot villages
- Jatropha nurseries development continued in two pilot villages
- Procurement of sanitation facility materials continued for four villages, and begun in another 5
- Design of a mini-polder scheme in the lower Xe Bangfai region continued
- Village fund training courses were conducted.
- Brochures to disseminate information on pig raising techniques were produced.
- Fish catch monitoring continued.

Environment:

- Field activities to re-survey some sites for the fish and aquatic habitats baseline.
- Ongoing baseline wildlife survey and wildlife management and monitoring planning activities. Submission of the Progress Report
- Ongoing Interim Human Elephant Conflict (HEC) Monitoring and continued contractual activities for Elephant Program Phase II
- Commencement of construction activities, and continued survey activities, for the interim wetlands which is a management measure for the wildlife management and monitoring program
- Submission and review of the Main Environmental Education Issue Report for the environmental education component of the Transitional Strategy.
- Development of the wildlife rescue plan and continued procurement activities for the patrolling boat under the Transitional Strategy.
- Water Quality sampling and analysis.

Monitoring:

EDF Shareholders (France) (10th and 11th)

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

NTPC E&SD Staffing

Legend:

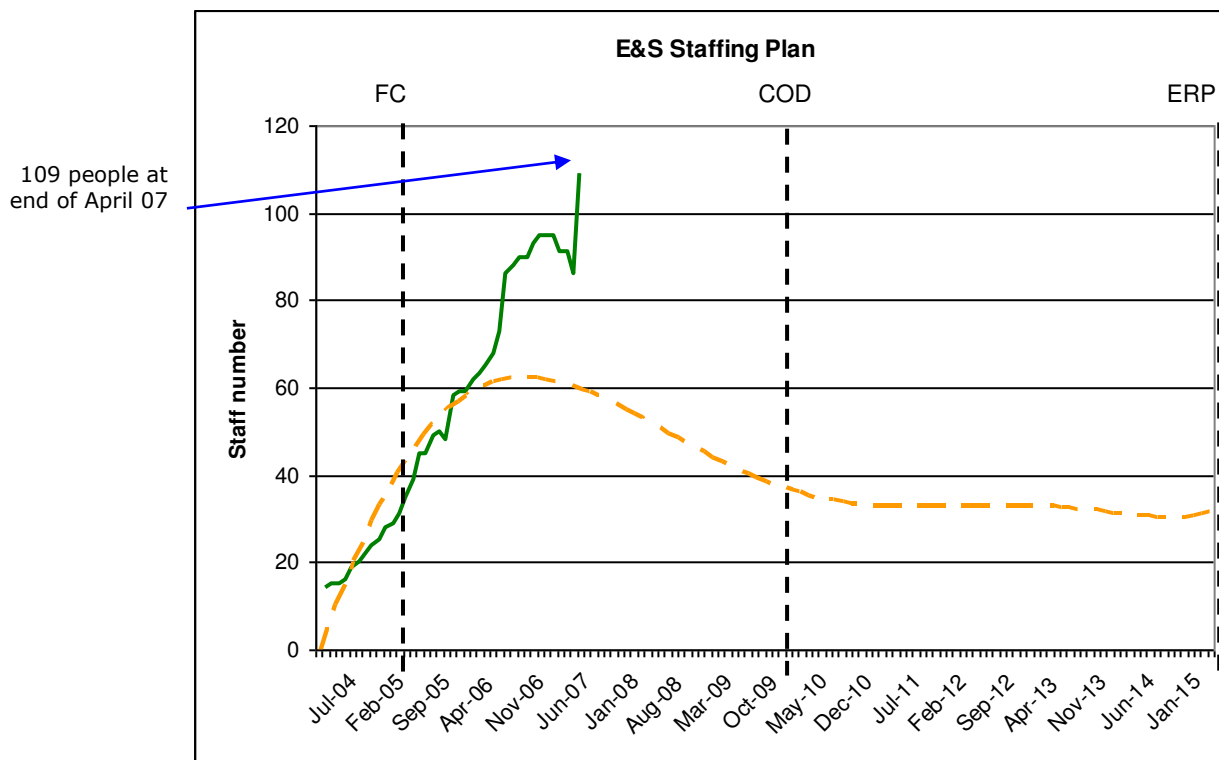
Scheduled staffing plan

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 local staffs moved to other division during of this month.

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

- Procurement process of consultancy services (pre-feasibility studies: irrigation, flood management)
- Procurement process of consultancy services (reservoir impoundment)
- Procurement process of consultancy services (flood control/ irrigation manager)
- Procurement process of consultancy services (gender specialists, family finance management),
- Procurement process for the supply of electricity – low voltage,
- Procurement process and award for the construction of access roads and tracks within Area 1 (Nakai Neua) and Area 2 (Nakai Tai),
- Award and kick off meeting for the construction of resettlement villages community buildings,
- Market research for the construction of machine drilled boreholes for domestic water supply,
- Award of 4WD pick up vehicles for the DWS Team,
- Meeting with GOL to finalize terms of reference for the IMA-Environment,
- Contract follow up – medical equipment delivery,
- NTSEP quarterly report,
- Preparation of the documents for advertisements of the results of previous procurements.

1.7 Monitoring:

No change from previous report.

1.8 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 April 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				~ 85
		Cumulative at end of the month	90				30
		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 June 2007				On time with the TL construction schedule, no issue
	Water supply Boreholes + shallow wells	Total number to be drilled		80			
		Cumulative at end of the month		16			
		Progress during the month		0			
		comments		remaining boreholes scheduled to be completed by July 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	372		
			Interim compensation paid in 07	~ 410		
		livelihood restoration	number of hh entitled for livelihood restoration	417		
			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 April:

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 April 2007.

Compensation

A summary of compensation payments which have been requested (RMU#5) during the month of April 2007 are displayed in the following table:

RMU Payments Invoice #5

No	Req. No.	LPA #	LPA	No. PAPs	Description	Amount Required (kip)	Amount on Req. (kip)
1	4349	38b	DS channel	1	Business Disturbance	40,000,000	60,000,000
2	4346	34	Reg. pond	2	Interim production 1-year PAP >10%	559,000	559,000
3	4346	35	Reg. dam	1	Interim production 1-year PAP >10%	1,500,000	1,500,000
4	4346	36	RNT	1	Interim production 1-year PAP >10%	5,150,000	5,150,000
5	4346	40	HC Camp	1	Interim production 1-year PAP >10%	2,705,000	2,705,000
6	4346	42	PPT Quarry	7	Interim production 1-year PAP >10%	24,681,500	24,681,500
7	4687	18	Saddle dam 12B	7	Final Compensation Housing land	19,899,000	19,899,000
8	4687	26a	Headrace	3	Final Compensation Housing land	13,095,000	13,095,000
9	4687	26a	Headrace	15	Final Compensation Agricultural Land	157,868,500	157,868,500
10	4687	26a	Headrace	36	Final Compensation Agricultural Land	256,459,500	256,459,500
11	4479	38a	DS channel	1	Moving allowance	3,460,000	3,460,000
12	TBA	26a	Headrace	1	BPKP Sawmill grievance	57,989,000	57,989,000
13	4735	38b,c	DS channel DT6-16	20	Interim production 1-year PAP >10%	72,992,000	75,556,500
14	4735	38c	DS channel	32	Interim production 1-year PAP >10%	134,637,500	134,637,500
15	4735	38b	DS channel DT12E	8	Interim production 1-year PAP >10%	39,228,500	37,610,000
16	4721	52	115 and 500 kV trans line parallel GML District	192	Final Comp GML District PAP<10%	226,271,552	246,937,696
17	4721	52	115 and 500 kV trans line parallel GML District	167	Dist. Allowance (per HH basis)	25,050,000	25,050,000
18	4806	54	500kV TL MHX Dist.	87	Final Comp. PAP<10%	180,339,400	180,339,400
19	4806	54	500kV Trans. Line MHX District	87	Dist. Allowance (per HH basis)	13,050,000	13,050,000
20	4806	53	115kV TL MHX Dist.	13	Final Comp. PAP<10%	17,077,500	17,077,500
21	4806	53	115kV TL MHX District	13	Dist. Allowance (per HH basis)	1,800,000	1,800,000
22	4807	38b	DS channel	1	Reinstall electric connection.	14,699,000	14,699,000
23	4686	38c	DS channel	8	Final Comp. PAP<10%	331,769,000	331,769,000
24	4686	38c	DS channel DT6-16	16	Final Comp. PAP<10%	271,642,000	202,314,500
25	4686	38b	DS channel DT12E	8	Final Comp. PAP<10%	324,939,000	306,805,500
26	4289	36	RNT	4	Final Comp. PAP<10%	16,617,000	16,617,000
27	4123	RAP4	Road 12	1	House. 60% paid already, remaining 40% to pay after complete	90,200,178	225,500,444

Total Due for payment**2,343,679,130****Amount remaining from Invoice #4****242,562,485****Transfer to RMU for invoice #5****2,101,116,645**

Financial training for PAPs receiving cash compensation is ongoing to ensure that PAPs possess knowledge regarding effective management of the compensation money they receive.

2.1.2.1 Infrastructure

RAP 2 - Oudomsouk

Electrical connections to 5 replacement houses in Oudomsouk were completed on April 7th 2007.

A survey was implemented to determine the requirement of culverts to be installed for each house to ensure continued access during the rainy season. Requisition will be made in early May.

RAP3 – Gnommalat

Construction of 20 replacement houses under C817 is ongoing. Additional work involving site clearance, 4 additional houses and one 6-room school has been arranged under Variation Order #1 for C817. UXO clearance was completed by April 30 and the construction contractor was provided with access to the site on April 30th.

6 community boreholes await installation of hand pumps (currently in storage in the warehouse in Nakai). Installation will commence first week of May. 63 additional borehole locations (which replace the previously reported C971 for dug well construction) have been identified with consensus from villages, DWG and RMU in progress. These boreholes are being installed as compensation for disrupted water supply caused by the construction activities near these villages. Drilling will commence as soon as drill rig repairs (being done in Champasak) are complete, under contracts C675 and C1012 (expected date of redeployment May 3rd). One drill rig will be dedicated to Project Lands needs, so a significant proportion of the boreholes will be completed before the onset of the wet season, after which access can become marginal in many locations. All new boreholes will be equipped with hand pumps after drilling is complete.

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RAP5 – Transmission Lines

The Phone Khaen school, impacted by the 500kV line at T15/1, is included in C817 VO1 (see above).

Additional obstacles to be removed in the TL corridor have been identified:

Section 1 and 2 (phase 2 relocation in May 07) – 1 bamboo hut, 8 rice field huts and 1 rice store. Cost of removing and replacing these private structures will be calculated and approved by DWGs for inclusion in RMU invoice #6.

Sections 8,11,15,17,19 (phase 3 relocation in Oct 07) – 11 bamboo houses, 10 wooden houses, 7 rice stores, 6 Animal pens, 3 rice field huts, 1 brick house, 1 restaurant, 2 shops.

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 some sites cleared in April already. 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:

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 Jatropa 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 Jatropa 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 Jatropa 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 (Orchidees) 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: 44 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. The strategy for this livelihood will be revised and is expected to be finalized in early May.

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 collection 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 April 2007



Rice training in Thasano center



Rice production training in Gnommalat Tai, implemented by the trainers from Thasano.



The new livelihood restoration coordinator, consulting with PAPs.



Sun drying chillies at Kengsavang Village

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	17	
4	Khamkeut	22	10	45.5%
	Total	81	66	

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	114	
3	Nakai	20	8	0	
4	Khamkeut	22			Nam Papa system
	Total	81	33	114	

3. Khammouane Provincial Water Supply produces chlorine as required by the districts - ongoing

Social Activities

Health Programs

2.2 Public Health Regional and Resettlement Programs

Following major activities were undertaken during April 2007:

- New GMLT District Hospital and two Health Centers (Khedphit and Naxok) were formally opened by Vice Governor Khammouane Province on 3 April 2007.
- 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 for Naxok and Khedphit is in advanced stages of completion.
- Number of training courses held during the month:
 - Peer educator training on STIs prevention among High School students in Nakai on 5-8/04/2007
 - One-day training on the use of various medical equipment by suppliers of the equipment, including X-ray, ultrasound, centrifuge, autoclave in 5 hospitals 2-5 April 2007.
 - Training on Emergency Obstetric Care in Xaibouathong and Boualapha Districts, Khammouane Province 23-28 April 2007.
- Data from eight villages (Nongboua, Sop On, Bouama, Phonsavang, SopMa, Khone Kaen, Done and Ka Oy (who moved to Sop On)) is being analyzed for the preparation of a comprehensive report on Village Group I (VG1)..
- Introduction and consultation meeting with Sop Hia villager leaders for health checks on 12 April 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 313 clinics in 69 villages
- Routine monthly meetings were held in Mahaxai, Khamkeut and Nakai District
- 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
- Visits to Souy Lake (artificial lake for irrigation) to study long term effects on villagers on 21-22 April 2007.

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	Awaiting 1 water pump for completion	Work completed at 97%
	Provision of medical equipment	X ray machines, biochemistry and lab. Equipment, hematology unit, etc....	All equipment provided, but some training by suppliers still pending	95%
	Provision of vehicles	4 ambulances 12 motorbikes 4 4WD pick-ups	-	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.	-	70% 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 in MHX Health education sessions in KK Feedback meetings on the survey results in Nakai	173 sessions 32 504 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 training of the traditional practitioners	
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	313 Monthly MCH Clinics in 69 villages
	Training	Community level (villages)	Ongoing	43 sessions 832 participants
		Health Centers (village – District and Provincial levels)		22 sessions 264 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	22 sessions 178 participants

Activity	Description	Extent of work	Progress during the month	Progress at end of the reporting period
	Meetings	Create Outbreak Detection and Response Preparedness Unit	Ongoing	100% - includes Avian influenza
		Meetings at provincial and district levels	Ongoing	105 meetings 1 656 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	Complete in Village Group I: Nong Boua Sop On Boua Ma Phonsavang Sop Ma Khone Khen Done Ka Oy
		Monthly MCH clinics	Ongoing	313 Monthly MCH clinics in 69 villages
Equity fund		Payment of treatment for entitled PAPs	As and when required	25 individual referred to TTK hospital and financially supported



Emergency Obstetric Care Training



One-day training on the use of various medical equipment by suppliers of the equipment, including X-ray, ultrasound, centrifuge, autoclave



Opening ceremony of new GMLT District Hospital



Group discussions with service women peer educator on the sexually transmitted infections (STIs) issues in GMLT, including condom promotion

Social Activities

Nakai Plateau Resettlement

2.3 Nakai Plateau Resettlement

2.3.1 General

April was another month of consolidation of the villages in transition – the eight villages that were established prior to and during the previous wet season. Access roads to all the villages were maintained in good condition for work to proceed smoothly

Various progresses was made with resettlement area access roads. Two of the road contracts were completed. A contract was signed for the access roads in Areas 1 and 2, however the many of the roads in these two contracts were cleared by the previously hired earthmoving equipment and the late signing of this contract will not hold up house construction.

Villagers from Nong Boua Kham, Sop Hia and Nam Nian have prepared their housing plots at Area 9 and Area 7 and the construction of temporary houses (on their permanent plots) and community facilities. These villagers started their move to transition resettlement in March 2007, with the move to transition completed during April.



Transition Resettlers from Hia and Nam celebrate the Lao New Year at Area. Delivery of concrete columns for permanent housing commenced.

As reported in the previous two monthly reports, the following measures have been implemented in order to improve and expedite the supply of sawn timber for houses:

- Better cooperation from housing contractors
- Re-design of houses to accommodate timber already delivered as much as possible
- Better quality control at saw mills through more coordinated supervision
- Better communication with and cooperation from villagers regarding acceptance of timber
- Efforts to further develop VFA operations to be able to do some re-processing

These efforts continued throughout April and good progress was made in house construction at several villages, especially at Area 8 and 8a. Many houses are now nearing completion at Boua Ma, Phonsavang and Sop On. Apart from Oudomsouk Nakai reservoir PAPs, all house contracts have been signed and notice to proceed for all the signed contracts not made to date, will be made 2 May 2007.



Permanent houses nearing completion at Phonsavang.

Rice and protein distribution programmes as described in previous reports is continuing, as are bi-weekly health checks. Consultations with transition villagers were commenced in January 2007 in order to jointly agree on an appropriate plan for ramping down of transition support as villagers settle in and livelihood opportunities are provided. It has been agreed by the RC that although rice support will continue throughout the foreseeable future, protein support will discontinue as villagers income opportunities increase.

Efforts continue to be focused on clearing of agricultural plots (0.66 Ha plots) in time for villagers to make use of these plots during the upcoming wet season. Before access to the plots can be granted to the resettlers for preparation, the following steps need to be completed:

- VFA to remove hardwood (done in all areas except some agricultural areas near Thalang which are not yet accessible)
- DAFO to remove other commercially viable timber (now nearing completion)
- Remaining large trees to be cut into small pieces for villagers to handle, with a certain number of trees remaining, according to the requirements of the agricultural program. (this is being done by Army contractors in Sop Phene and Nong Boua Kham, and by the villagers themselves in the other areas.

Consultations with the remaining 18 Vietic (Ahoi) families in old Sop Hia are on-going, and it has been decided that another round of independent consultations with these families will be conducted in May. The purpose of these consultations will be to:

- ensure that these households have been fully informed of the choices available to them (which consist of Area 7 within the Nakai Plateau and several other alternatives identified as acceptable by GOL)
- ensure that all the households understand the extent of support and benefits that they will receive according to the respective options available to them.
- Ensure that the households make an informed choice of their own volition.

An independent consultant has been identified and the consultations have been scheduled to take place in May 2007. This was originally scheduled for April – however, the necessity to carefully formulate the Terms of Reference for the consultations, together with the Lao New Year period, has resulted in the consultations being postponed until early May.

In the meantime, the 18 Vietic households remaining at Sop Hia have been placed on food support, and monitoring of health continues to be conducted by District staff. Arrangements are in place to move these households uphill, at their existing location, prior to the 2007 wet season, should a decision on final location not be agreed in the short term.

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.

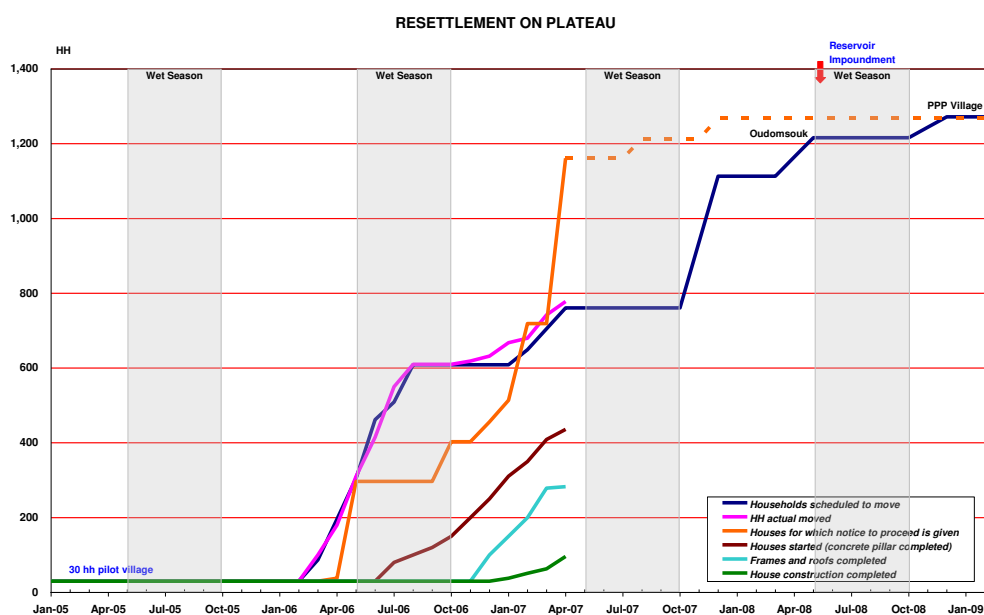
The chart presented on the following page shows progress of the respective tasks associated with resettlement of the Plateau villages.

				Transition																															
				Topo survey	Village layout design (Housing)	Village layout design (Agric.)	up Hill relocatio n	Access track	UXO temp area	Logging temp housig area	drill wells, hand pumps	Tempora ry Schools	Temp. toilets	Building Temp. houses	Commence ment of Transition Resettlemen t	Transition Support - food, health, household goods	Target Date - full transition	UXO whole areas	Logging whole area	Road Construc tion	Stump Removal	Clear housing area	Start House Building	Dismantl e house and transport	Water Supply	Electricit y	Communi ty Buildings	Agric land preparati on	Other non-farm activities	Irrigation	Target Date - Permane nt Houses Comple				
New area code	new area	village to move in this area	hh # (2006)																																
N1	8	Ban Hat Khamphane	22				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07			
N1	8	Ban Sop Ma	23				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07			
N1	8	Ban Keng Gnao	21				NR										T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07			
N2	16	Ban Keng Gnao	8				NR	NR		NR		NR					T2/06		NR									Jun-07			May-07				
N3	19	Ban Sop On	104				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07			
N3	19	Ka Oy	30				NR										T2/07							May-08			Dec-07	Jun-07	Oct-07		Dec-07	T2/08			
N4	21	Ban Done	142				NR										T3/06										Jun-08	Jan-08			Nov-08	T4/07			
N5	22	Ban Khone Khen	52				NR										T3/06										Jun-08	Jan-08			Nov-08	T4/07			
N6	11	Ban Sop Phene	56				NR										T2/06										Dec-07	Jun-07			Dec-07	T4/07			
N7	17	Bouama	74				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07			
N8	18	Ban Phonsavang	41				NR										T2/06										Dec-07	Jun-07			Dec-07	T2/07			
N15	7	Ban Sop Hia	37														T2/07										Dec-07	Jan-08	Oct-07		Dec-07	T2/08			
N9	8a	Ban Sop Hia (first group)	30														T2/06										Dec-07	Jun-07			Dec-07	T3/07			
N3	8a	Ban Nam Nian (first group)	6														T2/06										Dec-07	Jun-07	Jan-07		Dec-07	T3/07			
N10	9	Ban Nong Boua Kham	57				NR										T2/07										Dec-07	Jun-07	Oct-07		Dec-07	T1/08			
N11	13	Ban Thalang	73									NA					T1/08							Jun-07	Oct-07		May-08	Nov-08	Dec-07		Nov-08	T1/08			
N12	1	Ban Nakai Neua	89				May-07				Oct-07	Oct-07	Oct-07	Oct-07	Nov-07	Nov-07	T1/08			Oct-07	Oct-07	Oct-07	Nov-07	Mar-08	Oct-07	May-08	Nov-08	Dec-07		Nov-08	T1/08				
N15	7	Ban Nam Nian	25				NR										T2/07										Dec-07	Jan-08	Oct-07		Nov-07	T2/08			
N13	2	Ban Nakai Tai	190				May-07				Oct-07	Oct-07	Oct-07	Oct-07	Nov-07	Nov-07	T1/08			Oct-07	Oct-07	Oct-07	Nov-07	Mar-08	Oct-07	May-08	Nov-08	Dec-07		Nov-08	T1/08				
N4	21	Ka Oy	3				NR										T2/07							Nov-07			Jun-08	Jan-08	Apr-07	Apr-07	Nov-08	T4 / 07.			
		NR	Not Relevant	P				In procurement				C	Contract signed, mobilization phase				Implementation - On going				Task completed														

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	159	1290
	Houses to be constructed	674	487	159	1320
	Target date (transitional)	Jan-00	Jan-00	Jan-00	0
	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	94%	52%	50%	56%
	% village road	79%	19%	30%	33%
Wood - Timber	m3 Total required (frames,floors,walls)	8390	6164	2059	16613
	m3 required frames	4924	3587	1202	9713
	m3 required floors ONLY PLANKS 2.5 x 15, 2.5 x 20 and 3 x 20	1662	1211	406	3279
	m3 required walls ONLY WALL PLANKS 1.5 x 20	1804	1366	451	3620
	m3 delivered Frame	2143	0	0	2143
	m3 delivered Floors	794	0	0	794
	m3 delivered Walls	267	0	0	267
	m3 delivered total	3204	0	0	3204
Houses	transitional houses built	604	17	0	621
	transitional latrines	168	30	0	198
	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)	433	3	0	436
	frames and roofs completed (number of houses)	283	0	0	283
	permanent houses completed (excluding connection to the electricity grid)	96	0	0	96
	permanent latrines completed and operational	282	0	0	282
	rainwater collector systems (1/house) completed	204	0	0	204
	permanent houses completed (including electricity)	38	0	0	38
domestic water	number of tubewells to drill and equip	107	74	16	197
	Successful wells drilled	99	9	8	116
	pumps installed	76	9	8	93



Note: 1. The curve of households schedule to move is updated on 17 January 2006, based on schedule presented to IFIs and POE in Nov 2006 and Jan 2007.

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

All the village and agricultural layouts are complete apart from Oudomsouk and those that may be required for the Sop Hia households that have still not confirmed where they want to be located to. At Oudomsouk, the data collection with regard to the number of households impacted by future Nakai Reservoir inundation is nearly complete. Once the number of households impacted is confirmed, the final layouts will be prepared.

2.3.2.3 UXO search and clearance

The contractor has 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. In April, 18 items were destroyed in 5 village areas including bomblets, mortars and rockets. To the end of April 2007, 2,010 UXO items, including 1,807 bomblets, have been found and destroyed by the response team.

2.3.2.4 Roads and drainage

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.

There are four ongoing road construction contracts and they made varying degrees of progress during the month.

Southern VG1 Access roads to and within villages:

This contract for the construction of access roads to and within the new villages of Bouama (area 17), Phonsavang (area 18) and Sop On (area 19) is now complete.

Southern Resettlement Road:

This contract the construction of the Southern Resettlement Road, 11.765 km long is also now complete.

Oudomsouk Urban Area Access Roads

The construction of access roads in Oudomsouk Urban Area B is necessary for the Oudomsouk families that will be impacted by inundation of the Nakai Reservoir. The contractor was given the construction of the road works via two Variation Orders to Contract C715. The first Variation Order was for the construction of the main access road from the existing Urban Area A, through the new Urban Area B to the new Road 8B, which is being constructed by the NT2 Head Contractor. The company has made good progress and it estimated that the works are about 90% complete.

The contractor also signed a second Variation Order for the construction of the access road network from the above road to the individual resettlers' houses. It is estimated that these works are about 40% complete.

Northern Access roads to and within villages, Contract C701:

The contractor requested an inspection for the completion of the works 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. The inspection was held on 23 April but the works could not be signed off. The Contractor is rectifying the works noted in the "punch list".

Northern Access roads to and within villages, Contract C979:

The contract for the construction of the access roads to and within Area 7 and for the Area 13 agricultural area was signed on 24 March 2007. The contractor has mobilized and commenced work in Area 13. The Area 7 housing area had been cleared by previously hired earthmoving equipment.



Area 8a housing is progressing well. Access roads and roads within village also in good condition.

Southern VG2 Access roads to and within villages:

Progress on the construction of access roads to and within the new villages of Done (area 21) and Khone Kaen (area 22) has remained slow because of earthmoving machinery breakdowns which are taking a long time to repair. The Contractor has made some progress with embankment compacted fill and pavement works at Area 21. However there is still poor progress at Area 22 because of the breakdown of the bulldozer and grader. It is estimated that the contract works are about 49% 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, Area 16 for Keng Gnao, 13 houses: 8 houses for Keng Gnao resettlers at Area 16 are complete and the other 5 are under construction. At Bouama there are 24 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 is still a problem. Without the walls, it is not possible to complete the electrical works.

C605: Area 18 for Phonsavang, 42 houses: the 42 houses are under construction (41 for resettlers) and the contract is about 75% complete. 18 houses are complete apart from electricity connection and the remaining houses are requiring wall planks.

C606: Area 19 for Sop On, 137 houses: 16 houses are complete apart from electricity connection and 105 houses are substantially complete, that is roofs are completed. The contract is about 60% complete.

C607: total 106 houses, Area 8a for Sop Hia first group, 36 houses and Sop Ma 68 houses: Included are two houses for school teachers. The works have progressed relatively well with frames and roofs completed at 17 houses at Area 8a and 8 houses at Area 8.

C608: Area 9 for Nong Boua Kham, contract 61 houses: Foundation and concrete column works are continuing. This contractor is progressing slowly and was instructed to improve performance at a recent meeting.

C609: Area 11 for Sop Phene, contract 58 houses: Foundation and concrete column work is continuing. A shortage of timber columns and beams is delaying progress with the frame construction.

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, 80 houses: Some progress with concrete foundations and columns.

C804, Area 21 for Ban Done, Hamlet No. 2, 80 houses: Some progress with concrete foundations and columns.

C805, Area 22 for Khone Khen, 58 houses: Some progress with concrete foundations and columns.

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 was given 2 April and works will start 2 May.

C1011, Area 7 for Sop Hia and Nam Nian second group, 44 houses: Some progress with concrete foundations and columns. Works progressing on one house where the Contractor is supplying timber.

The following contracts were signed in March 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 continuing to provide sawn timber from resettlement area logs. There has been a minor increase in supply in April, apart from the Lao New Year public holiday, the various Sawmills have been busy transporting the logs from the various source areas and the sawing the logs. To the end of April about 3,200 m3 have been delivered, about 20% of the total requirement. Further actions will be made in May to secure the unsecured volume of sawn timber required to complete the houses.

In order to provide storage for the sawn timber before allocation and delivery to the various house contractors, a large warehouse in Oudomsouk was rented. Rehabilitation works are progressing and the recruitment of labor and security personnel nearly finalized. Also to be stored in the warehouse will be hand pumps, gensets and fertilizer.



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

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

2.3.2.7 Domestic Water Supply and Sanitation

Boreholes with hand pumps:

One of the two drilling rigs of the Champasack Water Supply Section (the contractor) was re-mobilized after a 2 month of heavy and periodic maintenance and necessary repairs undertaken in Pakse.. The drilling activities have restarted with priority given to intervention on the Nakai plateau for the benefit of Thalang and Nongbouakham resettlers as well as the experimental irrigation scheme in Sop On block 3. The second drilling rig planned to be operational during April was not re-mobilized as the contractor faces problems with the supply of the necessary parts. It is not expected be present on the site before mid-May.

At the end of this reporting period, there is an actual total of 149 deep boreholes successfully completed out of 173 drilled since the beginning of the operations in December 2005. The total number of failures is now 24 for a global rate of about 13.87% .

The Variation Order No 1 to the contract C675 has been signed in February in order to reconcile the actual implementation status, the next finalized additional needs (addition of area 7 and adjustments of the coverage targets in each village according to resettlers population), the real actual and next expected costs as well as to provide time to install the hand pumps. This contract has been extended to 30 April 2007 but a supplementary extension of 1 month mainly to allow hand pump complete installation and address the priorities No 1 in Gnommalat under Project Lands is necessary.

200 hand pumps ordered through UNICEF Procurement Services have finally been delivered to Thanaleng Port of Entry and delivered to Nakai on 6 April for immediate installation. At the end of April, 34 sets were installed in majority in the southern villages of Ban Done and Ban Khone Kaen and the northern village of Ban Sop Phene.

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 has been signed on 9 April with starting date established on 30 April 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 nearly complete. The system was tested for leaks and some were observed. Once they have been rectified, the pipeline trenches will be backfilled and the contract completed.

The preparation of irrigated agricultural layouts is an important part of the resettlement village planning exercise. The preparation of the layout for the Area 7 extension area was completed.

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 are scheduled to take place in April. It was decided not to finalize the designs and the start bidding procedures until the results are known and an analysis made on whether the measured discharges affect the design of the pipelines.

2.3.2.9 Electricity

Between supervising various works for non-resettlement contracts, such as for public health facilities the Senior Electrical Engineer is continuing with the preparation of design, layouts and quantity estimates for the resettlement villages

The VG1 generators were delivered to the Nakai storage warehouse during the month.

The bidding procedures for the installation of the village distribution systems and house connections at Bouama, Phonsavang and Sop On is underway and it is expected that a contract will

be signed in late May. A small contract was signed for the construction of shelters for the generators to be installed at the same villages.

2.3.3 Livelihood

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

Summary table of Livelihood activities:

		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	0	0	0	0
	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)	218	65	0.0	283
	Total fences (wood + living fences) surrounding each field of 0,66 ha : target (m)	156960	114480	0	271440
	Total wood fences (lm installed)...	30720	19440	0	50160
	... including living fences (lm installed)	0	0	0	0
	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)	0	0	0.0	0
Additional permanent agriculture land : field of maximum 3 ha per hh	Size of additionnal 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	0	0	0	0
	NTPC planting/growing (none / ongoing)	0	0	0	0
	forest replanting (ha)	0	0	0	0
	VFA quarterly Board meeting (since Oct 2006)	0	0	0	0
	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)	0	0	0	0
	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
CD	landling sites	0	0	0	0
	fishing gears	0	0	0	0
	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
grievance process	Food security - kg of rice distributed	509177	12127.6	0	521304.6
	education material (% of children equipped for the current year)	0%	0%	0	0
	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

VFA Board held on 26 April 2007 (19 attendees).

2.3.3.1.1 Timber supply for resettlement

Sawn timber

Provision of timber to the supply of wood for NT2 resettlement housing construction as mentioned below:

		<i>Log from various sawmill</i>	<i>Receive (m³) from sawmill</i>	<i>Delivery (m³) to contractors</i>
1	Sawmill Lak 20			
2	Sawmill Nakai		32.150	
3	Sawmill Xio		2.504	
4	VFA Sawmill		79.593	
5	Changed			
	Total		114.247	
1	Total supplied to all contractors			2.439
2				0.664
3				1.077
4				
5				3.479
6				0.250
7	Infrastructure NTPC			91.547
8	Others			7.917
	Total			103.193
	Storage			

Total volume timber delivery in April to contractors: 103,193 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>
	4,897.944	3,290.590	1,607.354

2.3.3.1.2 Furniture, handicraft manufacture

Production in April 2007:

<i>Description</i>	<i>Quantity</i>	<i>Cost/Unit (kip)</i>	<i>Amount (kip)</i>
Decoration pole5x5	30		300,000
Decoration pole10x10			
Blackboard Frame			
Room numbering panel			
Small table	1		
Door frame			
Window frame			
Window			
Panel	80		640,000
Maiphay	22		990,000
Remorque for handling Tractor (Nursery Free of Charge)	1		
Small window (Xong lom)	8		
Book shelter(for AG)	8		
(TouEkkasan)(for DAFO)	1		
For VFA(Free of charge)	2		
Hang (Khoko for DAFO)	10		
Total			1,630,000

2.3.3.1.3 Charcoal & Brick making

No change from previous report.

2.3.3.1.4 Silviculture (Plantation, Nursery, Enrichment)

Nursery

Seedling production: around 9,000 bags.

Plantation

Fence maintenance.

NTPC

No change from previous report

2.3.3.2 Nakai Plateau Agricultural and Livestock Development Program

2.3.3.2.1 Sensitization of the farmers towards sustainable farming systems

The new approach has been presented in each village of Nakai plateau.

Next meetings on land allocation in villages are scheduled. The A&L team needs to inform each family about the detailed of the new land allocation (3 ha and 5 ha).

In addition to meeting/training in the village, the farmers have been trained to implement new techniques with strong support and control of the area supervisor. During this month, the A&L staffs (extension workers, CCM technicians, chiefs of CCM and supervisors) have been trained on how to use herbicides and sowing. The objective of training was to give a technical content and to give a methodological approach (method of promotion and understanding of the new development concept). The farmers training progress in the same time as the training of the A&L staff.

2.3.3.2.2 Land Preparation and preparation of the fields

For drawdown zone (below EL 538 m):

At the moment, the A&L team favors the implementation of the permanent agriculture field, and not these seasonal fields in drawdown. We notice that 509 households have cultivated these areas with traditional techniques of slash and burnt. Their objective is to produce upland rice in this coming wet season, while waiting for their permanent land of 0.66 ha ready to be cultivated by using sustainable techniques. The total area burned is 368 ha with an average of 0.72 ha/hh. The traditional sowing will start in June. For the first year, the method of slash and burn is allowed for these specific areas. The idea is to resolve a problem of resettlement (some villages have lost their fields but are not able to move for the moment), to wean step by step the farmers have stopped their traditional techniques and to permit them to produce some upland rice to eat. For next year, objectives are to develop and to promote the cultivation of seasonal cash crop or some pasture development for additional animal fodder.

For the permanent agriculture field of 0.66 ha/hh:

The land preparation is running well in each village and is expected to finish by end of May. The villager will be encouraged to grow the cover plant for the starting of sustainable farming systems.

All the following data concerned the work completely finished:

Villages	Number of house hold	Number of fields of 0.66 ha in progress of preparation	Making the fences for the fields of 0.6 ha
Khone Kaen	52 hh	51	0
Ban Done + Ka Hoy	151 hh	113	1
Sop On	141 hh	136	132
Phonsavang	44 hh	43	40
Boua Ma	74 hh	74	36
Nong Boua + Keng Gnao	43 hh	38	38
Nakai Neua	89 hh	86	49
Nakai Tai	201 hh	172	64
Area 7 + Nam Nian	41 hh	10	0
Sop Ma	74 hh	69	16
Sop Hia	36 hh	38	30
Nong Boua Kham	58 hh	58 (by army)	0
Sop Phene	56 hh	By army	0
Thalang	79 hh	0	0

There are two types of land preparation:

- by DAFO
- by farmers.

By end of February 2007, DAFO directed responsibilities to NTPC (A&L team) to manage the first step of preparation of the fields (cut the big trees) because they couldn't do it on time. NTPC has decided that farmers cut their old trees instead to hiring private company. The objectives are to give them an income and to secure their preparation of the field (respect of the timing). Three villages preferred to hire private company. After several quotations, NTPC has chosen one of the company which named the army (battalion of Thakhek) to make the work. Now, the land preparation of Nong Boua Kham village is totally completed. The army is continuing in Sop Phene village and will continue in Thalang village.

The DAFO preparation logs are still stored inside the 0.6 ha fields (Nakai Tai, Nakai Neua, Khone Kaen, Ban Done, Sop Ma, Sop Hia). These logs are the property of private companies under contract with the DAFO.

It is necessary to speed up the land preparation for some villages which has to be finished by end of May. The setting up agriculture plot of 0.66 ha/hh is done by infrastructure team (allocation of each field to a family). In few villages, this work has just finished. Now there remaining only one village (Thalang).

2.3.3.2.3 The land allocation

The land allocation staff is part of the A&L team, managed by the A&L direction team. The A&L team works in collaboration with VFA, DWGs and RMU to set up the new land allocation for the additional agriculture land of 3ha/hh and 5 ha/hh as common land. This mapping of the land allocation is already finished for the 0.66 ha but not for the fields of 3 ha nor for the common pasture of 5 ha/family. In concerning the global mapping, we need to confirm with all parties concerned all the different choices.

To improve and speed up the work of land allocation, the A&L team has decided to recruit a second land allocation officer. Now, we need to speed up the allocation of the permanent agriculture field

of 3 ha. Three villages (Nong Boua, Sop On and Phonsavang) must start the preparation of their fields of 3 ha to can sow this current season.

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

During the month of April, the team direction has recruited 3 new staff such as: a field supervisor for northern area, Agriculture and Livestock Advisor (to assist the technical assistant) and a Database officer. In May and June, some new staff will be recruited for the following positions: extension workers (15 people), trainer (1 person), marketing and supplying advisor (1 person), land allocation officer (1 person), assistant of chief of CCM (2 people), mushroom technician (1 person) and health animal supervisor (1 person). In total it represents 22 new staff

2.3.3.2.5 Others key points

Two main points are essentials for the success of the A&L program:

- a quick land allocation to show to the farmers where are their new permanent agriculture fields,
- additional staff to speed up the promotion of the new techniques and to secure the technical support in a long term

2.3.3.3 Fisheries Reservoir Program

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

2.3.3.4 Community Development Program

Non-farm CD Activities

- Monitor tailoring funds by District Lao Women Union at the Sop on, Bouama, Phonsavang, and Nongboua which are still in actions and doing well.
- Consultation with Bouama 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: 78 households: amount 16,560,000 kip saved in BCEL.
- Wicker work: will be on study tour to Phonsytha village, Thakhek District on 5th May, one person from each village – product for sale and to explore marketing of wicker work in Thakhek market. On this time only 8 village and 10 attended are interest of that activities and will be decrease after village resettle.
- Weaving group (Sop Hia Area 8a) are ongoing.
- Tailoring activities continued to return funds and each member received more income per month. Next month will plan for tailor training at SopMa and Sop Hia area 8.

On 25-26th April Village Revolving Fund Committee (VRFC) training on role and duties of VRFC district level, 36 attendants (5 women) and all participants expressed their understanding and ready to play their role in the near future.

Rice support for Departees:

- Provision of rice for one house hold (3 people) who move to Nam Jing village, Paksan district, Bolikhamxay province (6 months = 305.6 kg).
- Provision of rice for 5 household from Sop Hia to Phonethong village, Khamkeut district, Bolikhamxay Province (28 persons = 2601.2 kg).
- Provision of rice for 22 household from Old Sop Hia village (Vietic), Khamkeut district, Bolikhamxay Province (115 persons = 1734 kg).
- Provision of Pro for 22 household from Old Sop Hia village (Vietic), Khamkeut district, Bolikhamxay Province (115 persons = fresh meat or fish 116.5 kg/per month, dry meat or dry fish 92 kg/per month).

Supports to Vulnerable households:

Hand over wear to vulnerable household as follow:

Date	Village	No. of Vulnerable	Details
9/4/07	Phonsavang village	1 family	3 pair of shoes 3 bags 1 hat
10/4/07	Nongboua village	3 families	2 pair of shoes 2 bags 1 trouser 2 shirts 1 Lao skirt 1 blanket
11/4/07	SopMa village	3 families	3 pair of shoes 3 bags 1 trouser 3 shirts 3 Lao skirt 2 umbrella 2 hats
20/4/07	Sop On village	4 families	5 pair of shoes 5 bags 2 shirts 2 Lao skirt 2 umbrella 3 hats
21/4/07	Done village	3 families	6 pair of shoes 6 bags 3 umbrella 3 hats 1 blanket

Census and temporary relocation:

100% completed for resettlers to Area 9, From Nongbouakham village (300 persons: 57 HH – 58 families).

25 households from Thalang village moved to new village location (on permanent plots), since it is not far from the existing village location. They are those impacted by main Dam construction (below 533 levels).

Nakai Tai and Nakai Neua uphill relocation for some households impacted by the main dam is ongoing and expected to be completed by the end of this month of May 2007.

Phase 1 of Oudomsouk impacted households by the reservoir assets survey has been going and carried out by DWG in association with SRO Teams. It is expected to be completed by end of the month of May 2007.

Consultations / Institutions strengthening:

Activities / Locations	Dates	Participants	Outputs/ Results
Conduct training on Management to VRC and LNFC at Village level (Ban SopMa and Ban Sophia area 8a)	5/04/07	SRO: 3 persons DWG: 1 person 12 attendant (2 women)	Generally good
Conduct training on Management to VRC and LNFC at Village level (Ban Thalang, Sop Phene and Ban Nongbouakham)	7/04/07	SRO: 3 persons DWG: 1 person 22 attendant (5 women)	Generally good
Ban Don Agriculture plots Selection Consultation	26/04/07	SRO: 3 persons DWG: 1 person 103 attendant (62 women)	All understand and agree with the Agriculture plots Selection consultation
Relocation Planning activities for Ban Thalang (family under EI 530)	21/04/07	SRO: 3 persons DWG: 1 person 25 attendant (4 women)	All understand and agree with the Relocation Planning activities consultation
Follow up Relocation Planning activities for Ban Thalang (family under EI 530)	21-30/04/07	SRO: 1 person DWG: 1 person	20 families moved to temporary houses



Ban Thalang Resettlers moved to temporary houses



Ban Don Agriculture plots selection consultation

Social Activities

Downstream Areas

2.4 Downstream Areas Development Plans

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 2013 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	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 2007 WS
Flood gates rehabilitation	14	7	0	0	0	0	Gates	to be coordinated with GoL program for lower XBF (under definition by GoL)
WATER supply (tube wells)	+/- 470	+/- 470	+/- 470	+/- 96	0	0	Tubes Well	all riparian villages along the XBF must have access to safe water by COD - most of villages are already partly equipped - final designs 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
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW	Program to be defined
Aquaculture	86	86	86	39	0	14	Village	
Saving and Credit	86	86	86	31	0	7	Village	
Handicraft	86	86	86	31	0	7	Village	

HINTERLAND								
Total villages Hinterland : 97	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit	Comment
VDCC + Villages comitees establishment	97	59	7	7	0	6	Village	
Mini-Polders								
Flood gates rehabilitation								
Water 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	2	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	
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW	Program to be defined
Aquaculture	97	97	TBA	7	6	0	Village	Program to be defined for 2008
Saving and Credit	97	59	6	7	0	6	Village	
Handicraft	0	0	6	3	0	3		

Downstream of the dam								
Total villages DS of the dam : 38	target end 2013 (end program)	target end 2009	target end 2008	target end 2007	total achieved to date	in progress	Unit	Comment
VDCC + Villages comitees establishment	37	37	37	37	0	0	Village	Implementation scheduled post-COD
Mini-Polders								
Flood gates rehabilitation								
Water supply (tube wells)	n/a	n/a	n/a	n/a	0	0	Tubes Well	Implementation scheduled post-COD
(WA)SH program (including sanitation facilities)	n/a	n/a	n/a	n/a	0	0	Village	Implementation scheduled post-COD
Agriculture, horticulture - TA + support	n/a	n/a	n/a	n/a	0	0	Village	Implementation scheduled post-COD
Livestock - TA + support	n/a	n/a	n/a	n/a	0	0	Village	Implementation scheduled post-COD
Fisheries co-management (villages component)	38	12	6	0	0	0	Village	
Irrigation - tubewells	TBA	TBA	TBA	TBA	TBA	TBA	number of TW	Program to be defined
Aquaculture	n/a	n/a	n/a	n/a	0	0	Village	Program to be defined
Saving and Credit	38	38	38	38	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
- Jatropha nurseries development continued in two pilot villages
- Procurement of sanitation facility materials continued for four villages, and begun in another 5
- Design of a mini-polder scheme in the lower Xe Bangfai region continued
- Village fund training courses were conducted.
- Brochures to disseminate information on pig raising techniques were produced.
- 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 interviewing of candidates for additional administration/financial staff (1 position) was conducted in April 2007.

A requisition for 4 additional drivers was submitted in January 2007 and awaits approval. It is expected that the new vehicles will arrive before the end of the year to support the ever increasing level of field activity being undertaken by the Downstream Program.

The Downstream Program Flood Control / Irrigation Engineer submitted his resignation on 5 February 2007 and finished his assignment on 5 March 2007. Advertising and collection of resumes began in mid-February, interviews with four potential replacement candidates were conducted during March and the final candidate selected in early April. It is expected that the new engineer will start in early May.

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

Following the completion of VDCC training on Village Fund management and accounting training, the VDCC together with Community Organizer team conducted a crosscheck of all accounting procedures, village by village. Trainers from the VDCC participated in the checking and re-recording of information on the old accounting forms, helping the team to complete this task. Their contribution encouraged other VDCC members to get more involved with the management of village funds, leading to an increased sense of ownership and stronger commitment, particularly on collecting loan repayment for dry season crops.

The Community Organizer team audited all village accounting procedures during the month and found errors in the loan and interest records as well as in the monthly summaries. By applying this information to new monthly loan activity report and monthly source and application funds statement by VDCC it required the insertion of all cash movements from starting period up to date. The inadequate recording system used in the past, together with limited supervision by NTPC, unfortunately lead to the VDCCs developing non-complying accounting procedures, particularly in villages containing large amounts of NTPC compensation fund released to households. For example, in Beungxe and Hatkhamhieng village the team spent almost a whole week to find out the missing information of cash record.

The table below shows an example of the previous monthly report.

Village Monthly Loan Activity Report

Village: Thaphoxai		Month: April	Year: 2007
Item	No. Members/ Cases	Activities	Amount this Period (KIP)
Members Savings Deposits Received this Period	98		964,500
Loans Disbursed:	3	Trade	3,294,000
Loans Due this Period			
- Principle	1	Trade	2,100,000
Loans Due this Period			
- Interest	5	Trade	170,000
Repayments Received this Period			
- Principle	1		2,100,000
Repayments Received this Period			
- Interest	5		170,000
Loans Outstanding			
- Not Yet Due	33	Dry Season Rice Crop 26hhs and 7hhs trade	36,174,000
Loans Outstanding			
- Past Due			

Village Monthly Source and Application of Funds Statement (new data recording and presentation procedure)

Village: Thaphoxai, Reporting Period: From 10 April to Month: 10 May Year 2007

A	B	C	D	G
Type	Item	Opening Balance (KIP)	Added This Period (KIP)	Closing Balance (KIP)
SOURCE of FUNDS				
	Total Members Savings Deposits to Date	8,080,000	964,500	9,044,500
	Total from NTPC to Date	108,999,973		108,999,973
	Total Bank Interest received to Date	735,190.65		735,190.65
	Total Member Loan Interest Received to Date	1,214,500	230,000	1,444,500
	Total Registration Fees Received to Date	568,000	13,000	581,000
	Total Fish Catch Monitoring Received to Date	3,150,000		3,150,000
	Total Other Receipts to Date (open Bank A/c)	50,000		50,000
	Total			124,005,163.65
APPLICATION of FUNDS		Opening Balance	Movement This Period (+ or -)	Closing Balance
	Total Balance in VDCC Accounts at Bank	83,785,163.65		83,785,163.65
	Account # 1:			
	Account # 2:			
	Account # 3:			
	Total Cash on Hand with Group			853,000
	Total Expenses to Date	13,000	30,000	43,000
	Value of Current Loans Not Yet Repaid			36,714,000
	Members' Savings Deposits Refunded to Date	0		0
	Bad Debts Written Off to Date	0		0
	Other Applications Disbursed to Date	3,150,000		3,150,000
	Total			124,005,163.65
Total amount shown in SOURCE section MUST equal the total shown in APPLICATION. If not equal an explanation must be provided:				
.....				
.....				
.....				

Village Revolving / Saving Funds

Safes for money storage have been distributed to the pilot villages, with the exception of Hatpek village. The team also conducted on-the-job training for VDCC Cashier regarding use of the safes and agreed on the rules of managing cash in safe box. The purpose of providing money safe to each village is to improve cash management at the village level, some villages with large numbers of household participated in the monthly saving group always received at least five to ten million kip per month cash on hand. Depositing that cash into the bank account is still an uncommon practice for most villages.

A reference document was prepared and presented to all VDCC members. One set of each safe box's keys is kept at NTPC DS office and one of CD team member is in charge of this responsibility. The responsibilities for each village were identified clearly in the document: the head of the VDCC

is having one key, an accountant keeps second key set and the Cashier has copy of combination number and safe box at the house. In case the Cashier is not in the village when required to use safe box, a CD team member can act on their behalf.

During the reporting period most villagers were busy harvesting their dry season rice crops, which caused the number of members monthly saving deposit for the month of April to be reduced, on the other hand, the number of loan repayments is increasing due to the rice price increasing to almost double the price of last year 2005-2006 when rice seed was only 1,200kip per kilogram. Currently the rice grain price is 2,200-2,500kip/kg, some farmers preferring to sell their rice soon after harvest, while some will store the rice until the price rises during the rainy season. More than 50% of households in the villages with irrigation schemes received village fund for purchasing some production inputs, on average each household had taken about US 140\$/hh with the loan periods of 6 months. Table below shows the number of households borrowing village funds for dry season rice from December 2006 to June 2007.

No.	Village Name	Household Involved H/H	Total village fund Received (KIP)	Interest to be paid/6months*
1	Mahaxaitai	45	63,387,500	7,606,500
2	Povaneua	33	36,035,000	4,324,200
3	Povatai	57	71,425,500	8,571,060
4	Hatpek	10	11,000,000	660,000
5	Hatkhamhieng	113	143,500,000	17,220,000
6	Yangkham	104	196,600,000	23,592,000
7	Veunsivilai	60	89,000,000	10,680,000
8	Beungxe	15	30,600,000	3,672,000
9	Navangneua	91	148,250,000	17,790,000
10	Hatxaifong	61	74,500,000	8,940,000
11	Nonenakham	34	34,000,000	4,080,000
12	Thaphoxai	26	26,000,000	3,120,000
13	Nasang	57	57,000,000	6,840,000
	Total=	706	981,298,000	117,095,760

2.4.7 Livelihoods

General

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

Agriculture / Horticulture

Jatropha plantation activity

The Jatropha nursery in Kengpe village was completed in March, which included construction of the nursery house, and installation of a water pump. Seedling production has commenced. Twenty-three households are involved.

In Veunsananh Village, 6 households completed construction of a Jatropha nursery. The Downstream Program is providing the village with seeds, plastic bags, plastic shade material, water cans, nails, fertilizer, and other basic materials. Seed germination has already begun but the rate of germination is quite low. However, seedlings are growing well.

A one day field visit to the Jatropha nurseries in Veunsananh and Kengpe villages was organized on 11/4/07 for 40 people, from 6 other pilot villages, 3 district the participants including Jatropha group farmers, RMU, DWG.

A field trip to Nakhon Phanom, Thailand, is schedule for the month of May to visit established Jatropha production facilities.

Dry season rice and crop production

- Evaluation of dry season demonstration for sweet corn, chilli and mushrooms were completed. The results indicate that sweet corn and chillies are suitable for the sites in which they were grown. In general, farmers were dissatisfied with mushroom results.
- Field study of farmer technology learning practices in commercial vegetables production areas of Nongbok and Thakhek District was completed. Based on this study, NTPC is organizing farmer learning visits to vegetable production areas to meet with commercial farmers and discuss crop marketing operations are technically organized. The participants are also inquiring about markets and prices. Cross visits were made with farmers from Gnommalat and Mahaxai Districts to vegetable commercial areas of Nongbok and Thakhek. There were a total of 16 participants, including 10 women. The lessons learned from this field study indicate that most of the farmers are capable of acquiring new technology.
- Conducted water melon, tomatoes assessment as requested by VDCC of Beungxe and Veunsivilai villages. The results showed that 6 HH with 1.5 ha of water melon production were damaged by rain with losses of 40%.
- Preparation for demonstration of wet season vegetable production in Nongping, Pova, Mahaxai villages. The demonstration will introduce 5 technology packages (including seeds, organic fertilizer rates, planting timing, under shad, watering and spacing rates). The vegetables species will selected as following list for the wet season demonstration according to the market demand.

1. Cucumber
2. Lettuce
3. Green onion
4. Mustard
5. Coriander
6. Long bean
7. Water spinach
8. Chinese leaves
9. Spinach

Aquaculture

Downstream aquaculture activities during the reporting period included:

- Fish seed production - Demonstration households successfully sold fish seed to other villages. Results of a sample of fish seed production in nursery ponds and rice field of only three seed producers was completed, with results as follows:

No	Producer name	Village	Species produced		Remarks
			Tilapia	Common cap	
1	Mr. Peunmany	Beungxe	12,000	-	3- 5cm
2	Mr. SyPhakang	Beungxe		10,000	4- 7cm
3	Mr. Phanh	Navangneua	3,000	500	3 -5cm

- The growth of fishes that were stocked in community fishponds at Khoksavang and Khamfeuang villages were sampled, estimation of production from each pond is shown in the table below:

Species	Tilapia	Common carp	Silver carp
Khoksavang Village			
Average weight(g)	63g/head	100g/head	48g/head
Initial stocked	1,600heads	400heads	3,600heads
Estimate production	100.8kg	40kg	172.8kg
Total estimated	313.6kg		
Khamfeuang Village			
Average weight(g)	200g/head		56g/head
Initial stocked	350heads		2,500heads
Estimate production	70kg		140kg
Total estimated	210kg		

- Sampling average length of fishes that have been stocked in rice field and pond in Pova, Mahaxai, Hatkhamhieng, Yangkham, Navangneua and Hatxaifong villages have been done and the summary results are shown in the table below:

Village	Tilapia	Common Carp	Silver Barb
Pova	10-12cm	10-12cm	-
Mahaxai	10-15cm	9-12cm	-
Hatkhamhieng	9.5-12cm	8-10cm	10-12cm
Yangkham	10-14cm	9-12cm	9-12cm
Navangneua	9-12cm	8-12cm	10-13cm
Hatxaifong	9-12cm	9-10cm	12-14cm

- Consultation with Pova and Mahaxai village committee and villagers to finalize number of new fishpond to be constructed. Until now 29 households are interested to use village fund loans for digging new fishpond. Pond location was marked and the constructor waits for completion of UXO clearance.
- Fish culture activities are expanding to target villages specifically catfish culturing activity in cement tank and earth pond is practicing in Nasang, and Hatxaifong village by contribution from the household, such as labor for constructing cement tank and digging earth pond.
- Rule and regulation of fish feed machine using has developed by group fish farmer of Beungxe ,Navangneua and Pova - Mahaxai..
- New community fishponds were established in Veunsananh village; fish fries are nursing in that pond for two months then will be released
- The aquaculture consultant collaborated with state and private fish seed stations in Khammouane and Savannakhet provinces.
- A summary of HH developed fish ponds as part of the Downstream Program :

Village_Name	Riparian_Hinterland	District	Location_2	# of NTPC supported fishponds as of 1 May 2007
Navangneua	Riparian	Nongbok	Lower XBF 2	20
Mahaxaitai	Riparian	Mahaxai	Upper XBF	7
Povaneua	Riparian	Mahaxai	Upper XBF	6
Kengpe	Riparian	Xe Bangfai	Upper XBF	2
Veunsananh	Riparian	Xe Bangfai	Middle XBF	2
Hatpek	Riparian	Xe Bangfai	Middle XBF	1
Yangkham	Riparian	Xe Bangfai	Lower XBF 1	6
Nongping	Riparian	Gnommalat	Nam Gnom	5
Beungxe	Riparian	Xaibouli	Lower XBF 1	19
Nasang	Riparian	Xaibouli	Lower XBF 3	2
Phathoung	Hinterland	Gnommalat	Nam Phit / Houay Khama	3
Khoksavang	Hinterland	Gnommalat	Nam Phit / Houay Khama	1
Khamfeuung	Hinterland	Mahaxai	Upper XBF	26
Veunsivilai	Hinterland	Xaibouli	Lower XBF 1	7
Hatkhamhieng	Riparian	Xe Bangfai	Lower XBF 1	10

Livestock Activities

Downstream livestock activities during the reporting period included:

- Coordinated with community development section for pig raised in term of full payment as time and will be extended for the sow production cross-bred piglets
- Completed a field visit in connection with villagers growing forage in 3 hh of each 5 villages (Nongping, Kengpe, Navangneua, Beungxe and Beungbouathong) within 4 districts (Gnommalat, Xe Bangfai, Xaibouli and Nongbok)
- Completed preparation of pig raising booklets and forage planting leaflets for farmers and villagers who are interested to rear more animals and improve pig feed at the village level.
- Extension leaflets were prepared in Lao on each of the above techniques and some distributed to villagers.

Handicraft

During the reporting period, two handicraft / weaving trainings were held in Ban Beungbouathong from 3 April to 6 April 2007 and Nongping from 7-11 April 2007. The purpose of the training was to:

- establish weaving groups for different cotton and silk handicraft products
- provide training on natural dying techniques using local growing vegetation;
- provide information to villagers about market demand for different types of handicrafts so that products can be adjusted.
- train villagers in new silk pattern weaving design (Mat Me)
- provide knowledge to weaving and handicraft groups on investment calculation and realistic pricing of products;
- train handicraft and weaving groups to formulate their household business plans, including investment costs, market, logistics, and trade opportunities to enable use of the village fund;
- Check quality of production from previous training;

In total, 48 participants from 5 villages within 3 districts attended the training sessions. Apart from training the follow up existing weaving was also conducted in three villages Hatkhamhieng, Kengpe and Veunsivilai.

2.4.8 Infrastructure Related Activities

Water Supply / Sanitation / Hygiene (WASH)

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

- Follow up on the requisition for the procurement of sanitation & hygiene promotion materials, such as posters, books, pamphlets, and videos submitted during March.
- Participated in a gender training awareness workshop organized by the Lao Women's Union, Khammouane Province.
- Organized and conducted a monthly meeting with district counterparts from Gnommalat, Mahaxai and Xe Bangfai districts.
- Began distribution of materials to support toilet construction in four villages within three districts, targeting 347 households
- Conducted sanitation and hygiene training, with emphasis on clean water and hygiene promotion.
 - Training at three primary schools (Pova, Mahaxai, Khamfeuung), with 445 students participating, 213 female
 - Training for two villages (Khamfeuung and Kengpe), with 99 participants, 25 female.

It is expected that during the following reporting period the following activities will be undertaken:

- Work with Khammouane Province sanitation / hygiene coordinator to prepare training seminars for district counterparts and village volunteers.
- Conduct the monthly coordination meeting with district counterparts
- Follow up regarding toilet construction in 9 villages
- Conduct further sanitation awareness programs at various schools and villages
- Continue distribute materials for toilet construction in an additional 5 villages.

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

No APR activity was undertaken during the reporting period.

Irrigation activities, including Operation & Maintenance

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

Water Gate rehabilitation

No activity for water gate rehabilitation was undertaken during the reporting period.

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.

UXO Activities

Preparation of a UXO risk assessment paper for the downstream area continued. UXO clearance was undertaken in Ban Khamfeuung 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)
Vangkor	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	+	+	+	+	+	+
Nalatkhuy	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	+	+	+	+	+	+
Khamfeuag	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	+	+	+	+	+	+
Hatkhamheng	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	+	+	+	+	+	+
Hatxalifong	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 Digital Data Divide (DDD) in Vientiane where the data are entered into a database. 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.

The potential impacts from NT2 on this region may be has 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 38 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
- An additional fish catch monitor supervisor was hired for Khamkeut District on a part time based (20 days/ month) to assist with checking all the forms

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 enter into the database through the new part-time staff recruited through the RMU.

2.4.10 Photographs

Sanitation & Hygiene Promotion, Ban Pova School, April 2007



Pilot village pig production



Jatropha nursery in Veusananh Village

2.4.11 Fisheries Reservoir Program

Two consultants have been recruited to formulate the Reservoir Fisheries Management Program. Both were mobilized in early February, 2007 to Thakhek and subsequently to Nakai. During their time in Nakai, the consultants visited villages in the impoundment area, as well as the resettlement areas for consultation. Interviews and meetings have been held with organizations, agencies, as well as government organizations and NTPC divisions that will be involved in reservoir management. The consultants have demobilized and are now preparing their report, which was submitted in draft form in April. The draft report is currently being reviewed by NTPC and is expected to be available for review and approval by the Ministry of Agriculture and Forestry (MAF) by June, 2007.

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 April 07 have included the following:

- Field activities to re-survey some sites for the fish and aquatic habitats baseline.
- Ongoing baseline wildlife survey and wildlife management and monitoring planning activities. Submission of the Progress Report.
- Ongoing Interim Human Elephant Conflict (HEC) Monitoring and continued contractual activities for Elephant Program Phase II.
- Commencement of construction activities, and continued survey activities, for the interim wetlands which is a management measure for the wildlife management and monitoring program
- Submission and review of the Main Environmental Education Issue Report for the environmental education component of the Transitional Strategy.
- Development of the wildlife rescue plan and continued procurement activities for the patrolling boat 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 April 2007 include:

The consultant re-surveyed 3 sampling sites which were previously surveyed during the baseline species and habitat survey in 2006 and for which the samples were lost in transit. The survey sites were located (i) first rapid above the Theun Hinboun Head pond; (ii) first rapid downstream of the dam site; and (iii) first rapid upstream of the dam site.



Setting a block net in rapids (left) and processing fish samples for identification (right)

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

The 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 April 2007 include:

- Ongoing baseline survey and management planning activities. The Progress Report has been received by NTPC review.
- Animal rescue specialist has completed his survey and concluded that there are unlikely to be acute rescue needs in 2007. Arboreal species can move through emergent canopy and ground dwellers are already adapted to seasonal flooding. Recommended activities will likely be limited to patrolling as temporary stranded wildlife will be more vulnerable to hunting.
- A wetland ecologist and a botanist have commenced baseline survey activities. The team will provide technical assistance on the vegetation (species, location of stock, transplantation methodologies, timing, etc.) of the interim wetlands currently being constructed above Full Supply Level.
- Wildlife specialist commenced his survey activities, and obtained first sightings on the Nakai Plateau for (i) Striped-Back Weasel; and (ii) Jackal.
- Several invasive flora and fauna species, which have the potential to cause a significant problem, have been identified on the Nakai Plateau (i) *Mimosa pigra*; (ii) *Eichhornia* (water hyacinth); (iii) Ampullariidae (Golden Apple Snail); and (iv) tilapia. The wildlife management and monitoring plan will recommend management measures for dealing with these nuisance species.

Phase II

Activities in April 2007 include:

Continuation of survey activities and commencement of UXO clearing and construction activities for the interim wetlands habitat to be established above FSL to act as a buffer for impacts that inundation will have on existing wetlands on the Nakai Plateau.

Month ('07)	Interim Wetland Activities (responsible party)					
	Survey (Lao MDC & Hatfield)	Design (Lao MDC)	Approval (WMPA)	UXO Clearing (PCL)	Construction (Lao MDC & Hatfield)	Vegetation (Lao MDC & Hatfield)
March	7*	6	6			
April	4	2		3	1	
Total	10	8	6	3	1	

* one site rejected due to proximity to track



The wetland survey team



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. The draft Final Report for Phase I was submitted on 27 April 2007. 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 individuals has been estimated based on the DNA analysis. Because of delays in the DNA analysis and obtaining credible yield data for crops, the Final Report will not be finalized until May or June 2007.

NTPC is in the final stages of contract negotiations with WCS to conduct Phase II. Phase II is expected to commence in May 2007. 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 April 2007 include:

- WCS finalized the Phase I Final Report and submitted it on 27 April 2007..
- Ongoing contractual activities for Phase II.
- 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	7
Apr 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.

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

Activities during April 2007 include:

- The Wildlife Management and Monitoring Program is developing the wildlife rescue plan. Activities commenced in April 2007, and included discussions with the WMPA on formulating the animal rescue plan and guidelines for releasing rescued animals into the NPA.
- Lao MDC has conducted the pre-education survey of the target audience to act as a baseline to measure the success of the education and to identify people's understanding to help tailor the environmental syllabus. The report on the Main Environmental Education Issues has been submitted and reviewed by NTPC.
- The EMU has identified the need for GOL to be responsible for control and enforcement of wildlife protection and prevention of wildlife trade. Refer to section 3.4.



Example of presentation materials for the environmental education program to accompany lessons on wildlife consumption (left) and habitat conservation (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

NTPC and WMPA have agreed to take steps to formalize an Adaptive Management Committee for the wildlife programs in terms of committee members and frequency of meetings.

3.3 Water Quality Monitoring and Assessment Program

The EQMP 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 Project increases in 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 bi-annual basis for leachate and landfill observation wells, and 23 parameters on an annual basis for HC/CC potable water.
- 12 physiochemical parameters at 15 Resettlers and Project Lands Groundwater sampling site on a quarterly basis. 1 Bacteriological parameter at 33 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 physiochemical parameters and 1 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.
- 1 bacteriological parameter at 15 Public Health Groundwater sampling sites on a quarterly basis. These are restaurants associated with camp followers.

Field Observations - April 2007

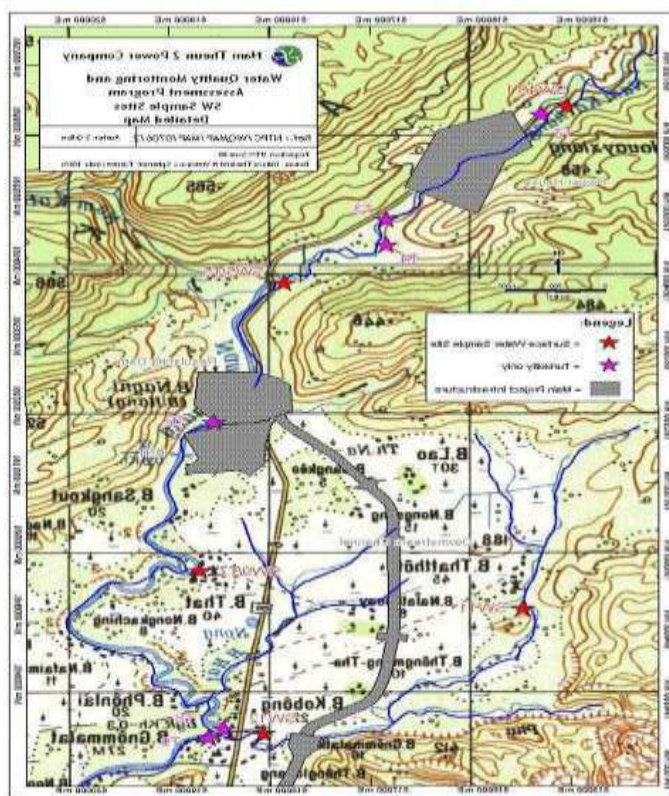
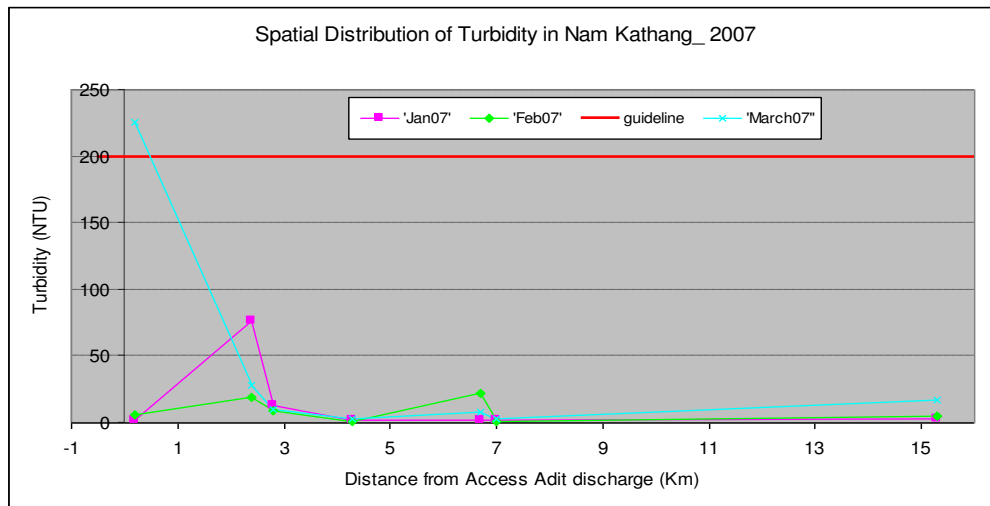
The major field observations and measurements are as follows:

- The turbidity in the upper Nam Kathang exceeds the previous²⁻ guideline, which reflects an increase in rainfall and surface runoff clear construction areas, and in particular Saddle Dam 12b.
- After an initial exceedence in the upper Nam Kathang, turbidity levels are then within the guideline from downstream of the Power House to Ban Gnommalat. The exceedence in the upper Nam Kathang is resulting from discharge from the Saddle Dam 12b.
- Discharge from Saddle Dam 12b construction site was >1,000 NTU.
- There was no discharge from the Access Adit Platform 415 sedimentation basins during sampling.
- Discharge from the Power House was 14 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 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.

¹ 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

March 2007 Water Quality Results

The laboratory results for April 2007 will be presented in the May 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.

Surface Water

Nam Theun

- The water quality in the Nam Theun continues to be considered as good with no significant exceedences of the Project Water Quality Guidelines ("Guidelines").
- Potassium exceeds the Guidelines at SW1, SW3 and SW18 but these values are not deemed to present a risk to human or environmental health, and are not deemed to be Project-related.

Nam Kathang

- No flow in the upstream control site (SW4).
- With the exception of faecal coliform, the water quality in the Nam Kathang can be considered good with few significant exceedences of the Guidelines.
- Alkalinity exceeds the Guideline downstream of the Power House (SW5) and lower Nam Kathang (SW14). The likely source is a higher proportion of groundwater, from a limestone dominated catchment, in surface water flow. Groundwater from the water conduits at the Power House may also be contributing to the elevation at SW5, however, with no flow in the upstream control (SW4) for comparison, this is difficult to confirm. 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 all sites on the Nam Kathang. It is likely that elevated potassium is being sourced from mineral solution in groundwater with a mica containing catchment. 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 coliforms exceed the Guidelines at SW9 and SW14. The effluent from the RNT WWTW 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 communities that draw their drinking water from streams should continue with the practice of boiling water prior to consumption.

Nam Gnom

- The water quality in the Nam Gnom continues to be considered as good with few significant exceedences of the Guidelines.
- Alkalinity and calcium both exceed the 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, from the limestone karsts which surround the upper Nam Gnom catchment, in surface water flow.
- Faecal coliforms exceed the Guidelines 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 water quality in the Nam Phit can be considered as good with few exceedences of the Guidelines.
- Alkalinity and calcium both exceed the 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 level is not deemed to be significant.

Xe Bangfai

- The water quality of the Xe Bangfai can be considered as good with no exceedences of the Guidelines.

- PH exceeds the Guidelines at SW8 to SW17. The source of the elevation is likely to be groundwater inputs rather than Project-related. . 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 measured pH values remained within this range and should not have any health implications.
- Alkalinity slightly exceeds the Guidelines in the upstream control (SW7) and is therefore not deemed to be either Project-related or significant for environmental or human health.

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:

Prior to sample collection, the outside of the hand pump was sterilized with ethanol to prevent contamination from the hand pump casing. Post-sterilization faecal coliform levels exceed the Guidelines and Lao standard at RGW 1, 4, 9, 12, 14, 21, and 36. For these sites, it appears that the source of the contamination is from within the groundwater. There is a further problem for RGW32 with an observed increase in faecal coliforms during storage in the header tank. 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:

- pH exceeds the upper range of the proposed² guideline for discharges at the Access Adit. The source of these exceedences is likely to be 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 Intake discharge. From an environmental health perspective, a high sediment load would have a negative effect on the primary productivity of the river with a reduction in light penetration and therefore photosynthesis. Over the long term, a reduction in primary productivity could subsequently impact fish production. Although some fish species may be adapted to wet season elevations in suspended solids, prolonged exposure to elevated levels of suspended solids may have several sub-lethal effects on fish resulting in a negative impact on fish productivity (such as siltation of fish spawning grounds, irritation of fish gills, induced stress, loss of food or ability to feed, etc.). From a human health perspective, the measured levels can make water significantly less palatable and sediment can also act as a substrate for bacteria growth and absorption of metal ions, which can all have a negative impact on human health

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

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 all camp discharges. The environmental and human health implications are discussed above.
- Coupled with elevated oil and grease, BOD and COD exceed the proposed guideline in the effluent for two of the Nakai Dam Site trickle filters. The source of both is high organic matter content of the camp discharge, with contributions from oil and grease. Although COD also measures those organic compounds not readily oxidized by biological action, a high COD may 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. There has been a 10-fold increase in the level of faecal coliform for all CAMP discharge when compared to the previous month. This indicates that there has been an error in the dilution of the sample and subsequent correction factor, either in February or March 2007. Results will be checked in April 2007.

Table 4.1: March 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bang Fai.

Parameter	Unit	WQ Guidelines	River-Specific Guideline	Nam Theun			
				SW 1	SW 2	SW3	SW 18
Sampling Date				18/03/07	18/03/07	17/03/07	17/03/07
Sampling Time				10.55 h	09.00 h	10.55 h	10.40 h
Water Depth	(m)			1	1.5	5	*
Sampling Method				grab	grab	grab	grab
Air Temperature	(°C)			23.7	23	27	27.2
Cloud Coverage				100	100	40	30
Water Temperature	(°C)			25.4	26	27.2	27.1
pH		6.0-8.0		7.18	7.05	7.17	7.21
DO	(mg/L)	> 5.0		7.04	7.12	7.59	7.39
% DO Saturation	(%)			90.3	93.4	100.8	98.1
Conductivity	(µS/cm)	< 350 or <750*		32	29.6	30.1	30.5
Turbidity	(NTU)	< 200		7.17	4.34	2.65	3.52
Total suspended solids	(mg/L)	< 40 or <80*		2.4	1.5	2	1.4
Alkalinity	(mg/L)	- ¹¹	36.26	29.7	30.1	26.9	29.3
Ammonia-nitrogen	(mg/L)	< 0.5		0.086	0.081	0.066	0.085
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		0.075	0.047	0.001	0.001
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		ND ¹	ND ¹	0.008	0.008
Potassium (K)	(mg/L)	- ¹¹	1.072	1.09	1.04	1.13	1.1
Sodium (Na)	(mg/L)	300		4.34	4.3	3.8	3.61
Manganese (Mn)	(mg/L)	< 0.5		0.032	0.022	0.032	0.03
Total iron (Fe)	(mg/L)	< 1.0		0.466	0.476	0.576	0.495
Lead (Pb)	(mg/L)	< 0.05		ND ²	ND ²	ND ²	ND ²
Calcium (Ca)	(mg/L)	50		2.72	3.87	3.77	4.02
Magnesium (Mg)	(mg/L)	< 15		0.792	1.04	1.04	0.992
Sulphate (SO ₄ ⁻²)	(mg/L)	< 500		4.38	3.78	4.77	4.18
Chloride (Cl ⁻)	(mg/L)	< 250		1.85	2.04	3.01	2.04
BOD	(mg/L)	< 15		0.9	0.8	1	0.7
COD	(mg/L)	< 40		3.24	27.6	14.7	11.4
Total phosphorus	(mg/L)	< 0.2		0.045	0.016	0.064	0.022
Faecal Coliform	(C/100mL)	150		22	58	39	26

* Not measured in error

* 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 4.1: March 2007 Surface Water Quality in the Nam Theun, Nam Kathang, Nam Gnom, Nam Phit and Xe Bang Fai.

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					15/03/07	15/03/07	14/03/07	15/03/07		15/03/07	15/03/07
Sampling Time					10.05 h	11.15 h	09.41 h	09.35 h		10.45 h	11.45 h
Water Depth	(m)				0.2	0.3	0.9	-		1	1.1
Sampling Method				N	grab	grab	grab	grab		grab	grab
Air Temperature	(°C)			O	31	29.7	-	25.3		27.5	28.1
Cloud Coverage					5	0	5	0		0	5
Water Temperature	(°C)			W	27.9	29.5	27.3	24.2		25.7	25.7
pH		6.0-8.0		A	7.86	7.93	7.61	7.64		7.98	7.9
DO	(mg/L)	> 5.0		T	7.72	7.94	7.17	7.1		8.84	8.06
% DO Saturation	(%)			E	99.9	106.8	91.8	86.4		105.1	100.8
Conductivity	(µS/cm)	< 350 or <750 *		R	546	319	66.8	86.4		382	295
Turbidity	(NTU)	< 200			3.14	2.64	5.13	3.7		9.84	7.33
Total suspended solids	(mg/L)	< 40 or <80*		S	0.8	1.9	3.2	1.2		1.2	1.9
Alkalinity	(mg/L)	- ¹¹	127	A	133	116	169	84.7	196.4	225	174
Ammonia-nitrogen	(mg/L)	< 0.5		M	0.065	0.062	0.074	0.051		0.063	0.1
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		P	0.019	0.009	0.009	0.009		0.031	0.009
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		L	0.008	ND1	ND1	ND1		0.016	ND2
Potassium (K)	(mg/L)	- ¹¹	1.556	E	3.78	3.95	5.39	1.79	0.445	0.296	0.393
Sodium (Na)	(mg/L)	300			40.1	22.8	3.34	9.32		0.887	0.996
Manganese (Mn)	(mg/L)	< 0.5			0.09	0.109	0.13	0.076		0.052	0.079
Total iron (Fe)	(mg/L)	< 1.0			0.158	0.342	0.086	0.242		0.204	0.266
Lead (Pb)	(mg/L)	< 0.05			ND2	ND2	ND2	ND2		ND3	ND3
Calcium (Ca)	(mg/L)	50			34.1	23.1	41.9	19.5		56.8	41.7
Magnesium (Mg)	(mg/L)	< 15			7.14	4.09	2.38	1.69		2.44	2.39
Sulphate (SO ₄ ²⁻)	(mg/L)	< 500			118	34.7	4.87	6.36		3.19	2.99
Chloride (Cl ⁻)	(mg/L)	< 250			22	17.8	2.62	10.8		0.1	ND4
BOD	(mg/L)	< 15			1.1	1.3	0.8	0.6		1.2	1
COD	(mg/L)	< 40			3.28	14.8	18	3.28		31.2	6.54
Total phosphorus	(mg/L)	< 0.2			0.042	0.038	0.038	0.064		0.038	0.048
Faecal Coliform	(C/100mL)	150			139	186	525	39		246	261

* 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 4.1 (Cont.): March 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	
				SW13	SW 6
Sampling Date					14/03/07
Sampling Time					12.12 h
Water Depth	(m)			N	0.8
Sampling Method				O	grab
Air Temperature	(°C)				30.2
Cloud coverage				W	10
Water Temperature	(°C)			A	27.1
pH		6.0-8.0		T	7.4
DO	(mg/L)	> 5.0		E	9.38
% DO Saturation	(%)			R	119.6
Conductivity	(µS/cm)	< 350 or <750 *			439
Turbidity	(NTU)	< 200		S	9.52
Total suspended solids	(mg/L)	< 40 or <80*		A	2.3
Alkalinity	(mg/L)	- ¹¹	198.2	M	261
Ammonia-nitrogen (NH ₃ -N)	(mg/L)	< 0.5		P	0.032
Nitrate-nitrogen(NO ₃ -N)	(mg/L)	< 3.4		L	0.338
Nitrite-nitrogen(NO ₂ -N)	(mg/L)	< 0.2		E	ND1
Potassium (K)	(mg/L)	- ¹¹	0.7288		0.14
Sodium (Na)	(mg/L)	300			0.511
Manganese (Mn)	(mg/L)	< 0.5			0.012
Total iron (Fe)	(mg/L)	< 1.0			0.247
Lead (Pb)	(mg/L)	< 0.05			ND2
Calcium (Ca)	(mg/L)	50			60.3
Magnesium (Mg)	(mg/L)	< 15			5.18
Sulphate (SO ₄ ⁻²)	(mg/L)	< 500			4.08
Chloride (Cl ⁻)	(mg/L)	< 250			0.1
BOD	(mg/L)	< 15			0.6
COD	(mg/L)	< 40			24.6
Total phosphorus	(mg/L)	< 0.2			0.032
Faecal Coliform	(C/ 100mL)	150			28

River- Specific Guideline	Xe Bangfai			
	SW7	SW8	SW16	SW 17
	14/03/07	14/03/07	16/03/07	16/03/07
	10.35 h	12.59 h	12.05 h	13.13 h
	0.5	2.1	2	2
	grab	grab	grab	grab
	30.4	29.5	30.2	29.4
	5	5	0	30
	27.8	28.4	29.5	29.9
	7.89	8.01	8.01	8.05
	9.35	9.45	8.45	7.92
	119.5	124.2	120	107.2
	339	325	327	326
	2.51	3.03	4.86	11.3
	1.9	2	1.8	7.3
198.2	202	192	191	194
	0.052	0.056	0.026	0.029
	ND1	0.009	ND1	ND1
	ND2	ND2	ND2	ND2
0.7288	0.528	0.529	0.51	0.614
	1.93	1.93	1.65	1.8
	0.013	0.01	0.016	0.018
	0.326	0.084	0.132	0.328
	ND3	ND3	ND3	ND3
	47.2	46.8	44.7	42.6
	3.78	3.98	4.19	4.94
	4.48	5.37	4.48	4.67
	0.49	0.87	1.26	2.43
	0.8	0.8	0.6	0.7
	19.7	14.8	6.54	13
	0.038	0.032	0.045	0.019
	62	11	14	86

* 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: March 2007 Resettler's & Project Lands Groundwater Faecal Coliform Results

Date	Location	Faecal Coliform result	WQ guideline
Ban Oudomsouk			
18/03/07	RGW1	1	0
18/03/07	RGW28	0	0
18/03/07	RGW39	0	0
Ban Oudomsouk mai			
14/03/07	RGW2	0	0
14/03/07	RGW9	1	0
14/03/07	RGW27	0	0
19/03/07	RGW38	0	0
School			
18/03/07	RGW3	0	0
Ban Phonephanpek			
18/03/07	RGW4	6	0
18/03/07	RGW29	0	0
19/03/07	RGW37	0	0
Ban Nongboua			
18/03/07	RGW5	0	0
18/03/07	RGW30	0	0
18/03/07	RGW33 after filter	0	0
Ban Bouama			
18/03/07	RGW6	0	0
18/03/07	RGW22	0	0
18/03/07	RGW23	0	0
Ban Phonsavang			
19/03/07	RGW7	0	0
19/03/07	RGW20	0	0
19/03/07	RGW21	23	0
19/03/07	RGW34	0	0
Ban Sop-on			
19/03/07	RGW8	0	0
19/03/07	RGW10	0	0
19/03/07	RGW18	0	0
19/03/07	RGW19	0	0
Ban Done			
19/03/07	RGW11	0	0
19/03/07	RGW12	3	0
19/03/07	RGW16	0	0
19/03/07	RGW17	0	0
Ban Sop Phene			
17/03/07	RGW13	0	0
17/03/07	RGW32. from	0	0
17/03/07	RGW32. from tank	47	0
Ban Sophia			
17/03/07	RGW14	5	0
17/03/07	RGW24	0	0
17/03/07	RGW25	0	0
Ban Sop-ma			
17/03/07	RGW15	0	0
17/03/07	RGW26	0	0
17/03/07	RGW36	16	0
Ban Khone Kaen			
19/03/07	RGW31. from	No sample, due to pump	
19/03/07	RGW31. from tank	42	0
19/03/07	RGW35	0	0

Table: March 2007 Construction Site Discharge

Parameter	Unit	Project	Dam Site	Headrace	Intake channel	Access Adit	Powerhouse	DC tunnel Inlet
		Guideline	CAD 1	CAD 2	CAD3	CAD 4	CAD 5	CAD 7
Sampling Date			17/03/07		18/03/07	15/03/07	15/03/07	14/03/07
Sampling Time			11.20 h	N	11.43 h	08.50 h	09.09 h	11.35 h
Water Depth	(m)		-	O	-	0.2	-	-
Sampling Method			grab		grab	grab	grab	grab
Air Temperature	(°C)		27.5	D	23.3	25.4	25.9	27.7
Water Temperature	(°C)	<40	25.5	I	24.4	24.1	26.1	25.3
pH		6.0 - 9.5	8.88	S	8.23	11.10	7.78	7.35
DO	(mg/L)		6.96	C	6.99	7.95	6.96	5.73
% DO Saturation	(%)		90.6	H	88.9	98.6	87.2	71.2
Conductivity	(µS/cm)	<3500	184.4	A	324	548	82.6	438
Turbidity	(NTU)		20.3	R	89.6	25.7	43.2	4.51
Total suspended solids	(mg/L)	<40	9.1	G	63.5	19.3	23.4	ND ¹
Oil and Grease	(mg/L)	<5	ND ²	E	ND ²	ND ²	1.4	ND ²

Table: March 2007 Construction Camp Discharge

Parameter	Unit	Project Guideline	Dam Site Camp			Ban Oudomsouk Camp	Platform No.1 Camp	RNT
			CAMP 1	CAMP 2	CAMP 3	CAMP 4	CAMP 5	CAMP 6
Sampling Date			17/03/07	17/03/07	17/03/07	18/03/07	16/03/07	16/03/07
Sampling Time			11.50 h	12.16 h	12.05 h	10.05 h	08.30 h	09.30 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)		*	28.3	30.1	22.6	26.3	31.0
Water Temperature	(°C)		27.6	27.6	28.1	28.5	25.8	29.1
pH		6.0-9.5	7.36	7.66	6.89	7.84	7.75	7.33
DO	(mg/L)		0.14	4.86	0.12	1.80	3.48	2.91
% DO Saturation	(%)		1.5	65.1	1.2	22.3	43.5	38.5
Conductivity	(µS/cm)	<3500	715	441	829	242	1287	1002
Turbidity	(NTU)		111	30.0	255	>1100	52.5	117
Total suspended solids	(mg/L)	<40	89.0	48.7	273	1,081	64.3	397
COD	(mg/L)	<130	291	58.2	705	70.5	104	246
Fecal coliform	(CFU/100mL)	<1000	14,600	13,600	14,400	15,200	18,800	11,800

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

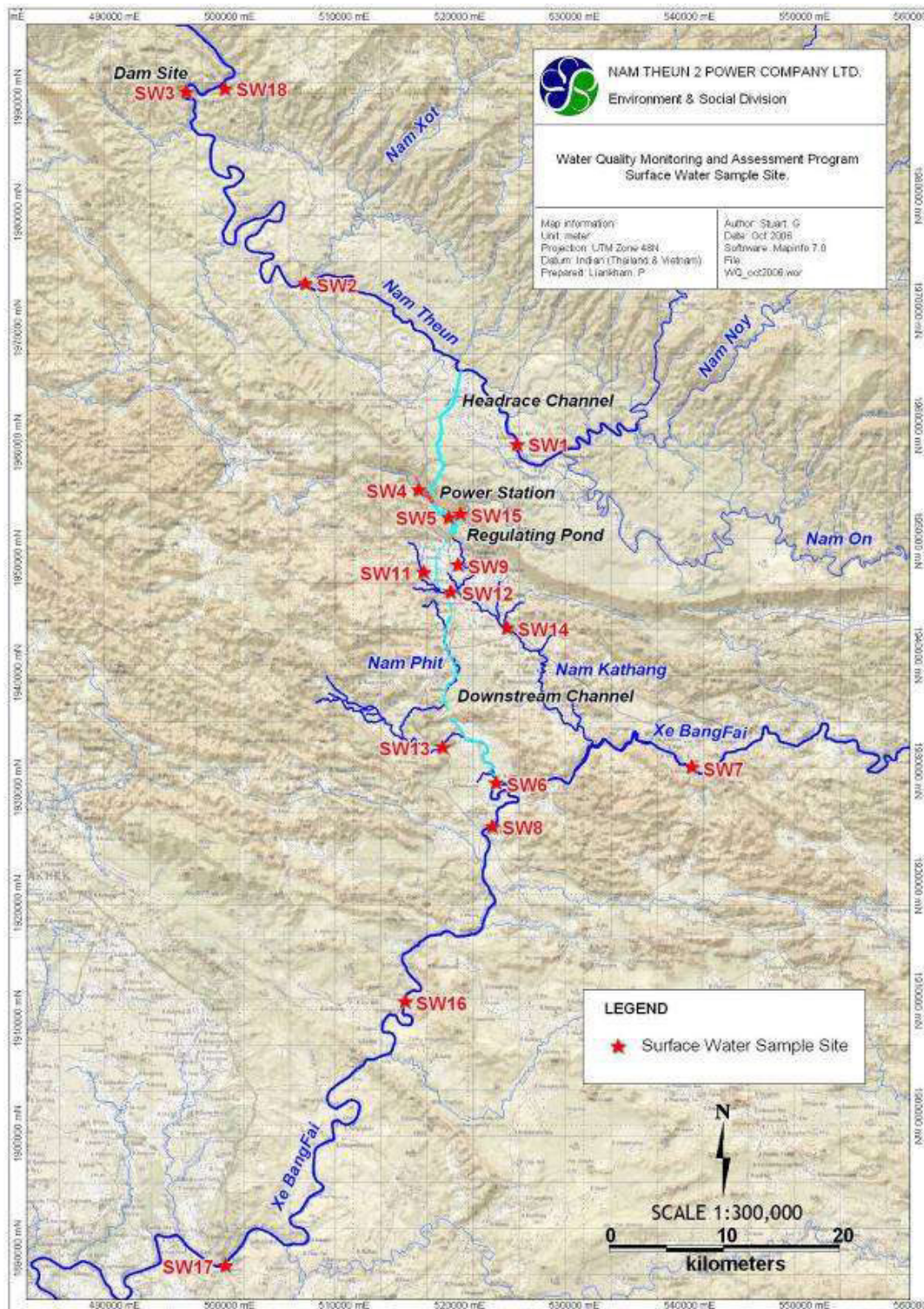
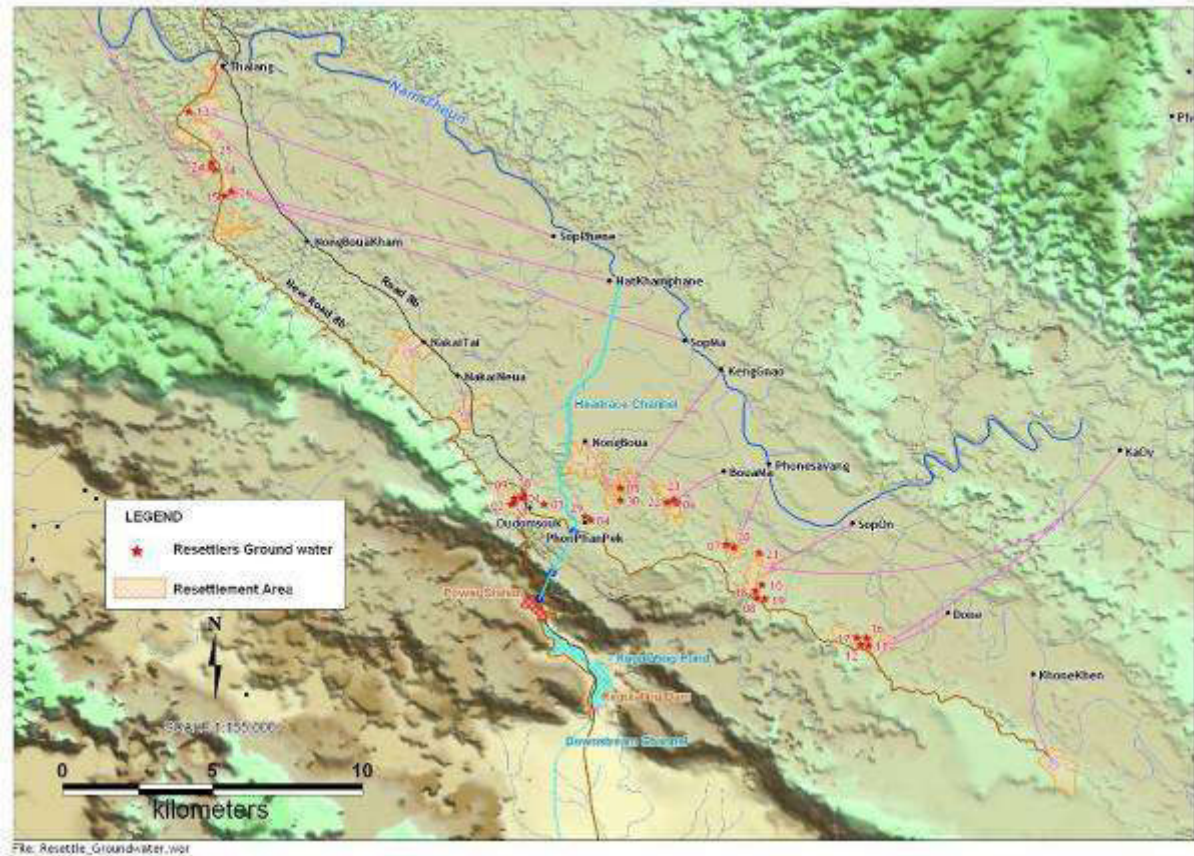


Figure: Resettlers & Project Lands Groundwater sampling sites



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

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

- NTPC review of the third 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.
April 2007	
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

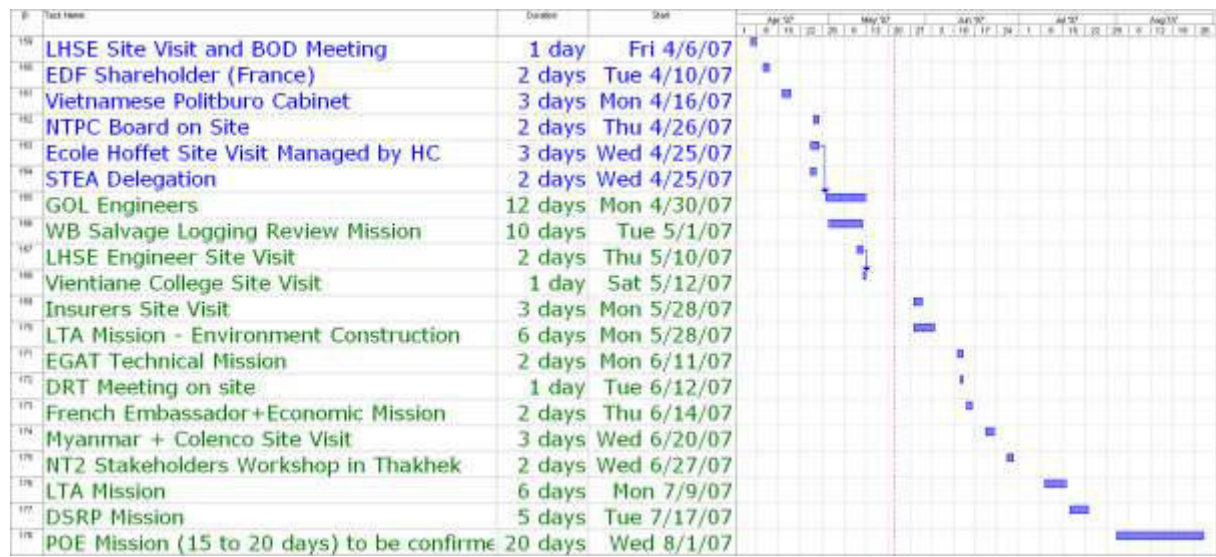
3.5 EMO's activities linked to construction

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 expert 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

