



THEUN-HINBOUN EXPANSION PROJECT
Social and Environmental Division
FROM INCEPTION TO 2010

Theun-Hinboun Expansion Project (THXP) area, Bolikhamxay and Khammouane Provinces, Laos



Foreword

The aim of this report is to present the achievements and ongoing work for the Social and Environmental Division (SED) of the Theun-Hinboun Expansion Project (THXP) from the commencement of social and environmental programs in early 2008 to the end of 2010.

From the start of planning, Theun-Hinboun Power Company (THPC) has been committed to the highest standards of social and environmental mitigation. The Environmental Impact Assessment (EIA), Environmental Mitigation and Management Plan (EMMP) and the Resettlement Action Plan (RAP) were prepared in accordance with Asian Development Bank safeguard policies, the Equator Principles for lending banks and the national laws of Laos. In addition, an innovative approach has been developed to go beyond these regulations in order to ensure that impacted people become “project beneficiaries” and that there is truly sustainable development. The project is committed to income targets for all impacted areas and intends to rehabilitate tracts of degraded forests.

This report presents the full range of interventions and programs being carried out by the Social and Environmental Division. Each section presents the rationale and approach, activities that have been undertaken or are ongoing, and some of the challenges and difficulties in carrying out programs. This is intended to be a balanced presentation of the facts and is evidence of a commitment to transparency and to providing information to the general public.



Theun-Hinboun Power Company and Hydropower Development in Laos

BELOW: Dam from the first THPC Project
FACING PAGE: The original THPC Powerhouse

Laos is endowed with abundant water resources that have the potential to be a source for clean energy for the development of the country and for export to neighbouring countries. Only a small fraction of potential hydropower sites has been developed so far, but the government is committed to developing this resource in a sustainable manner as a catalyst for economic and social development.

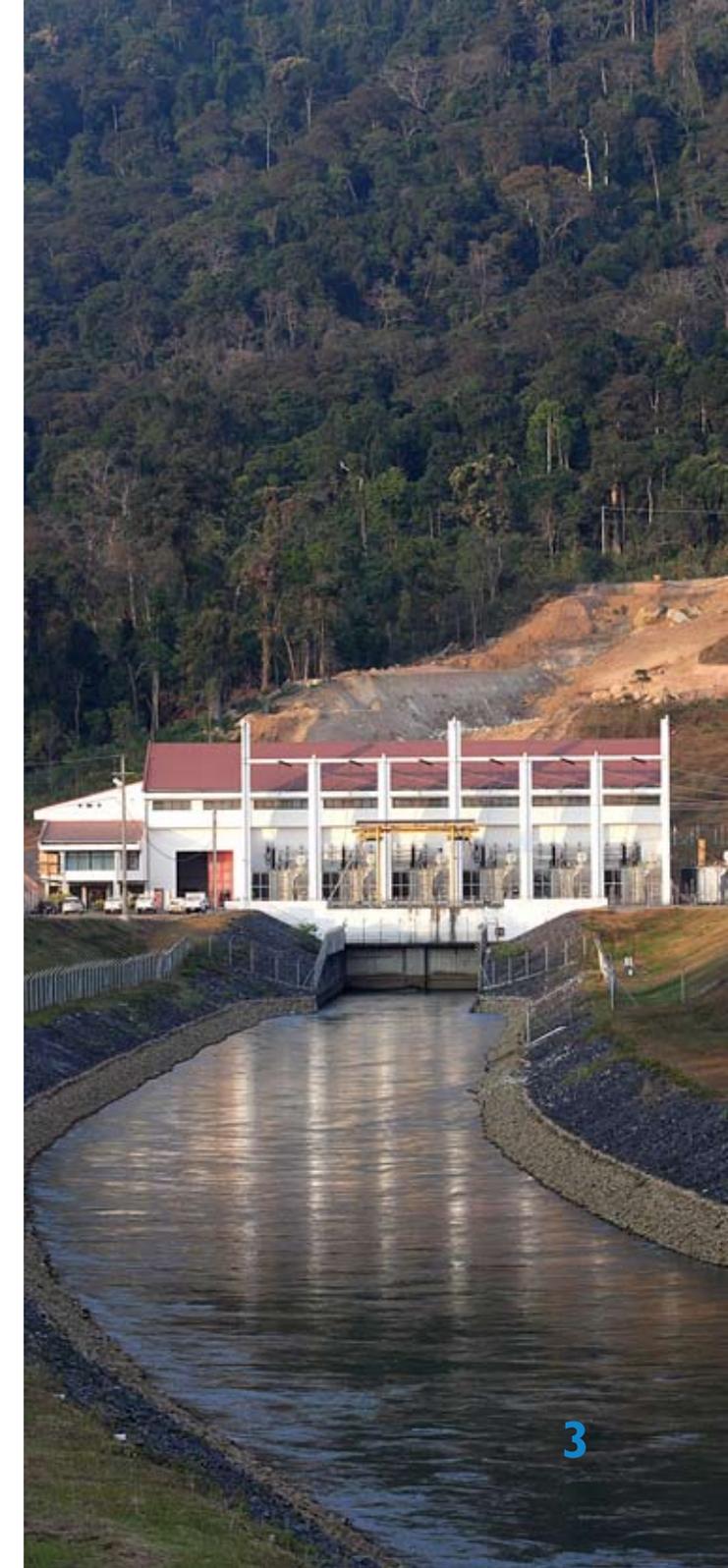


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The Theun-Hinboun Power Company (THPC) was the first Independent Power Producer in the hydropower sector of the Laos. THPC's shareholders include Electricité du Laos (EdL) (60%), Statkraft of Norway (20%) and GMS Lao Company Limited, an investor in energy projects based in Thailand (20%). All shareholders are committed long-term investors with experience in hydropower production. THPC's Hydropower Operation is located in both Bolikhamxay and Khammouane Provinces with commercial operations commencing in March 1998. The first project was prepared in accordance with Lao regulations and laws and with Asian Development Bank procedures.

THPC's hydropower plant is a trans-basin, run-of-river project, which generates more than 1,500 GWh per year from 210 MW of installed capacity. Pursuant to a long-term Power Purchase Agreement with EGAT, THPC sells at least 95% of its net available electricity output to the Thai market, with the balance sold to EdL for local power demand.

Since the commencement of generation and detailed planning for the Expansion Project, Lao government environmental and resettlement policy and procedures have been developed in great detail and provide a framework for best practice in accordance with safeguard policies of international donors.



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THXP Description



TOP: Construction of the main dam on the Nam Nguang

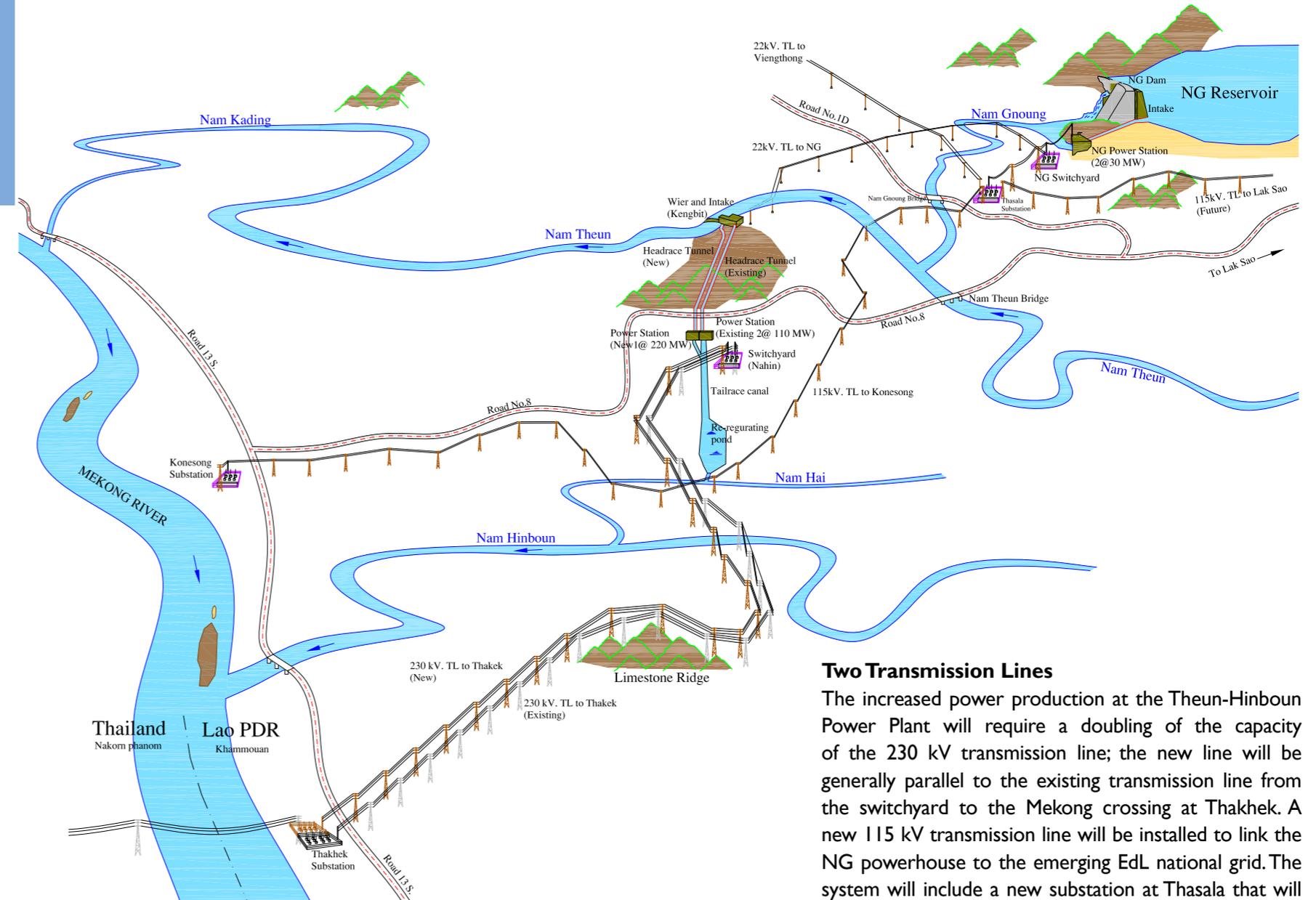
ABOVE: Birdseye view of the dam construction site in early 2010

Project Location

The Theun-Hinboun Expansion Project (THXP) is located on the border of Bolikhamxay and Khammouane Provinces in Laos. The dam will be built on the Nam Nguang (NG), which is a tributary of the Nam Theun/Nam Kading river system, about 27 km upstream from the existing diversion dam, at Thasala village. The new dam will create an upstream reservoir on the Nam Nguang extending, at its maximum storage level, about 100 km upstream from the dam. As with the existing project, the expansion will divert water from Nam Theun/Nam Kading basin into the Nam Hai/Nam Hinboun river basin to the south. The dry season flow in the Nam Hai and Nam Hinboun river channels downstream of the Theun-Hinboun Power Plant will increase as a result of the THXP.

A New Reservoir, Dam & Powerhouse

The new dam at Thasala will have a full supply level (FSL) at 455 masl. The NG reservoir upstream of the dam at FSL will cover an area of about 105 km² and have a gross storage capacity of 2,450 Mm³. Water will be released from the reservoir when needed to supply water to the Theun-Hinboun power stations. A power plant will be located at this site for release of water downstream to the Nam Theun. This plant will have an installed capacity of 60 MW. Power from the NG facility will be transmitted from Thasala to a substation on National Road #13 and be sold to EdL for consumption within Laos. A second diversion and headrace tunnel will be built with the intake at the existing Theun-Hinboun dam at Kengbit. village There will be a new powerhouse located immediately adjacent to the existing powerhouse building at Khounkham village.



Two Transmission Lines

The increased power production at the Theun-Hinboun Power Plant will require a doubling of the capacity of the 230 kV transmission line; the new line will be generally parallel to the existing transmission line from the switchyard to the Mekong crossing at Thakhek. A new 115 kV transmission line will be installed to link the NG powerhouse to the emerging EdL national grid. The system will include a new substation at Thasala that will be used for local distribution and to connect with other projects proposed in the region.

SED Goals and Approach



TOP: New irrigated rice fields near Phoumakneng

ABOVE: Upland rice seed

The overall goals for the social and environmental programs are:

- Identify all direct and indirect impacts of the Expansion Project
- Working closely with technical planners and engineers to avoid and reduce impacts whenever possible
- Full mitigation of all unavoidable impacts through compensation, replacement, resettlement and relocation programs
- Design a thorough monitoring system with clear targets for full restoration of all households to be resettled or relocated
- Implement all social programs in close cooperation with Project Affected Persons (PAPs) and government organizations through consultations, disclosure of entitlements and reporting to all stakeholders
- Implement all environmental programs to protect local environments and enhance conservation and reforestation programs to offset any impacts from construction and operation

Several detailed studies were undertaken at the feasibility stage resulting in an Initial Environmental Evaluation (2006). A full Environmental Impact Assessment (EIA), Environmental Mitigation and Management Plan (EMMP) and a Resettlement Action Plan (RAP) were completed by NORPLANA.S of Norway in 2007 and finalized after extensive consultations with all stakeholders in April 2008. These documents were approved by the Water Resources and Environment Authorization (VREA) in accordance with the Environmental Protection Law (1999), EIA Regulation (2000), and THXP was the first project to be developed in accordance with the National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR (2005).



In addition, the advances in planning and implementation of the Nam Theun 2 Hydropower Project in the same basin have been reflected in the planning of the THXP and will add significantly to achieving the overall goal of social and environmental sustainability. The SED budget represents about 10% of the total project cost of 650 million USD.

ABOVE: New school library at the Nongxong resettlement site

SED Start-up and Approaches



The Expansion Project had the advantage of an already functioning organization mitigating and monitoring aspects of the first project: the Environmental Management Division (EMD). The staff of the EMD provided experience and continuity, and a starting point for pre-Financial Close activities essential for preventative measures to be effective, for mitigation to be well planned and carried out in a timely manner, and for optimizing positive interventions. Funds were made available (ca. 2.3 million USD) to improve ongoing mitigation measures of the first project and to start-up new activities identified in the studies. These included:

- Regional health programs with District Health Offices, covering refurbishment of health posts, vaccination, mother-child care, sanitation, health awareness and other government programs that were not being implemented due to a lack of equipment, vehicles or trained staff.
- Social Management Action Plan (SMAP) included anti-trafficking, youth awareness programs, Sexual Transmitted Diseases' awareness and community strengthening in order to prepare villages in the vicinity of construction camps for workers and camp follower arrivals.
- Demonstration farms in all three resettlement sites for staffing and preparation of host villages for resettlement.
- Full asset registration and consultations of Project Construction Land areas so that compensation for losses of assets, production and structures can be paid prior to impacts.
- Develop a full set of procedures and standards for environmental compliance in preparation for discussions with contractors and for joint site inspection of construction sites.



SED at the end of 2010 had a staff of 190 persons, including logistic and administrative staff. SED was able to ramp up to a level of over 100 persons before Financial Close in order to be able to carry out all planned activities on schedule. In addition, the approach has been to mainstream ethnic minority, sustainable development and gender issues as much as possible rather than have external inputs. There has been a conscious effort to include minorities in implementation teams and to have a significant presence of women staff (currently at 25%) and staff with varied backgrounds and professions, including from government and Non-Government Organizations (NGOs). SED has strived to establish good working relations with a number of internationally recognized NGOs, including World Wildlife Fund (WWF), Wildlife Conservation Society (WCS) and Save the Children Norway.



FACING PAGE: Preparing fruit trees and other saplings for community use in the resettlement demonstration farms
ABOVE LEFT: Student watering school vegetable gardens, Nongxong
ABOVE: Resettlement houses form a village environment



FROM TOP: Progress on construction and establishment of Phonthong resettlement village from February 2010 until January 2011

UXO Clearance

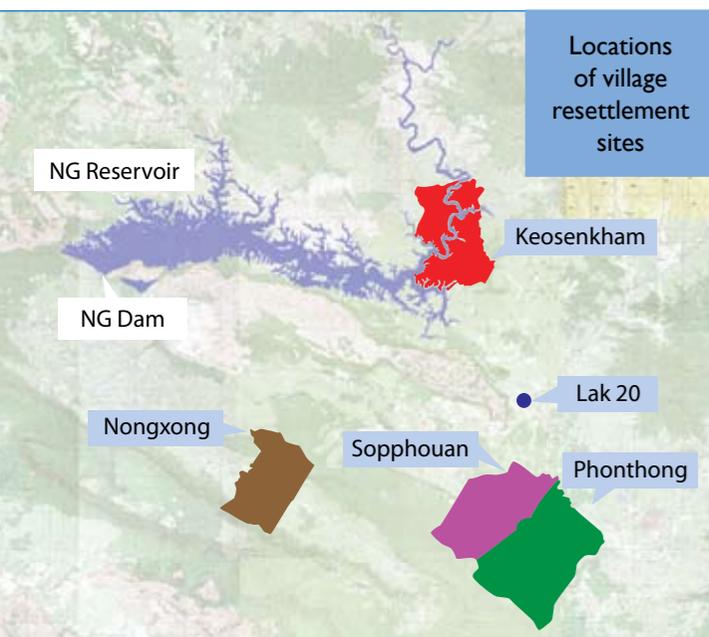
Laos is one of the most bombed countries in the world. A huge amount of ordinance was dropped on Laos during the Indo China war (1962-1975) and approximately 200 people are killed or injured by Unexploded Ordinance (UXOs) each year. There are a number of organizations that clear land of UXOs making areas safe for villagers that rely on cultivating land and harvesting natural products.

The policy of the THXP is to clear UXOs from construction, resettlement and infrastructure areas so that resettlers and other project affected people can live safety without fear of UXOs. Both international companies and the Lao military have undertaken work for the Company before any construction or movement of people into new areas has taken place. For resettlement and relocation areas, THXP has cleared all roads, school areas, health centre areas, permanent agricultural areas (rice fields) and new village residential areas. In addition, any reports by villagers of the presence of UXOs are investigated and cleared. So far, only a limited number of UXOs (bombs, grenades, projectiles and bullets) have been found along with shrapnel, empty shells and metal objects in SED areas. So far approximately 136 hectares have been cleared at a cost of 1,100 USD per hectare. SED is also working with other organizations on improving awareness for school children.



ABOVE: Unexploded ordinance had to be cleared from many sites

Resettlement – Approach and Overview



The construction of the Nam Gnouang dam and flooding of 103 km² impacts 12 villages located along the Nam Gnouang valley. One of the most challenging programs is the resettlement and rehabilitation of approximately 4000 people into new resettlement sites. There have been a number of critical assessments of resettlement in the context of hydropower development. As a result, THPC policy states that resettlers will have an improved standard of living and a sustainable livelihood. An entitlement policy outlines obligations that include:

- Improved housing and household plots of 1000m² for vegetable gardens, fruit trees and small livestock
- One hectare of rice fields and half a hectare of upland fields for cash crops and trees
- Access to communal forests, grazing areas, rivers and fish ponds
- Improved health and education services
- All-year road access to markets
- Technical assistance, tools and equipment

The preparation of the Resettlement Action Plan (RAP) involved the verification of suitable resettlement sites based on technical and cultural requirements. Sites were identified first by searching for enough agricultural land, reasonable access, adequate water and within the same district. Cultural requirements included host villages having the same ethnic groups for easier integration.

In order to ensure that sustainable development is achieved, a needs assessment was conducted for new locations. This was based on needs for food security and nutritional



needs for families, income required for maintaining and repairing shelters and living conditions, education and health expenses, cultural and social obligations, taxes and 30% additional income for savings. These calculations established income targets for resettlement and relocation households: 1,800 USD for resettler households and 1,450 USD for relocation sites. These targets are 25-40% above existing income levels and will increase as the Lao Consumer Index increases (estimated at ca. 5% each year). THPC is committed to support resettler and relocation households until these targets are met for two consecutive years by at least 80% of households.



LEFT: First rice harvest at Nongxong resettlement village in late 2009

TOP: Household electricity meter at Phonthong settlement

ABOVE: Conducting animist ritual for village moving

Nongxong Resettlement in 2009



The resettlement of 159 households (approximately 800 persons) from two villages closest to the dam construction areas occurred from February to May 2009. These two village lands would not be inundated until 2010 but the early physical resettlement allowed for staging resettlement in three phases and to test assumptions and gain experience for the large numbers to follow.

Before the move to the new site of Nongxong many activities were completed:

- Consultations were carried out well in advance covering entitlements, choice of self-resettlement or resettlement with the project, village layout and house design.
- A demonstration farm was established and manned by SED and government staff to trial crops and to confirm assumptions of the livelihood system, including growing rice in plots at the farm and in plots in the village itself. This was to assure resettlers that all elements of the livelihood system were viable.
- An all-weather rural road was constructed – 16 km from National Road #8 at Nongkok to the resettlement areas at Nongxong.
- A 22kV line was constructed by Electricité du Laos along the road and host households were connected to the national grid.
- Land was cleared for housing and internal roads and construction of houses was undertaken after resettlers decided on house types, location within housing plots and orientation with rituals for erecting the first posts held by resettlers and local religious leaders.
- Village layout of housing plots was decided through consultations and consisted of three main areas, split along ethnic lines: Tai, Hmong and Vietic groups.
- Detailed land-use surveys were conducted and outlines of locations of one hectare plots for rice and 0.5 hectare plots for upland crops were presented to resettlers.



FACING PAGE TOP: Raising the spirit post ritual before constructing houses

FACING PAGE BELOW: Construction of new houses

LEFT: Girl on the steps of her new house in Nongxong

- Piped water supply from local streams was installed to public pumps for 5-6 households. This system was later expanded to improve water supply to host villages as well.
- About 25 hectares of land were cleared for sowing grass for large livestock.
- An agreement with World Wildlife Fund (WWF) was signed to conduct a detailed study on Non-Timber Forest Products (NTFPs) and forest management requirements in the village territory.
- An agreement with government was reached to provide additional rice support during the transition period of one year.

Host villagers have the same livelihood benefits and income targets as resettlers. In order to secure ample land for resettlers and to win over the good faith of the host community, roads, electricity and aspects of the livelihood system were introduced before resettlers arrived. This strategy allowed for an easy acceptance of newcomers, doubling the existing population of Nongxong. Some disputes about land arose and compensation for any minor impacts were dealt with effectively.

Resettlement Villages and Households								
No.	Village Name	2007: Original Households	2010-2011: Revised Households	Persons	Project Resettler Households: A	Self Resettler Households: B	Resettlement Site	Resettlement Schedule 2009-2011
1	Somboun	64	72	417	39	33	Nongxong	April-June 2009
2	Phabang	65	78	447	70	8	Nongxong	April-June 2009
3	Xot	94	94	476	57	37	Phonthong	May-June 2010
4	Ka an	27	32	165	17	15	Phonthong	April-May 2010
5	Chalet	31	31	157	16	15	Phonthong	April-May 2010
6	Boung	44	44	241	23	21	Phonthong	April-May 2010
7	Pon	108	108	579	73	35	Sopphouan	April-June 2010
8	Sopkhom	145	177	833	153	24	Phonthong	January-March 2011
9	Phonkeo	44	57	278	54	3	Keosenkham	April-May 2011
10	Sensi	36	45	241	38	7	Keosenkham	April-June 2011
11	Thambing	40	45	239	39	6	Keosenkham	April-June 2011
12	Sopchat	48	58	294	49	9	Keosenkham	April-June 2011
Totals		746	841	4367	628	213		

The relocation from the reservoir consisted of agreeing on auspicious days for dismantling houses and transporting belongings and livestock to the new sites where houses and infrastructure were complete. Some delays were experienced due to the time resettlers took to finally decide to either become resettlers or self-resettlers and when to actually move. The last resettlers left the old village locations in mid-May when rains had already begun and the late comers did not have ample time to clear rice fields for planting of upland rice (first stage in the establishment of viable paddy fields). Another challenge was convincing resettlers to bring all their livestock since there were concerns about adequate pasture. Finally, processing compensation payments for the loss of immovable assets (trees and land in excess of what was being provided by the Company) were delayed due to late agreements on government rates and the need to recalculate claims for loss of cultivated areas and crops. However, despite these minor setbacks, resettlement of this first group was completed on time.

BELOW: Family outside their new home



Village Group 2 Resettlement in 2010



The second group of villages to be resettled out of the reservoir comprised five villages with 308 households and a population of approximately 1,700 people. These villages had to be removed due to potential inundation from the dam whose increasing height could have led to flooding of the central portions of the reservoir. Consultations on the details of the new sites at Soppouan and Phonthong host villages commenced in 2009 and were finalized in early 2010 ahead of physical relocation which took place from April to early June the same year. A demonstration farm was set up in 2009 to prepare the sites and work closely with host villagers. Electricity, improved services and roads were all constructed in advance. Both host villages are included in the World Wildlife Fund (WWF) program to support forestry management and promoting of rattan production. THPC is working closely to integrate these programs with other resettlement activities for achieving a sustainable livelihood system.

The greatest challenge for this group was removing people, belongings and materials from villages without road access. Temporary roads of about 24 km were constructed to achieve a timely resettlement to host villages before the onset of the monsoon rains. Rice yields were lower than expected for the first year due to pest and drought at the beginning of the rainy season. However, THPC provided one year of rice support for 2010-11 and will work to ensure improved rainfed paddy to secure food production targets and income levels.



FACING PAGE, AND ABOVE:
Dismantling houses in the reservoir area
and loading trucks with belongings for
the new site at Phonthong

Nongxong Resettlement after One Year (2010)



TOP: Raising pigs in Nongxong

ABOVE: Cassava is grown as a cash crop by many resettlers

The physical resettlement to Nongxong was completed on time, but this only initiated the long process of social, economic and institutional restoration and improvement that should lead to a fully functional society and achieving income and human development index targets. After more than one year, most households have extensive vegetable gardens, animal pens, fruit trees and a range of cash crops. Most planted rice, crop, fragrant bark trees and other crops in their 0.5 hectare plots. Areas around the residential areas have been planted with pineapple and cassava on the villagers' own initiative. There is evidence of people settling in, extending houses and engaging in small businesses. Steps are being taken to strengthen local institutions, including Water User Groups and management of electrical pumps.

A number of challenges and tasks remain:

- The biggest challenge has been the development of rice fields and terraced rice fields. The combination of finding suitable land, clearing, leveling and bunding, and distribution to resettlers has taken more time and effort. Some have demanded cash compensation but THPC has insisted on following resettlement policy of providing land for land
- Attempts at cultivating peanuts on rice fields was not successful due to poor quality of seed, dry weather and delays in planting so few could benefit.
- Only two of the planned four supplementary irrigation systems were completed due to compensation issues with host villagers which have now been solved.

In order to ensure that resettlers had sufficient food, THPC has provided additional rice support and Food-For-Work opportunities until the remaining parts of the livelihood system are fully functioning. Progress is now being made on finalizing rice fields and completing irrigation systems for 2011.

RIGHT: Tractor cutting new paddy rice terraces

BELOW: Hmong resettlers with their newly painted home



Approach to Downstream Impacts



ABOVE: River bank gardens along the Nam Hai

The approach to addressing the impacts on downstream villages is complex due to the fact that villagers living along these rivers have been regularly subjected to natural flood events that were later exacerbated by the first Theun-Hinboun Project. Floods were a regular occurrence on these flood plains but the duration of flooding had increased with additional water release (maximum of 100 m³) from the THPC powerhouse. During the dry season, additional water is a benefit since it allows for improved navigation and more water for livestock and agricultural activities, including decreased pumping costs. However, in the wet season more water contributes to longer duration of floods that inundate villages and rice fields in some years. Erosion of the banks caused by the changes in water levels has also led to a significant decrease in fish populations. THXP needed to address these cumulative issues and to plan for potentially greater impacts from the new project.

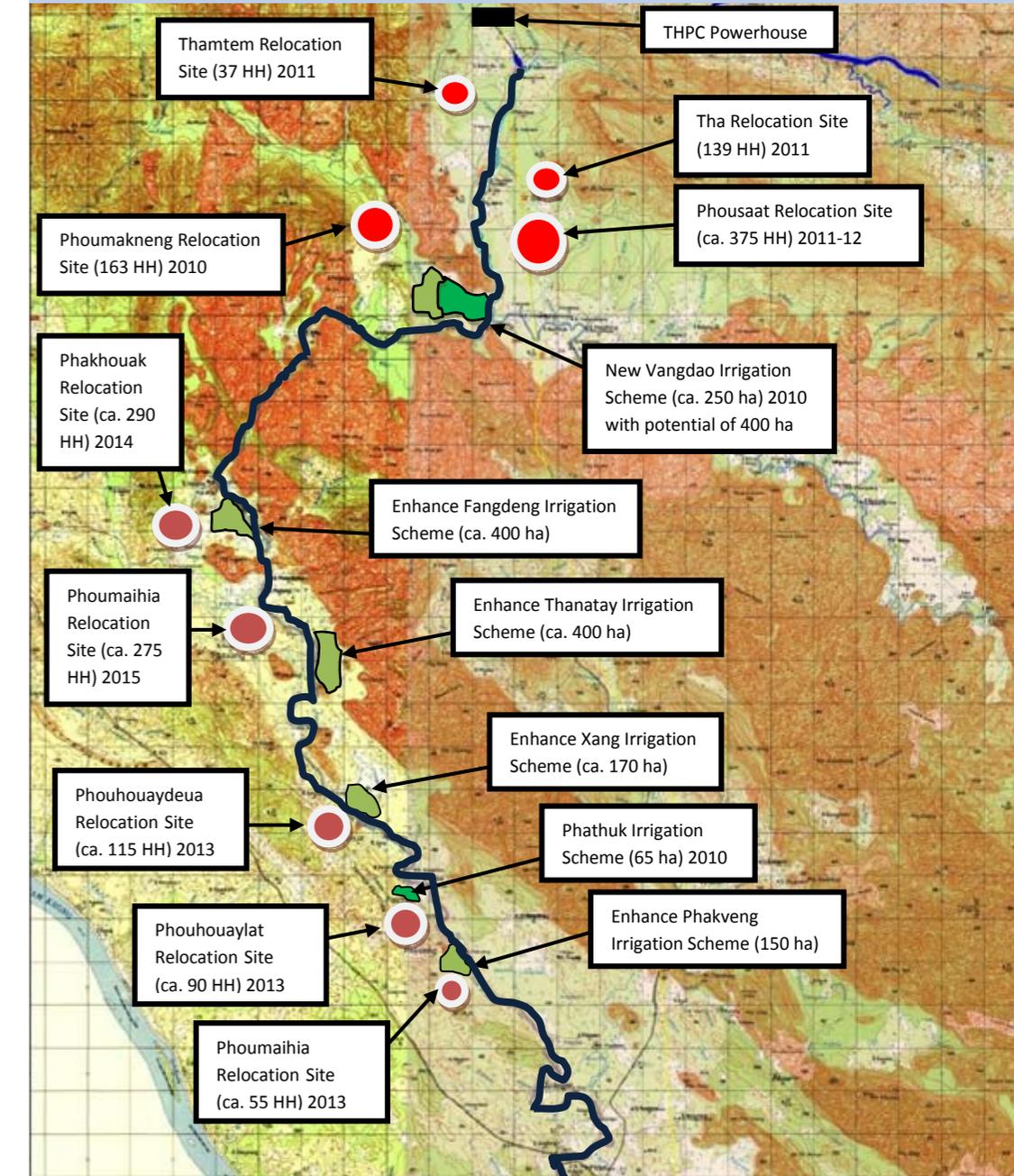
The original mitigation for these impacts was to support dry season rice cultivation (100% of the costs for fertilizer, diesel for pumps and rice seed) and to promote alternative livelihood solutions, enhancing livestock production and cashcrops. However, this was not a sustainable solution in the long-term.

Consultations with downstream villagers were carried out by the Company prior to the finalization of the THXP Resettlement Action Plan (RAP) so that a strategy for dealing with the cumulative impacts could be identified. Villagers indicated a strong preference for relocation to flood-safe areas which they had already located. These were verified by SED and a commitment to relocation of villages was outlined in the final RAP. In addition, villagers requested support for dry-season rice cultivation and improved infrastructure and services.

The main elements of the strategy agreed with local government authorities and the villages consisted of:

- Relocation of villages to flood-safe areas close to existing sites
- Dry-season irrigation for food security when flood-safe paddy fields are not available.
- All-weather roads and electricity supply
- Improved services (health and education facilities)
- Technical assistance to reach income targets that are sustainable and above existing income levels (20-30% increase)

This approach provides a permanent solution to both natural flood events and additional impacts by the project and conforms to government plans of village consolidation and development for infrastructure and services. The emphasis in 2010-12 is on villages along the Nam Hai that are most affected by the additional water from power generation. In Phase I, two sites have been identified at Phoumakneng and Phousaat for the relocation of nine villages and an additional two relocations to roads will also be carried out before the THXP comes on line. Phase 2 will relocate 12 villages along the Nam Hinboun after the THXP comes on line (2013) but livelihood initiatives have already started in these areas.



Phoumakneng Relocation in 2010



The relocation of the first group of downstream villages from the confluence of the Nam Hinboun and Nam Hai to a flood-safe area close to their existing villages was carried out between February and December 2010 with the majority of houses being dismantled and rebuilt between March and June 2010. A total of 167 households have moved to the site from five villages located at the flood-prone confluence of the Nam Hai and Nam Hinboun: Done, Phakhonkho, Khen, Khengkhot and Nasakong villages. In addition to providing assistance and additional materials for the improvement of housing, THPC infrastructure teams have also established a new school, a health centre, a village hall, water supply to all households, electricity connections and are in the process of improving rural roads and constructing a temple.

Livelihood teams have ensured that all households have productive household gardens, new fruit trees, animal pens for small livestock and fishponds. Compensation has been paid for all non-moveable assets. The greatest achievement so far has been the construction of a large dry-season irrigation scheme that will provide food security and income for villagers. Approximately 235 ha of rice paddy is now irrigated by electric pumps and this area can be further expanded to 400 ha in the future. Work in the next years will focus on establishing viable village institutions, irrigation management and water user groups, additional productive lands for cash crops and marketing of these crops.



ABOVE: New home owners in Phoumakneng

FACING PAGE FROM TOP: Villager in his new home, Children going to school, View of newly constructed and painted houses

Livelihood Development



ABOVE: Raising catfish for sale or food in Phoumakneng

FACING PAGE TOP FROM LEFT: SED staff prepare demo gardens at Phonthong, Using the suspension bridge outside Phonthong to reach new fields, Growing vegetables for sale or food

FACING PAGE MAIN: Irrigation canal constructed for Phoumakneng residents

The greatest challenge for resettlement is achieving sustainable livelihood development after physical resettlement to new sites. From the start, SED has put in place a number of options to ensure sustainable development for resettlers and host villagers at resettlement sites and at relocation sites in downstream areas. Demonstration farms have trialed crops and supplied villagers with seeds and seedlings. The goal is to provide farmers with numerous viable options and assistance with nutrition and marketing in order to achieve food security and income targets.

Interventions include:

- One hectare of rainfed or irrigated rice fields to supply the staple rice crop
- Household vegetable gardens for local consumption and sale
- Penned small livestock as an important source of protein and for sale
- Grazing areas for large livestock and training in cut-and-carry fodder for penned cattle
- Ponds for raising catfish and frogs for food and sale
- Vaccination programs for all livestock through Village Veterinarian Volunteers
- Cash crop production of mushroom, wet-season vegetables, feed corn, pineapples, cassava, peanuts and other marketable crops for sale in local markets
- Domestication of Non-Timber Forest Products, especially rattan in cooperation with the World Wildlife Fund
- Agro-economic marketing of crops



Consultation and Public Involvement



ABOVE: Pre-move consultations with reservoir villages in late 2009, villager group in discussion with SED team

THXP implemented an extensive consultation program in keeping with national and international policy guidelines. Consultation is a process of dialogue with affected community members intended firstly to ensure the project and its potential impacts are understood, but more importantly, to gather local knowledge and preferences to be incorporated into social and environmental activities. Also known as Public Involvement (PI), it is a form of consultation that specifically establishes a ‘feedback loop’, a two-way flow of information. Thus with feedback at each stage and the beginning of every major activity, activities can be modified to create greatest possible benefits, and potential problems can be tackled early or alternatively flagged for greater attention. It is also a means of achieving “public acceptance” by affected communities and to build the trust necessary for a successful restoration process.

The first phases of the consultation program were implemented in 2006-2007 before project approval and formed the basis of the Resettlement Action Plan (RAP). Full registration of reservoir residents and their assets occurred in mid-2007 during consultations. Once THXP was approved, more in-depth and lengthy public discussions were held in and on the following areas of concern:

Project Lands: Villagers likely to be disturbed by project construction were visited to explain upcoming project compensation and discuss positive and negative impacts likely to occur. The Social Management Action Plan (SMAP) was developed as a result of these consultations and will continue through the construction phase (see SMAP note for further description).

Downstream: Communities impacted by the original project, having the benefit of first-hand experience of a hydropower scheme, offered a number of clear recommendations for SED. An intensive consultation process was undertaken to fully document and detail community preferences for relocation away from the Hinboun River. These consultation reports formed the basis of the relocation plan and policy (see Downstream note for further description).

Reservoir: Resettlement was mapped out into 3 Village Groups (VGs) and consultation proceeded with the 2 communities of VG1, slated to move first, in early 2009. The resettlement consultation process focused on: choice of new site, compensation policy, spiritual ceremonies, new village layout, new house design and updated population census, among other topics. This same process has now been repeated with VG2 and the same steps will be completed for VG3.

Livelihoods and Infrastructure: In addition to the above, issue-oriented consultation has been conducted in project villages in preparation for major activities. Expansion of water systems in the Headpond was preceded by a community forum to discuss approaches, cost and responsibility. Irrigation schemes, rice field development and other community investment and development activities all start via consultation to identify problems, priorities, inputs and goals.

Ongoing Consultation: Public Involvement is ongoing in two project areas: VG3 resettlement in Khamkeut and Xaychamphone Districts, as well as communities requesting relocation in the upper and middle Hinboun.



ABOVE: Consultations regarding the distribution of new rice fields in Nongxong

BELOW: Detailed consultations with downstream villages about relocation plans and livelihood development in 2007



Public Health



TOP: Newly built clinic in Vangthakong village
ABOVE: THPC support government outreach and immunization programs for all project villages.

The THXP expansion project developed a Public Health Action Plan in early 2008, based on a needs analysis of different groups of project affected people and knowledge gained from the experience of the EMD health program.

Agreements were signed with both Hinboun and Khamkeut District Health Offices with THXP seeking to support and strengthen local health services to target the following issues:

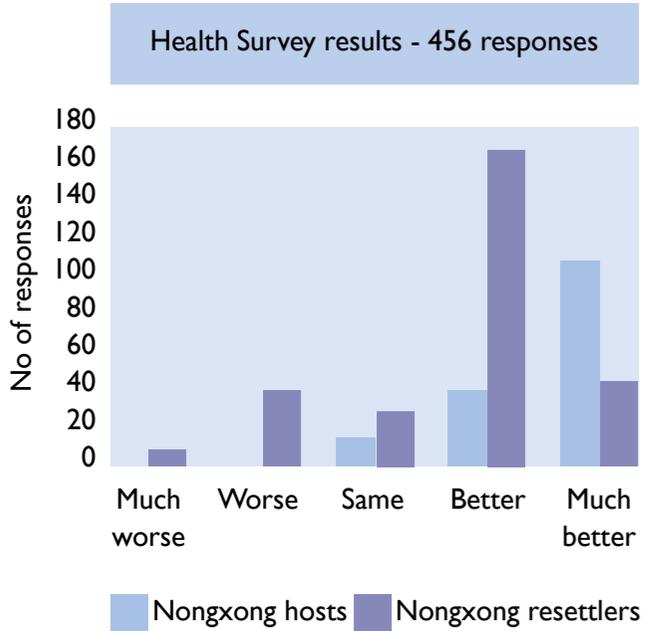
- Intensive monitoring of resettlers health status including mental health
- Undernutrition and prevalence of anemia in women of child bearing age as a specific concern.
- Free health care for villagers following resettlement (host and resettled communities)
- Preventing communicable disease including STDs and HIV/AIDS
- Reducing risk of road accidents
- Improved access to health services for all project affected people

One of the most successful aspects of the health program has been the outreach services. This covered 50 villages in 2008, 54 in 2009, 71 villages in 2010 and will be increased to cover 100 villages in 2011.

Visits include weighing of children, pre- and post natal checks, health education and the extended programme of immunization. The average rate of completed immunizations in children under 5 in Laos is around 5% and the outreach programme has led to immunization rates in the Hinboun of above 90 percent and in Khamkeut to target 80 percent in 2010.

BELOW: Patient in the newly built clinic in Phonthong





Improved access to services has been achieved with the opening of four new health centres, two in resettlement areas and two in relocation areas. Technical support is offered via the health team and now over 1500 consultations a month are funded by THXP as part of the Concession Agreement for resettlers.

Health monitors are village based since knowledge of the communities is an essential facet of the programme. A special referral programme for people with disabilities has been initiated and all resettlers are offered health screening prior to the move to identify special needs within the community. Monitoring, protein and rice support also are a vital safety net in the transitional period. Working closely with the livelihood programme the Health Team aims to integrate nutrition into agricultural extension work and make sure that the most vulnerable in the community have access to livelihood opportunities.

As part of the follow up health check for resettlers in Nongxong, villagers were asked to rate their own perspective on their health with 5 choices. The results show that 90% of host villagers feel that in general over the past year their health has improved. The same was true for almost 75% of the resettlers that participated.

THXP will continue its approach of support to the government system with additional direct inputs for the Village Group 3 resettlers. As immunization rates have improved and disease outbreaks have been successfully prevented in the project area this strategy will be expanded to 100 villages in 2011. Increasing attention is now being paid to nutritional deficits in the area, as unfortunately national rates of anemia and symptoms of under nutrition are all too common. This is particularly true among children and women of reproductive age as more data is now available about the situation via the annual health survey.



Ms Khamsee is a 50 year old woman with cerebral palsy. This has meant that she is unable to walk and has difficulty communicating. Her new home has been specially adapted for her needs with an indoor shower room and toilet that she can use independently. She is now living in Soppuan village. This was the first housing adaptation carried out for a resettlement project. The second was in Phonthong for a man who was unable to leave his bedroom after having a stroke 3 years ago.

CASE STUDIES

Father and recently born second child of a young family from a vulnerable group. The safety net provided by the THXP health programme intervened when their first child developed pneumonia. Now fully recovered and back home, so often not the case for young children in Laos.



Beri Beri is a disease caused by Vitamin B deficiency. Women who are underweight and are breastfeeding are particularly at risk and children can die if it is not caught in time. Numbness of fingers and a baby who is not thriving are classic symptoms and this case was picked up by the clinic outreach team. THPC funds treatment of this condition across the project area and this young family had their treatment paid for as part of this programme.

Education



THXP believes education is critical for vibrant communities and has a number of initiatives that expand project support well beyond the construction and furnishing of new schools as required in the Concession Agreement.

New primary schools in resettled and relocated villages have been built and furnished in cooperation with the local education offices. The relocation schedule of Phoumakneng allowed for building with local labor via a food-for-work scheme, and villagers are understandably proud of their beautiful new school. In the lead up to moving day in resettlement and relocation areas, the Public Involvement teams worked with the District Education Offices to ensure all school records were transferred, sufficient teachers were assigned to the new schools, and special arrangements for final exams that occurred during the moving period were provided. In 2010, a pilot program was launched to take an integrated approach to early childhood education in Nongxong village. In partnership with a local Lao organization, Donkoi Childrens' Development Centre, a special activity day was held for all children in the village. Later the school's teachers traveled to Vientiane to learn new techniques to develop after school activities and provide an enriching environment for their students. There are now two staff working with teachers in Nongxong, developing the library, the school garden and a timetable of regular activities and special events. It is hoped that these enrichment activities will improve attendance, develop life skills and link health to education improving understanding of hygiene and nutrition.

An education team coordinator will begin in January 2011. Planning has been carried out with both Hinboun and Khamkeut district offices to agree on activities for curriculum development, adult education, and further enrichment programmes,



FACING PAGE FROM TOP: Children in their new school in Phonthong, Children play games in the Phonthong school yard

LEFT: Children in the new Nongxong school library that they decorated themselves.

BELOW: Construction of Phonthong primary school building



while some funding has been made available for small infrastructure improvements in schools throughout the project area.

An agreement has been signed with the international NGO Save the Children, Norway, to open a preschool in Nongxong in March 2011. An Early Childhood (EC) centre will also be piloted in Nongxong and is currently under development. The EC centre will use a participatory approach to integrate agricultural extension activities, adult vocational training and nutritional support with dedicated safe play areas and child care. The enrichment programme in Soppouan will begin in early 2011 followed closely in nearby Phonthong. These will be rolled out to downstream areas gradually over 2011.

Ethnic Minorities and Vulnerable Groups



ABOVE: Vulnerable ethnic minority household dismantling their small dwelling prior to resettlement to Soppouan village

During the preparation of the Resettlement Action Plan (RAP), a small number of ethnic minority and vulnerable groups were identified. Ethnic minorities are defined as being culturally different from the mainstream culture (lowland Lao), heavily reliant on natural resources, with unique languages and traditions and having little or no political representation. In the project area the majority of people are lowland Lao or related groups but there are also a small number of Mon-Khmer groups who traditionally have resided in the middle-hills (ca. 60 households), and Hmong, an upland group (ca. 80 households). The Asian Development Bank has a specific Safeguard Policy for Indigenous People and Ethnic Minorities. Vulnerable groups are classified on a household level as households that do not have adequate labour resources, such as households with single parents and young children, elderly couples, households with disabled members, etc.

Experience from hydropower and other infrastructure development indicates that additional resources and funds are required in order to ensure that ethnic minorities and vulnerable groups improve their standards of living and become project beneficiaries. For this reason, SED has introduced a number of measures: employing ethnic minority people as staff in order to facilitate consultations with these groups, carrying out separate consultations and intense discussions on group and household levels, having an international anthropologist make regular visits and reports on status, and assigning staff specifically to follow up on these groups very closely.

This approach has resulted in:

- Consultations in local languages and as separate ethnic groups to ensure that all points of view are recorded and that the weakest groups participate
- Different house designs that are specific to the different groups
- Village layouts that group the different ethnic minorities together
- Each group carrying out rituals and religious ceremonies prior to resettlement
- Additional technical assistance for the weakest members of society during the restoration of livelihoods at the new resettlement sites – having technical staff work directly with households
- Assistance for food security (protein and rice) and additional medical support

There are considerable challenges in working with vulnerable groups and ethnic minorities. An “affirmative action” approach is new and contradicts traditional hierarchical thinking. Ethnic minorities have different socio-economic systems and cultural values from the majority, and one has to contend with stereotypes and prejudices when attempting to provide additional support. In addition, the resettlement process has established higher standards of houses, infrastructure and services for all, leveling the social hierarchy of villages to some extent. While this has pleased most people, those who were formally exploiting poorer villagers are trying to reassert the former hierarchy. SED will continue to have staff full-time at all sites to ensure that these groups receive assistance and, in some cases, protection. All ethnic minorities are monitored separately for income and education.



TOP: Hmong family returning from fields with bamboo shoots and wood fuel

ABOVE: Rice support provided every quarter to all resettler households for one year and additional support to all vulnerable groups depending on assessment of needs (Nongxong village)

Social Management Action Plan (SMAP)



ABOVE: Use of music shows at festivals to improve social awareness in the vicinity of construction areas

Construction activities of THXP mean an influx of approximately 3000 workers to a relatively remote corner of Laos. In order to ensure the arrival of construction workers is as locally beneficial as possible, while mitigating possibly negative impacts, SED has a SMAP team.

SMAP activities began in 2008, nearly one year before construction. The program was designed to enrich existing community strengths while educating everyone as to how to avoid potential pitfalls of the construction phase via a four-part approach.

Village leadership: Intensive community management mentoring and training was provided to local leaders to help them strengthen the rule of law, deal with crime and conflict effectively, and successfully advocate for the communities' interests. Nine villages are still visited each month to monitor social issues and training has been extended to local police officers as well.

Community: A broad reaching "edu-tainment" campaign was launched; regular multi-media concert/stage shows were put on in local schools and meeting halls to get out key messages about trafficking, labor exploitation, HIV/STDS, drug abuse, etc. As a result of these concerts, community members of all ages are much more familiar with trafficking risks, child rights law, methods to prevent HIV and STDS, and how amphetamines can damage health.

Youth: In the highest impacted areas, local parents and educators were asked to nominate local youth they felt were at particularly high risk during the construction phase. These young men and women were invited to participate in a three-month

weekly lifeskills class taught by a local volunteer. There are now more than four graduated classes of the lifeskills course and SMAP is still getting requests to present it again from local parents.

Service Women: Once construction activities began in earnest, there was a noted increase in bars and restaurants in the project area. Recognizing that many of these businesses may also sell sexual services, the entertainment outreach arm of the SMAP was launched with a social worker visiting venues regularly to ensure women are of age, not subject to violence, have access to condoms and know how to get medical care. In addition to these efforts to reduce harm and vulnerability, efforts by the Company and its contractors to ensure adherence to the THXP Code of Conduct are ongoing.

Once construction activities are complete, it is anticipated that social risks will decline sharply, lessening the need for the SMAP program. However, activities will be wrapped up slowly and according to the actual pace of change in the community. It is anticipated that in some cases, SMAP will conduct community consultations about the readjustment phase, unemployment, etc.



ABOVE: Training youth volunteers to inform school-aged peers about preventing human trafficking, STDs and drug addiction, as well as making informed lifestyle choices

Water Quality Monitoring



ABOVE: Water quality testing at THXP labs

Water is a key component of both the social and environmental programs of THXP. The management of water is a source of hydropower generation and is vital for impacted communities and the local environment. Social issues of health (safe drinking water), sanitation and agricultural production (irrigation, cropping, livestock and fisheries) are linked with environmental conditions, such as the physical characteristics of water and ensuring rivers are healthy and thriving environments.

The Water Quality Monitoring program for the THXP includes testing:

- Surface water in two catchments: the Nam Theun/Ngouang and the Nam Hai/Hinboun based on the new Lao standards (2010)
- Waste discharge water from construction sites and camps to ensure that water is properly treated before being discharged into rivers. World Bank Discharge Standards are applied.
- Supply water for domestic use in resettlement villages, downstream villages and camps to ensure the water is safe for drinking using the WHO standards (1993).

Since water testing is carried out during the construction and throughout operation of the new plant the Company decided to enlarge the existing facilities and establish a new laboratory with the latest equipment so that the majority of parameters can be tested internally. An independent laboratory monitors the THPC results.

Hydrological and Erosion Monitoring

Once the reservoir fills in 2011, additional monitoring will be undertaken for oxygen content at different levels (hypolimnion testing) and for any contaminants. Water Quality monitoring will be carried out during the Operation Phase.

The Environmental Unit carries out monitoring of erosion and hydrology, charting changes in river morphology, water levels, rain and in-flows, and sediment loads. The hydrological program covers five river systems: Nam Phao, Nam Theun, Nam Gnouang, Nam Hinboun and Nam Hai. Data is collected from rainfall stations in these catchments which allow the Company to manage water resources for generation and to estimate impacts of natural flood events in the area.

For recipient rivers (Nam Hai and Nam Hinboun), natural erosion was common before the first THPC project but peak-season power production in the dry season (100m³/sec) has led to additional bank erosion and sediment loads due to daily changes in water levels. The planned double of releases from the powerhouse to 200m³/sec will further impact these rivers, but changes are likely to be moderate due to more base-load (continuous) power production and less fluctuation of water levels. The Erosion Team employs a GIS-based system to record results and conduct top-of-bank and cross section monitoring along the Nam Hai, as well as photographs in some areas. Farmers utilize river banks for gardens in the dry season, capitalizing on the rich alluvial soil and ready availability of water to irrigate their plots. The erosion monitoring program ensures that changes are documented to facilitate compensation for any losses. In the first few years of production (1998-2000), compensation was paid for any loss of production and land, but farmers now place their gardens above water levels and on less steep slopes.



ABOVE: Erosion monitoring on the Nam Hai

Fisheries monitoring



ABOVE: Large catfish caught in the headpond near Ban Phonlom

The fisheries monitoring program carefully tracks changes in this key natural resource and livelihood throughout the project area. River catchments monitored include the Nam Hinboun, Nam Theun/Kading and the Nam Gnouang and tributaries. In all these areas, monitoring is conducted quarterly and compiles data on catches by local fishermen, including weight of catch, species caught, days spent fishing, and the value of sold catch. In addition to this, there is a household survey documenting fish use, that is consumption, sale and processing of fish catches, and a biodiversity survey that examines the types and prevalence of fish species in each catchment in the project area.

The 2010 round of monitoring was the first based on a revised and expanded system of monitoring meant to develop a fuller picture of this unique resource. Monitoring now allows for comparisons year on year as well as time and location specific analysis. Results indicate that fish stocks have remained very stable when comparing data between 2009 and 2010.

In late 2010, the fisheries team began a new initiative to partner with the new district of Xaychamphone (the project catchment and upper resettlement area) to develop and implement community fishery management. Using the same model as the World Wildlife Fund has successfully used in other parts of the country, the fisheries team is providing budgetary support and technical guidance for the local fisheries office as they assist ten villages to formalize their own community management plans.



ABOVE: Women fishing in the regulating pond during an outage

BELOW: Fisherman from Ban Kouang, upper Nam Gnouang, sorting fish for the Lakxao Market

Late 2010 will bring some new challenges particularly in relation to creating a fisheries plan for the newly created reservoir. This will utilize consultant inputs and will be a cooperative effort between THPC, local government and the local communities. The rationale is to take proper advantage of the fisheries opportunities created by the new reservoir but also to ensure there is adequate protection to prevent overfishing and ensure biodiversity sustainability.



Construction Monitoring



ABOVE: Dust monitoring along roads and near construction sites to ensure compliance to international standards
FACING PAGE: Waste management facility, from where many items are recycled

Construction Monitoring for the Project is conducted by the Environmental Unit in consultation with the Technical Division. The team monitors all construction sites, camps and other utilized areas, currently 42 locations in all. The team produces documentation required to ensure project staff, contractors, and sub-contractors maintain the high environmental standards of the project. A total of 53 out of 55 site inspection reports (requiring correction or intervention) filed in the year were successfully closed at the end of 2010 and 14 of 16 non-compliance reports were satisfactorily closed.

Typical areas requiring follow up with contracts and correction are waste management, storage of hazardous materials, adequate sediment control, management of dust and noise near villages and additional losses of land and production for compensation. Contractors have installed appropriate waste water treatment systems, bringing contractor camps and sites into compliance with contract standards. Additionally, erosion prevention on high slopes was also addressed both by the contractors with the technical guidance of the Monitoring Team as well as internally in areas disturbed by THPC.

The team is currently focused on maintaining the high standards of environmental protection previously established and is looking to strengthen coordination with the Technical Division for improved responses from contractors. 2011 will also see the start of planning for site closure and rehabilitation of sites.

Waste Management

The waste management program consists of two main components. The first one deals with the management of waste generated by the construction of the THXP and the existing plant. There was a need to construct a new site but also take into consideration the long-term needs of Company and the local communities, as well as the needs of the contractors during construction. The Company financed the construction of a large cell which is lined with high-density plastic and connected to a series of settling ponds in accordance with international standards. Local labour have been hired for sorting waste and an extensive awareness program for staff, contractors and local communities has been launched to promote segregation of waste at source, allowing for a system of recycling of plastics, glass, paper and metals. The goal is to turn over the management of the landfill site to a local entrepreneur who can run the operation as a viable business through the collection of fees and recycling waste.

The second component relates to the introduction of village waste management through simple waste pits and recycling for households as well as awareness about waste management for villagers and for schools. This work will be initiated in resettlement villages and near construction sites in 2011. Changing attitudes to waste management will be a long-term challenge given prevailing habits in rural areas.

THXP also has a hazardous waste management plan that has been worked out with contractors. This plan ensures that hazardous waste is disposed of in an environmentally acceptable manner or stored in an appropriate way. Examples include the burning of used oil and hydrocarbons at high temperatures in industrial furnaces in a local concrete factory and selling of used tires for retreading.



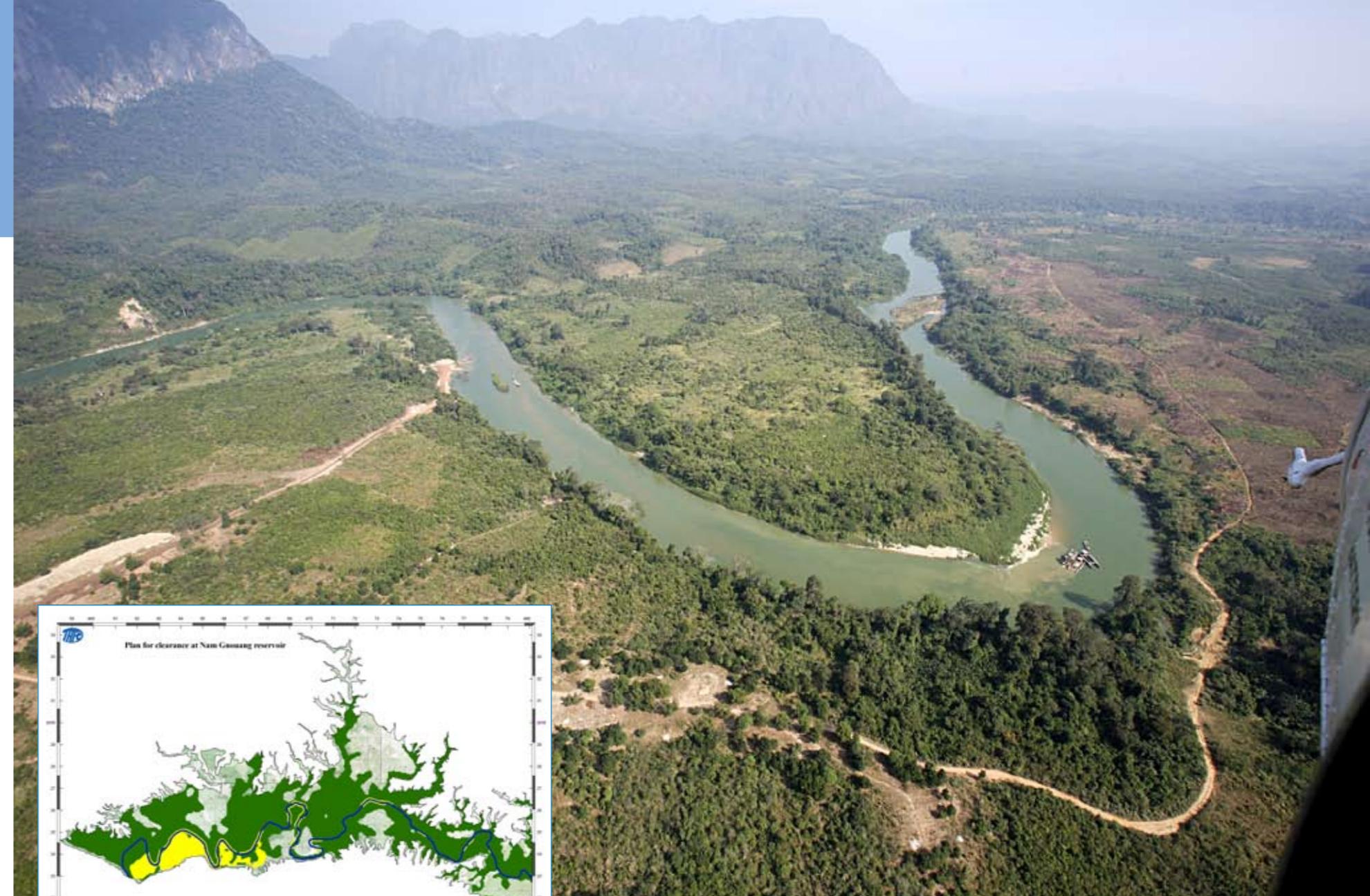
Biomass Clearance



ABOVE: Removal of valuable timber and other biomass near the NG dam

Biomass Clearance is being conducted by THXP to ensure better water quality, better fishing possibilities and higher aesthetic value than not removing vegetation that will be permanently submerged by the reservoir. Without the removal of biomass, decomposing organic matter in the reservoir will consume most of the available oxygen, resulting in poor water quality. Thus clearance will foster the development of healthy reservoir fisheries. A detailed study was carried out on the land use of the future reservoir and less than 2% of the land was classified as primary forest, the majority being secondary growth and used for rotational swidden (slash and burn) agriculture.

THXP removed approximately 407 hectares of biomass in 2009-10 from low areas located close to the new dam. The first phase of removal concentrated on lands below 420 masl that could flood during the construction phase. In the second phase of removal, currently underway, biomass will be removed to the 435 masl level. The work is being completed by a number of teams, including the local army and villagers. In all approximately 1500 hectares will have been cleared before impoundment of the reservoir commences in June 2011.



ABOVE: View of future inundated area behind the NG dam

Environmental Conservation Programs



ABOVE: Degraded catchment area used for swidden (slash and burn) agriculture

The area above the Nam Gnouang reservoir has been used extensively for swidden agriculture for at least three generations. As a result, there is little primary forest and considerable erosion. THPC has proposed a catchment protection program that will decrease erosion and silt in the reservoir, and improve water quality for fisheries. In addition, the planting of trees and rehabilitation of selected areas will more than offset the losses due to flooding and construction.

THPC is working with Wildlife Conservation Society (WCS) on a number of conservation programs and environmental awareness in the project area, including the establishment of a Protected Forest above the reservoir in areas abandoned by resettlers. A number of consultations with relevant government bodies were initiated in late 2009 and the finalization of boundaries and institutional arrangements is being included in a Management Plan. This plan includes:

- Formal status of the proposed Nam Gnouang South Protected Forest Area (PFA)
- Establish responsible institutions at the provincial and district levels
- Patrolling and enforcement by Forest Patrol Units, especially core wildlife zones
- Surveys of flora and fauna by local and international specialists
- Conservation awareness and forest management plans for surrounding villages
- Linkage at institutional and patrolling levels with no-fishing zones
- Reforestation as an aid to natural generation with indigenous tree species

Work will start in earnest once all resettlers have moved out of the area by 2011.

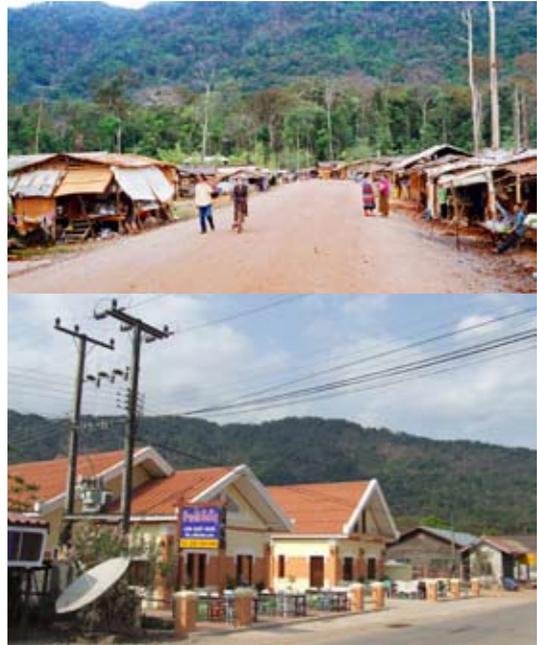


LEFT: Environmental Awareness Show for schools using the WCS Hornbill mascot
ABOVE: Wildlife enforcement patrols in National Protected Areas adjacent to the Project

BELOW: Environmental Awareness games for students



Economic Development



TOP: Nahin in 1995, villagers and camp-followers yet to be provided with proper services

ABOVE: Nahin/Khounkham village in 2010 with hotels and restaurants, paved roads and electricity

Hydropower can be a catalyst for economic development. Since the start of the first power generation in 1998, and even during the construction of that project, there has been considerable change in the project area. Photos on these pages reveal how much change has taken place as a result of completion of national and rural roads, improved housing, well functioning schools and health centres, water supply, livelihood support, market access and employment opportunities. THPC has contributed directly and indirectly to these positive outcomes throughout the two construction periods with thousands of local people employed as semi-skilled and unskilled labours and service opportunities for villagers in the vicinity of construction areas.

After construction of the first project, the village of Nahin, whose name was changed to Khounkham (“Golden Opportunity”), continued to grow in terms of population and economic activity. Many hotels and restaurants now cater to the tourist industry as well as providing accommodation for staff and workers for the Expansion Project. THPC has also established and supported schools and a health centre for more than 10 years for communities in the vicinity of the powerhouse where more than 30 families reside and work for THPC.



Monitoring and Disclosure



ABOVE: Villagers visiting the THXP Public Information Office

The following activities and methods are utilized to monitor and disclose information regarding the Project:

- SED units and field staff collect a range of specific data as part of the ongoing implementation of activities and assessment of results. This is particularly important for livelihood restoration and health status of resettlers.
- SED carries out an Annual Survey in-house together with government staff, covering all project villages in terms of socio-economic development and health. The socio-economic survey is a random sample of 25% of households with a minimum of five households per village interviewed. The health survey combines a variety of data from ongoing outreach visits and a cluster survey of selected villages in each zone.
- The Government of Laos, through the Water Resources and Environmental Authority, monitor environmental and social programs regularly. Provincial and district authorities monitoring project performance and take part in joint-planning in the form of the Resettlement and Restoration Committee (policy level), Resettlement/Relocation Management Units and District Working Groups.
- The Lenders' Technical Advisors (LTA) review progress on a quarterly basis and make recommendations to SED so that the project remains compliant with the Equator Principles.
- The Lenders themselves, including the Asian Development Bank, make annual visits to the project area and discuss progress and any outstanding issues with SED management.
- Finally, the License Agreement states that the Company must have an external monitoring mechanism to verify compliance and to ensure that the Project is fulfilling all its obligations as outlined in the Agreement. A Panel of Experts will be formed to carry out this role.

The Concession Agreement commits the company to achieve specific income targets of over 1,400-1,700 USD per household per year. The company designed a set of additional human development outcome indicators to complement the income target, in order to ensure monitoring presents a full picture of quality of life in affected villages.

BELOW: Lenders' Technical Advisors visiting project areas



THXP Desired Outcomes	Outcome Indicators Used to Measure Achievement
Project HHs have a good standard of living	Income Target
Children in severely affected villages attend primary school	Primary school enrolment rate
All project children enjoy improved access to education	Percentage of school goers in appropriate grade level
Project children are healthier than before THXP	Infant Mortality Rate Diarrheal disease prevalence in young children Wasting prevalence in 6-60 month olds
Project HHs are healthier	Anemia rate in women of reproductive age
Project HHs have access to medical services	Primary Health Care Accessibility Rate
Project HHs are not left more vulnerable by THXP (no increase in food insecurity)	Percentage of HHs with food insecurity Average number of months in the past year that food insecure HHs experienced rice shortage Percentage of HHs using high-risk coping mechanisms to overcome food shortages
Project HHs have convenient transportation, access to markets, etc.	Percentage of HHs in villages with year-round road access
Project farming HHs have adequate production land	Percentage of HHs holding at least 1 ha of wet season -or- irrigated rice fields Percentage of HHs that own agricultural land
Project HHs have domestic electricity	Percentage of HHs with electricity counter installed
Project HHs have access to sufficient & safe water	Percentage of HHs with year-round access to improved water source
Project HHs enjoy sanitation	Percentage of HHs reporting regular latrine use
Women's labour does not increase as result of project	Percentage of HHs reporting women responsible for fetching domestic water

Annual Survey Results

Three years of the annual survey had been completed as of the end of 2010. The results for each indicator are summarized below:

SED Outcome Indicators				
THXP CORE HUMAN DEVELOPMENT INDICATORS:				
	2008 Baseline	2009 Results	2010 Results	Project Targets
Percentage of school goers in appropriate grade level	24.4%	17%	31%	More than 40%
Wasting in children (aged 6-60 months)	4.8%	6.9%	6.6%	Less than 4%
Anemia amongst women of reproductive age	52.6%	45.4%	34.8%	Less than 30%
Diarrheal disease prevalence in young children	9.2%	12%	8%	Less than 5%
Primary Health Care Accessibility Rate	31%	35%	43%	More than 80%
Percentage of HHs with food security	58.6%	65.4%	68%	More than 80%
Average number of months HHs experienced rice shortage	2-3 months	2-3 months	3-4 months	Less than 1 month
Percentage of HHs using high risk coping mechanisms	39%	16%	17%	Less than 10%
Percentage of HHs that planted at least 1 ha of rice	45.3%	52%	41%	80%
Percentage of HHs that own agricultural land	87.7%	87.6%	91.4%	More than 90%
Villages with year-round road access	26%	42%	60%	More than 50%
Percentage of HHs with counter installed	45%	52.5%	67%	More than 75%
Percentage of HHs with year-round access to improved water source	15.6%	16.5%	27.7%	More than 50%
Percentage of HHs reporting regular latrine use	54.6%	56.6%	62.9%	More than 80%
Percentage of HHs reporting women or girls responsible for fetching domestic water	82.6%	85%	71%	Less than 50%

SED Outcome Indicators				
THXP INCOME TARGETS:				
	2008 Baseline	2009 Results	2010 Results	Project Targets
Income for Zone 1- Reservoir	10,921,884 Kip	11,660,210 Kip	24,327,503 Kip	N/A
Income for Zone 2: Headpond	9,133,532 Kip	8,364,094 Kip	13,498,853 Kip	14,690,823 Kip
Income for Zone 3A: Nam Hai and confluence with Nam Hinboun	10,093,269 Kip	8,695,864 Kip	22,185,004 Kip	14,690,823 Kip
Income for Zone 3B: Upper Nam Hinboun	8,049,783 Kip	9,934,008 Kip	29,687,332 Kip	14,690,823 Kip
Income for Zone 3C: Middle Nam Hinboun	8,568,030 Kip	6,035,600 Kip	12,481,338 Kip	14,690,823 Kip
Income for Zone 3D: Lower Nam Hinboun	14,944,350 Kip	9,579,030 Kip	18,303,768 Kip	18,102,560 Kip
Income for Zone 6: Host Villages and Resettlers (as of 2009)	16,535,922 Kip	9,138,480 Kip	23,605,857 Kip	18,102,560 Kip

1 USD = 8,000 Kip (December 2010)

Looking forward, the project will need to establish a clear mechanism by which to certify villages as completed when they are shown to have reached the income target. This will need to be clearly presented to the Government and local community and an exit strategy for the winding down of activities must be generated through consultation to ensure no dips occur after the withdrawal of support.



ABOVE: Ground Breaking Ceremony for the new Powerhouse in Nahin

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Design and layout

design-for-development (d4d), Vientiane, Lao PDR
email: jim@jimholmes.co.uk



ABOVE: Maintaining forest covered watershed area

LEFT: Vegetable gardens in Nongxong

BACK COVER: New home in Vangthakong village



THEUN-HINBOUN EXPANSION PROJECT

Social and Environmental Division

THPC, P.O. Box 3382, Vientiane, Lao PDR

Email: sedadmin@thpclaos.com