
9th IAG REPORT

CHANGING LAND, CHANGING LIVES



*Report on the 9th Visit of the International Advisory Group to the
Nam Theun 2 Hydropower Project - November 8-20, 2009*

April 2010

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SOCIAL, ENVIRONMENTAL, GOVERNANCE AND FINANCIAL
ISSUES IN THE NAM THEUN 2 HYDROPOWER PROJECT, LAO PDR

Wellington, Manila, Ottawa and Vientiane

April 2010



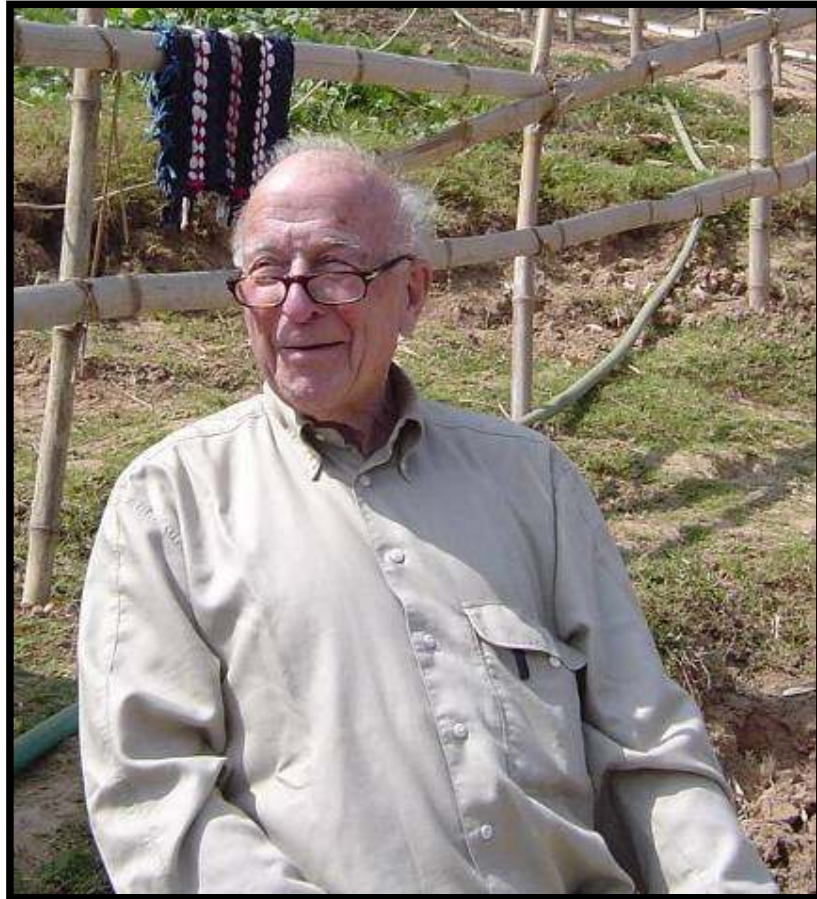
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Professor Dick de Zeeuw

(1925-2009)

The International Advisory Group for Nam Theun 2 dedicates its 9th mission and report to our dear friend and Convenor Dick de Zeeuw. He died as he lived -- on a field trip to Lao PDR to promote agricultural development for improving the lives of rural Lao. His dedication, inspiration, and generosity of spirit are deeply treasured and will be long remembered.

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

Introduction: Basis for Mission

The International Advisory Group on the Nam Theun 2 Hydropower Project (IAG) visited Laos on its 9th field mission from 8 to 20 November 2009. The main objectives of the Mission were to take stock of progress on livelihood development for the communities affected by the Project, to identify issues around the institutions for long-term support and protection of these communities and to review the government's mechanisms and plans for use of its revenues from the project. Dick de Zeeuw, the first Convenor of the IAG, and its inspiration, passed away in February 2009. The current IAG members are Rob Laking, Convenor, Jacques Gérin and Mary Racelis. Lennie Santos-Borja acts as Specialist Consultant and Secretary. Emil Salim, a founding member, continues in an advisory role.

The Mission as usual spoke to many government and company officials and other stakeholders. We also attempted a more structured inquiry in the villages affected by the project, on the plateau, in the project lands and downstream on the Xe Bang Fai River (XBF). We found little conflict between what overall surveys of livelihoods seem to be saying and what we heard in the villages; but the more probing group discussions have sometimes brought out issues or problems the surveys were not able to uncover.

Current Status of Project

Effects of the project works on the land

The dam across the Nam Theun has now been completed and the reservoir has filled. The construction works that began in July 2005 were almost complete and the hydropower facility, in the final testing stage when we visited, has now started commercial operations. The first full cycle of filling and drawing down the reservoir – important to the development of the drawdown zone (DDZ) with its potential for productive land - will however be delayed for a full season to late 2010. Testing of the powerhouse is already resulting in sporadic releases of water through the canal and into the Xe Bang Fai.

The resettlement of 6,300 people in the new villages on the Nakai Plateau and the construction of their houses and community assets are nearly completed. Significant issues for the villages and the Government of Lao PDR (GOL) itself will be the ongoing maintenance of community assets and developing suitable plans for disposal of solid waste from the plateau villages.

The works have left a huge footprint on the landscape at the bottom of the escarpment, bringing both restrictions and opportunities to local communities. The powerhouse, regulating pond and canal have created restrictions for villagers getting to their land and risks from the deep fast-flowing water of the canal. On the positive side, water will be supplied from the canal for irrigation, which may help to meet villagers' requests.

Decommissioning and rehabilitation works have started in some of the construction sites. The main issues are the lack of topsoil to replace that removed

from construction sites, unauthorized re-occupation of sites and proper disposal of waste, particularly hazardous waste. Further work is still needed in the restoration of forest areas.

As a result of the higher dry season flows in the Xe Bang Fai, water quality may deteriorate, river bank gardens will be lost, river banks may erode more quickly, dry-season river crossings will be reduced, and irrigation might be affected.

The physical works required for the Water, Sanitation and Hygiene (WASH) program are nearing completion. Most of the boreholes had been drilled and over 90% of the hand pumps installed; about 85% of the planned household toilets had been constructed. NTPC reported that all riverbank gardens registration had been completed by June 2009, that is, over 4,000 riverbank gardens with over 3,000 households (HH) involved. Consultation was completed in January 2010 and the compensation process has already started. A program was well underway to modify 19 existing irrigation pumping stations mounted on rafts on the river to cope with changing water levels. Further erosion to river banks may require additional re-siting or replacement of existing community assets.

The GOL has built 15 water gates on the lower XBF in an effort to stop back-flooding up the tributaries in the rainy season and the NTPC is investigating the feasibility of constructing a further four gates. There is further comment below on the efficacy of this approach to flood management on the Xe Bang Fai.

Impact of changes on natural resources

The landscape in the plateau has completely changed with the filling of the reservoir, which now lies at the doorstep of the resettlement villages. Reservoir fishing has become a major source of income for many villagers. The reservoir offers a navigational highway to the protected wilderness areas on the other side of the water. It is also an attractive resource and access route for people from outside the Plateau. During the next year the drawdown zone can be fully surveyed and allocated for cultivation and grazing. Some areas in the drawdown zone were already being cultivated.

Recommendation 9-1.

The IAG recommends that given the multiple uses that are emerging within the reservoir, the GOL and NTPC develop a policy in consultation with the affected villagers to manage these activities and a management plan and regulations to ensure conformity with the policy.

Reservoir fisheries

The quantity of fish supplied by the reservoir from November 2008 to November 2009 ranged from 80,000 kg/month in June to 160,000 kg/month in January with great variance in-between. (NTPC's Monthly Progress Report, December 2009). The boom in fish supply is expected to decline but it is still too early to predict when. Current estimates of catch do not give a reliable estimate of the underlying trends in fish stocks.

Recommendation 9-2.

The IAG recommends that in order to provide a more accurate estimate of fish productivity and fishing pressure in the reservoir, NTPC monitor the catch

per unit effort in addition to the Stock Assessment Program. Such information will facilitate fisheries management such as determining the need for closed seasons and if necessary the establishment of fish sanctuaries in suitable areas in the reservoir to serve as breeding grounds for different fish species.

Not all of the biomass was removed from the reservoir before inundation in April 2008. Their decomposition, the geochemistry of the inundated land and the prevailing weather conditions highly influence the water quality of the reservoir and those of the receiving waters downstream. There are still potential major risks to water quality and fish life from decomposing biomass, thermal stratification and algal blooms.

NTPC seems reluctant to release the raw data from its water quality monitoring because it would not be comprehensible to a general audience. We think it is better in the interests of transparency to err on the side of release.

Recommendation 9-3.

The IAG recommends that:

- 1) GOL and NTPC, in consultation with the World Bank, establish a joint protocol on public disclosure of monitoring information.**
- 2) The information from the water quality program be made available with adequate explanation for understanding and interpreting data and including, where appropriate, measures taken to meet guidelines and regulations. Aside from the water quality status report in NTPC's E&S Monthly Progress Reports provided to GOL, LTA, POE, IAG and IFIs, a concise and simple (non-technical) version should be disseminated to other stakeholders including civil society groups.**
- 3) GOL should send the EMU staff to advanced local or foreign training courses on water quality monitoring, assessment and management to further equip them in doing independent assessments and review in the future.**

We heard reports that the occasional pulses of water coming downstream from the project during testing have caused some pumps to overturn and occasionally limited normal access to river banks and crossings. The water releases were also blamed, probably unfairly, for back-flooding on the Xe Bang Fai during the last rainy season. When the project starts its commercial operation, dry season river levels will go up and down on a more or less weekly cycle, due to varying demand on generating capacity. Both the additional water and its uneven quality will have impact on aquatic life in the river.

An Aquatic Environment Laboratory (AEL), jointly managed by NTPC and EDF, started operation in mid-2008 to support water quality monitoring activities. Ultimately, this laboratory could play a role in attracting and training students who can contribute to knowledge and management of Lao's great water resources.

Recommendation 9-4.

The IAG recommends that:

- 1) The Aquatic Environment Laboratory (AEL) should consider establishing partnerships with institutions of higher learning so that its facilities can contribute to educating and training students in the**

fields of limnology, biology, zoology, chemistry, hydrology, environmental science and environmental management as part of their preparation for monitoring water quality and performing environmental assessments.

- 2) AEL through NTPC be engaged in environmental education activities by providing public display of water quality information and of aquatic life in the reservoir.**

Support for changing livelihoods

The plateau: The allocation of boats and gear for reservoir fishing is being accompanied by training on all aspects of catching and processing fish. NTPC also plans to put up fish landing and mooring places for each resettled village. A fish landing fee is collected in Ban Thalang of which percentages are allocated for the Reservoir Fishery Management Committee (RFMC), the Village Development Fund and the District Agriculture and Forestry Office.

There have finally been some encouraging results from agriculture support, with significant increases in rice yields. Different systems of soil enrichment have been applied, fertilizers are distributed to the villages and composted organic fertilizer is also being encouraged. These techniques are supported by extension services and a program to train trainers to sustain capacity building activities. Small-scale irrigation systems are planned for 221 sites, to be installed by the commercial operations date (COD) and operated and maintained by village water user groups.

There has been a significant loss of grazing areas as a result of reservoir impoundment. Villagers are being encouraged to grow fodder crops to support more intensive grazing on the remaining land. This is supported by on-the-job training for the cattle raisers. The drawdown zone could also support fodder crops such as maize.

The full demarcation of individual and community land will be assisted by a Participatory Land Use Planning Process (PLUP), just now getting underway with pilots. Allocation of the Drawdown Zone will be a major task of the PLUP.

Project lands: In project lands villages, villagers again raised compensation issues but the grievance process appears to be winding its way to a conclusion. The Company is aiming to finalize individual household compensation and restoration plans during 2010.

Downstream: Like the Project Lands Programs, the Downstream Program (DSP) is also designed on a compensation and restoration principle, with assistance capped to that required to fulfill this obligation. Nevertheless, the DSP has in effect had a development orientation including capacity-building activities and specific supporting services. The Company's Environment and Social (E&S) team has been quite innovative in the way it has approached this task, particularly in adopting a consultative and participatory approach to working with villages. The NTPC approach of establishing service provision villages and households can help develop local leadership of innovation. A Fisheries Co-Management program will encourage decentralised management by resource user groups.. The Community Coordination Team appears to be working on a participatory development model and is trying to strengthen Village Development Committee (VDC) structures and systems. We commend this community-based approach.

The Village Income Restoration Funds (VIRF) are being rolled in over six phases of villages. Of the first three phases completed, over 70% of households have participated but the rate varies a lot both by income strata and by village. The Community Team is trying to find out why.

The VIRFs are a form of compensation and restoration but in fact are being used as a village development fund. They make small repayable loans to households in principle for livelihood-related activities, but villagers say they borrow for other reasons such as medical needs, festivals and consumption. NTPC will have no role in helping develop VIRFs as longer-term facility but a small, village-based credit facility would seem to fill a need.

Recommendation 9-5.

The IAG recommends that the World Bank, representing the International Financial Institutions (IFIs) supporting the NT2 Hydropower Project, and the GOL discuss the means by which the present VIRFs might become the platform for a longer-term sustainable source of micro-credit for village development.

The GOL wants to mitigate the impact of back-flooding on Xe Bang Fai tributaries with water gates. Based on past experience, there is a risk that the gates will not be effective, may hamper fish access to spawning grounds and slow drainage. The Company is to test wet season activities that can co-exist with floods, improve yields and income from dry season crops and improve natural fisheries management. The IAG endorses these strategies but the rehabilitation of the floodgates seems to be a *fait accompli*. The capacity of the Provincial Government and local Water User Associations to operate and maintain the gates properly must be strengthened.

Recommendation 9-6.

The IAG recommends that:

- 1) NTPC and GOL continue to address flood protection issues, primarily by helping villagers to adapt and to eventually benefit from the flood.**
- 2) GOL identify the requirements for strengthening provincial and local community capacity to manage flood protection and management in the Xe Bang Fai basin.**

Socio-Cultural Issues Affecting Livelihoods

This section discusses both the results of surveys of living standards and livelihoods and the IAG's focus group discussions (FGDs) with several groups of villagers as well as semi-structured individual interviews conducted by the IAG members assisted by their Lao research partners. It is impossible to do justice to the discussions in a brief executive summary and only a few conclusions are presented.

Living standards and livelihoods on the plateau: a survey picture

A first, cautious appraisal of changing living standards emerged from a review of the first five living standard surveys (LSMS) on the plateau since 2006. Households seem to be getting "less dependent on project incomes and increasingly earning livelihoods from sustainable sources"; and incomes from fishing had "clearly increased". Agriculture apart from rice, forest products and livestock and off-farm

activities overall (given the measurement problems) make a relatively small contribution to household consumption in kind or to cash income. In general, it appeared as if the current Lao poverty line of \$2 a day had been regularly exceeded for all five surveys on an expenditure basis and the median figure was probably \$4. On an income basis, with technical caveats, probably median income was at or near the \$2 poverty line. The difference probably reflects the net subsidy by NTPC which seems still to contribute about 40% of consumption to the median household. Vulnerable household median consumption is also at or about \$4 but subsidy rates for vulnerable households are probably higher than the overall median.

The reasons for these variations seem to include village location; that some ethnic groups seem to take up new activities more rapidly than others; shortage of family labor which is often connected to “vulnerability” such as a single adult head of household or elderly persons living on their own; and previous assets. There is some sketchy evidence that women experiment more with new livelihoods than men.

To some extent, we assume that vulnerable households will be supported by their extended families or clans, who provide the basic social safety net for rural Lao. But company and government inputs should be concentrated on this group who may otherwise be left further behind in the race for higher incomes.

Consistently over 80% of LSMS respondents have said that life is much better than it was before resettlement, and currently hardly anyone is saying it is worse. What resettlers valued most was better housing and infrastructure, followed by health and education. The clear dominant concern in the last two surveys, both conducted since reservoir impoundment in 2008, has been “access to land” and probably relates to the loss of land for cultivation and grazing.

Recommendation 9-7.

The IAG recommends that NTPC and GOL support development efforts focused on vulnerable households that are taking up new activities less than others.

Focus Group Discussions in Villages

The focus group interviews elicited qualitative information rather than the quantitative data normally associated with large surveys. The two data-gathering techniques are complementary. With some exceptions, the more nuanced FGD outcomes match fairly closely the findings of the NTPC’s LSMS and its Family Books (FBs).

In the future, building a feedback loop between the survey and the more open ended individual and group interviews in villages would be advantageous to help explain survey responses and to suggest lines of enquiry in village interviews.

Recommendation 9-8.

The IAG recommends that NTPC disseminate LSMS and FB analysis widely, to encourage other researchers to probe more deeply into issues that have been identified using more qualitative and participatory methods and to offer suggestions for probe questions for future LSMS.

Resettled Forest Swidden Cultivators on the Nakai Plateau

The vast majority of those interviewed believe their lives are easier and that they are better off overall as resettlers compared to their former village. Both men and women value the opportunities now available to their children. The villagers visited reported that no families had left. In fact, relatives from outside are moving into their households. A number of villagers stated they would not return to their former villages even if these were not flooded. At the same time they sense that the former comfort and security of managing a swidden forest-farm ecosystem they understood are no longer possible in the new and unfamiliar setting of their agriculturally-based commercial market ecosystem.

Aspects of the new life most attractive to resettler men and women include their large and beautiful Lao-style houses, water, roads and electricity. The rapidly accelerating desire for consumer items can be expected to fuel households' motivations to earn more cash through market transactions. As elsewhere in the world, this will almost certainly lead to increasing disparities in income and well-being within and among villages.

Women praise the easy access to potable water through nearby hand pumps, health clinics, schools, and pre-schools. Household celebrations around weddings and funerals bring people closer together and enable them to help one another.

A concern regularly and strongly expressed is that households cannot be certain they will have enough rice to last them throughout the year. Although NTPC technicians try to convince them that they will make greater profits if they plant less rice and instead put in high value crops and use the resulting profits to buy rice, most householders remain uncertain or skeptical.

Some of the longstanding fears of not being able to assure year-round food security have been offset by the reservoir fishing bonanza. Households have readily adapted to this new livelihood source. Nonetheless, apprehensions were expressed as to whether this windfall will continue over the years.

While hunting and trapping restrictions on forest use are deeply felt, settlers can enter the forest for non-timber products (NTFPs) lessening their sense of discontinuity. Enforcement of the new government anti-poaching rules has led to resignation that they must comply with the government's encroachment rules.

The lessened dependence on spirits to sustain their lives, although still integral to their culture, may be interpreted as part of a modernizing process, but at the same time it may signal a shift toward greater dependency on the Company and the government. This raises yet again the issue of sustainability of these evolving livelihoods once the NTPC withdraws and the government is left to support resettler development. The villagers are well aware of this prospective situation, which brings added anxieties.

Although most villages harbor a mix of ethnic groups, no expressions of alienation, discrimination or animosity surfaced during the community discussions. Some leaders remarked that certain ethnic groups seemed to adapt better to the new economy than others.

The women we spoke to were eager to help fill the income void now that their family cannot grow rice to accommodate year-round consumption, and they see trading, mainly a women's activity, as best able to make up the difference. But they

say they need support through training directed more towards them and made available in the villages. At present they perceive a bias towards selection of men for off-site skills training which is sometimes only partly relevant to their communities, and which is not shared with the women.

The resettler transition into risk-taking and committing to the uncertain market economy will take predictably long unless women achieve their wish for support to move into it more rapidly, along with opportunities for youth. Their eagerness may stem in part because they are now spared the long walks for water, intensive forest cultivation and child care, thereby enabling them to venture into other productive activities.

The typical household strategy especially on the Plateau appears oriented around the insistence on assured food security through rice cultivation. This may explain settler appeals for more land to expand their rice supply in keeping with the traditional subsistence outlook. The fishing windfall, which parallels the hunting and gathering regime of the open forest, has encouraged households to adapt quickly to the new ecosystem. It is fairly simple and easy to learn and brings enough cash sales to allow the purchase of rice and other household needs. While these households still rely on the subsistence economy outlook that served them so well in the past, the fishing income is now modifying this orientation so as to incorporate commercially-based livelihood into their cultural repertoires. The fishing enterprise, however, is easier to master than commercial farming of unfamiliar crops in barely fertile land with limited water supply. In the long run, adaptation to the market with less emphasis on the subsistence orientation will likely emerge firmly only with the next generation.

We suggest here some guidelines from a social anthropology perspective for future participatory gender- and age-sensitive planning and evaluation with communities affected by the project. Most of these guidelines apply as well to affected persons in Project Lands and Downstream.

- Technicians need to learn how to work with village households in an iterative, mutual-learning style.
- Some women said that technicians should resolutely avoid “flower reports,” or accounts that say only favorable things about the program
- Involving the villagers in participatory decision-making processes instead of in “blueprint” approaches or “one-size-fits-all” will help.
- Enhancing the skills and capacities of women offers promising results, since they are the ones most eager to venture into new experiences beneficial to their families. Since women may not be accustomed to speaking out in public, it is important to consult them in ways that bring out their voices and views.
- Adolescents and young adults – male and female -- embodying the next generation are more likely than the current one to move with confidence into the modern commercial economy. It is important they gain at least a high school education, with a curriculum that responds to the new rural economy.
- Social scientists and non-government organizations (NGOs), including Lao NGOs, can help greatly by carrying out studies and programs identified by

the resettlers as important. The knowledge acquired by advocacy NGOs and village-level academic researchers should be used in planning processes. Greater interaction is imperative between these groups, on the one hand, and the physical planning, management and engineering technology staff, on the other.

- Careful monitoring of fish availability is needed in the event of declines in the supply, and alternative income sources identified, otherwise many families may revert to the strictly subsistence orientation, which becomes a recipe for poverty.

Recommendation 9-9.

The IAG recommends that the GOL and NTPC note our suggested guidelines and incorporate them into their processes for participatory planning and evaluation with communities affected by the project, with particular attention to women and young people.

Agro-forestry farmers in the project lands

Those interviewed believe that overall, the dam's positive aspects outweigh its negative consequences. They see the trade-offs as worth it in improved livelihood opportunities, basic services and infrastructure access. Women specifically point out that even though the new land and market economy mean more work for them, they welcome it because they and their families stand to benefit.

Household members are not sure they can master the market satisfactorily to sustain new economic ventures and compensate sufficiently for rice shortages that imply food insecurity. They hope their children will prosper as adults but remain uncertain this will happen. Their household strategy focuses on expanding their land holdings as much as possible to achieve the year-round rice need. The alternative of buying rice to address the shortfall instead of growing their rice needs is already happening and generating some tensions. Some may see the cash outlay as depriving the household of basic needs while others may see rice purchase as freeing the land for crops of higher market value.

Parents in project lands welcome new opportunities from more productive agriculture but express concern that the lack of a high school nearby and scarce wage work for the young people will diminish their children's life chances. Younger household members have limited learning opportunities for modern commercial agriculture as well as trading and other entrepreneurial activities. Women appear to have the greatest flexibility and interest in expanded economic activities that build on their existing knowledge, risk-taking and innovative inclinations. They harp on the need for training and their desire to participate in household and village decision-making to be able to tackle this new mode of living. Their concern about continuity once the Government takes over, adds to their litany of worries.

We recommend the following guidelines for further human development in the Project Lands:

- Programs of gender- and age-sensitive community development, credit, and technical efforts focusing on the village level aimed at enhancing newer income sources should be established and built into district-level governance now for continuity of support.

- The development of a young cadre of competent agriculturists, fisheries and livestock technicians will be greatly assisted by establishing high schools with easy access to training in agriculture and technology.
- Women need to be assisted to engage more intensively in the new market economy through improved skills, personal empowerment, enhanced participation in decision-making and better roads and transport to town.
- District and provincial officials require intensive capacity training; and institutional reforms are needed for the government to take on the functions that will be phased out by the Company.

Recommendation 9-10.

The IAG recommends that the GOL and NTPC note our suggested guidelines concerning farmer households in the project lands, taking proper account of gender and age, and incorporate them into their processes for participatory planning and evaluation with the men and women of communities affected by the project.

Agricultural farmers of the Xe Bang Fai and hinterland

The changes in the Xe Bang Fai had not yet been observed throughout the entire annual agricultural cycle and villagers voiced only a few complaints. These stem from faulty or non-adaptive technology, as in fishpond cultivation or pump arrangements. Clear benefits are highlighted as additional water from the river and wells support a second rice crop. This development has brought about rice security in several households along with surplus rice for sale. It has also helped generate or enhance added income sources. The sanitation activity is likewise valued.

The Village Development Fund appears to be taking off, although still patronized more by men than women. Though there were never formal restrictions against women borrowing from the Fund, the limitation of loans to only one family member had the effect of privileging the men and marginalized women as potential borrowers. Women's protests of the previous year have led to loans now being accessible to more than one member of a household. This has enabled additional numbers of women and even some young people to seek formal access to credit for productive ventures. Continuous training in the new income generating schemes being introduced or upgraded would give innovators the experience and confidence they need to take business risks. This applies especially to women, whose traditional roles as household laborers or farm workers compromise their development as traders and entrepreneurs.

To questions on their worries and dreams, one group of women drew a composite picture: concrete irrigation canals that reach every field, enough drinking water for everyone with piped water in every house, all roads paved, a health center, and a complete elementary school so that all children will know how to read and write and get better jobs in future.

We recommend the following guidelines for future development downstream:

- It is important to monitor the effects of changes in land and asset patterns, focusing separately on household unit earnings, on male and female-disaggregated earnings, and the earnings of enterprising youth, and to

ascertain how those affected think about their household's present and future well-being.

- Proponents and trainers of new market-oriented activities should spend more time in the villages interacting with local innovators. They can also offer follow-up assistance to identify interim problems and opportunities affecting the sustainability of the enterprise.
- As in project lands, the handover of development programs from the company requires training for district and provincial officials and institutional reforms.

Recommendation 9-11.

The IAG recommends that the GOL and NTPC note our suggested guidelines concerning the downstream population of the Xe Bang Fai and incorporate them into their processes for gender- and age-sensitive participatory planning and evaluation with communities affected by the project.

Wider Issues for Governance and Management

Protection of environment and common property rights

The plateau and adjoining catchment area are an attractive resource for both local inhabitants and entrepreneurs from outside the region. Regulation and policing are required to conserve environmental values in the protected wilderness areas, manage access to common resources such as the reservoir fisheries, and ensure that the rights of locals are respected. Regulations are in place covering both the wilderness area and the reservoir. There is a regulation in place for management of access to and use of the reservoir and a system of licenses for fishing. Fisheries regulations cover fishery rights, illegal fishing and the penalties for violations, boat registration and fish marketing. Fish traders as well as fishers require licenses.

Problems are more likely to emerge in the effective enforcement of these rules. Close cooperation between the Watershed Management Protection Authority (WMPA) and the Reservoir Management Committee (RMC) is essential. The WMPA currently has a specific budget allocation from the project in accordance with the Concession Agreement. The RMC is directly under the supervision of the Vice Governor of Khammouane Province and is funded by the GOL. There is a longer-term case that the two authorities would work more effectively together if both were governed at the provincial level.

A further significant issue is the capacity of the Provincial and District authorities and villagers to police these rules effectively. The WMPA law enforcement unit operates with a relatively small permanent staff and the assistance of Village Conservation Management Units (VCMU) and Village Militia but struggles to patrol effectively on existing budgets. Similarly on the reservoir, we were told by the RMC that effective patrolling to stop illegal fishing is difficult not only because of the sheer size of the reservoir but also because of inexperienced staff and insufficient budget and facilities.

At the moment there seems to be an abundance of fish but this may be because of the predicted fish “bloom” in the early years of the reservoir. As demand rises due to heavier fishing effort and if and when supply falls, the existing fish stocks will need to be managed sustainably and access to them properly controlled.

Recommendation 9-12.

The IAG recommends that:

- 1) The GOL and NTPC review adequacy of patrols in and around the protected area and on the reservoir.**
- 2) The GOL gradually transfer responsibility for the governance and management of the WMPA from the capital to the province.**
- 3) The GOL ensure that licensing regulations for fishers on the reservoir are adapted to fluctuating stocks, including the possibility of establishing catch quotas.**

Ownership and use of land

On the plateau, the question of individual property or use rights in land and governance of community land and assets is becoming highly salient because of potential competition between uses of land. Completing land use planning, confirming boundaries and allocating use and occupancy rights is becoming a high priority. The main issues are confirming boundaries between villages; allocation of titles to individual houses and associated land; further allocation of use rights in the drawdown zone; and demarcating forest and communal land.

Although boundaries may be confirmed mostly as a technical exercise, there are still some significant issues that need to be resolved about occupancy and use. How and whether land for cultivation is allocated to households or communally is a question for the PLUP to address. The basic issues are on what basis land for cultivation is allocated, and how communal land is managed. These seem at least partly amenable to solutions based on kinship and village governance. Some actual decisions on use of 0.66ha plots could be left to the extended families or clans to which households belong. User rights could similarly be made inheritable or transferrable within the village. The initial allocation of land then becomes less important than the mechanisms for ensuring that it can be efficiently and equitably reallocated. As for communal land, access rights could be managed by the village as a whole. This raises the question of the powers of a village authority to manage community assets constructed by the company. The Village Grievance Authority could have its role broadened to take responsibility for management of these community assets as well as access to communal land.

Recommendation 9-13.

The IAG recommends that as a result of the PLUP, the GOL define responsibility of a village authority for management of communal land and regulation of use of individually held land.

Forestry

The main production from the Village Forestry Association (VFA) forests is sawn for timber used for flooring and walls, kiln dried and fungicide treated and mostly

exported to Japan. According to the MAF, the sawn timber trade is only marginally profitable; the future of forestry depends on efficient operations and adding value to timber in Laos. As NTPC subsidies to VFA salaries will eventually cease, the VFA's future commercial viability is a significant issue.

Although the VFA was able to pay a dividend, income from forestry at present makes quite a small contribution to household budgets. With good management and expansion of the forested area it still has the potential to be a significantly greater supplement to income in the future.

The MAF advised us that the government intended to expand forestry by redeveloping degenerated areas and allocating more land for production forestry. The aim is to reforest at the rate of 200 ha/year, which will cost about \$200,000 a year. There are plans also for agro-forestry: tree plantations as "living fences", associated with NTFPs for example.

The contract recently signed with a local timber company provides a basic income to the VFA that will apparently be sufficient to continue to pay a dividend to resettler households. In the short run, the VFA will continue to receive both financial and administrative support from NTPC. To maintain and expand forestry on the plateau, the VFA must reinvest some of this surplus for the longer term. The VFA may need to consider paying wages to villagers for their labor in the forests and reduce the amount made available as income through the dividend. Both of these factors are tests for the innovative governance model of the VFA.

Recommendation 9-14.

The IAG recommends that the GOL review the present constitution of VFA and consider the appropriate role of waged labor in forest patrolling and other activities.

Future NTPC and GOL roles in environmental and social programs

Over the next few years, the NTPC will progressively hand over to the GOL or to villages a number of physical assets and full responsibility for funding, managing and staffing E&S programs. Both NTPC and government officials have expressed their concern about current local government and village capacity to take on these increased responsibilities. District governments need to build their own capacity and to support villages to develop theirs. Plans and actions relevant to these handover issues need to be brought together under the general heading of company exit from and handover of E&S programs.

Recommendation 9-15.

The IAG recommends that the GOL and NTPC agree on an overall handover plan through to 2014, identifying specifically how GOL will budget for management and maintenance of community assets and for training and placing staff in roles currently undertaken by NTPC and contract staff.

An integrated approach to water resources management

Nam Theun 2 also raises larger issues about the governance of water use in Lao PDR as a whole. Lao PDR is a member country of the Mekong River Commission (MRC) and has officially adopted the Commission's Integrated Water Resources Management (IWRM) approach to river basin planning. The Minister in charge of

WREA advised us that the GOL was firmly committed to IWRM. River Basin Committees responsible for flood protection and pollution control would be established for each river basin, funded on a polluter pay principle.

The natural basins of the Nam Theun and Xe Bang Fai rivers have both been altered by the construction of the Nakai dam and the creation of the reservoir which have changed the hydrological regime of the Nam Theun. In the case of the Nakai Basin, there are different institutions mandated to protect and conserve the resources of the watershed and the reservoir. A Social and Environmental Management Framework and Operational Plan (SEMFOP) for the management of the watershed of the Nakai Reservoir was prepared in 2005. Under the IWRM Framework, the Nakai watershed and the reservoir should be managed under one SEMFOP and there is also logic in extending the idea of a single SEMFOP downstream to the Xe Bang Fai.

Recommendation 9-16.

The IAG recommends that:

- 1) The Water Resources and Environment Administration (WREA) facilitate the discussion among the different institutions including the MRC secretariat to formulate the management approach on the Nakai Basin, Nam Theun 2 River Basin and XBF River Basin under the IWRM framework with the engagement of the provincial and district governments in each of these basins.**
- 2) In addition to IWRM, which is the guiding principle of the MRC, GOL take advantage of on-going initiatives of the International Lake Environment Committee Foundation based in Japan (www.ilec.or.jp) in promoting the Integrated Lake Basin Management approach. The guide materials are available in the ILEC website.**
- 3) WREA explore the possibility of participating in the annual ILEC-JICA Training Course in Integrated Lake Basin Management. The knowledge and experience gained will be important in IWRM implementation not only in the Nakai Basin but also for other reservoirs in Lao PDR.**

Revenue management arrangements

As we have previously reported, there are several conditions that must be satisfied for the GOL to demonstrate that it has met the requirements of the Revenue Management Arrangements to allocate funds equivalent to net project revenues to pro-poor and environmental programs. The conditions are demanding and may not be completely fulfilled for some years – in some cases possibly never. A comprehensive Public Financial Management Strengthening Program in which the World Bank is taking a lead role will address many of the accounting requirements but a recent Public Expenditure and Financial Accountability (PEFA) review indicates that there is still a long way to go to reach a high standard.

But the main present concerns are with identification of eligible programs and their benefits for the poor and the environment; and with establishing that the actual expenditure on these programs and their effects is indeed resulting in net additional benefits. The current budget for 2009-10 identifies eligible programs in education,

health, rural electrification, rural road maintenance and construction and environmental management. Taking a broad view, expenditure in the first four of these areas can contribute to the alleviation of poverty, provided the programs are properly targeted. The final category provides for strengthening the district presence of WREA and its water quality testing capabilities which, it is also arguable, will enable WREA better to carry out its mandate for monitoring observance of environmental protection conditions on resource consents.

The main problems with these program definitions are:

Eligibility: the specification of the programs is currently sparse and there is little indication of exactly what connects expenditure to final benefits through the operations of the executing agencies. It is asking a lot of the Lao government to develop sophisticated evaluations of outcomes, but a prior step would be a better specification of the expected quantity and quality of services.

Sustainability: the government opted for funding programs through the development budget administered by the Ministry of Planning and Investment so they have a project basis. The original objective of the RMA conditions was that “Programs have benefited from budgeted expenditures prior to selection and have a continuing recurrent financing requirement over the medium to long-term, and with a medium-term financing plan.” The GOL has drifted off this requirement for ongoing sustainable recurrent program expenditure since some of the expenditure in RMA “eligible programs” is non-recurring.

Additionality: it is in fact technically impossible to prove that expenditure on eligible programs is additional to what would have occurred without the project and certainly very difficult to argue the case without better information on budget expenditures by program than the GOL currently has. However a future Public Expenditure Review (PER) could look at overall sectoral impacts of additional spending. In addition the GOL needs to improve the quality of its expenditure reporting by program, something that should be possible with the new Financial Management Information System (FMIS). Furthermore, there are significant off-budget expenditures in some relevant areas (e.g. the Poverty Fund) which should be brought into the budget.

Measurement: The measures for achievement in each of the selected program areas while in some cases fairly straightforward have hardly been developed. The Ministries of Finance and Planning and Investment need to cooperate on the development of these measures.

Recommendation 9-17.

The IAG recommends that:

- 1) The GOL commission a further independent PEFA review of progress on the PFMS at the end of the financial year 2012-13.**
- 2) The GOL develop the required specific indicators of the impact of eligible programs, by the end of 2010.**
- 3) The World Bank and the GOL collaborate on a PER aimed at testing the additionality and sustainability of pro-poor and pro-environment spending in eligible programs, by the end of 2012.**

Overall Conclusions

Where the project stands now

Life is better for villagers but the benefits have been unevenly spread and their sustainability is still unclear. There is a wide variation in median incomes across both households and villages and a significant proportion of median incomes is still below the Lao poverty line. Some opportunities are being taken up more readily than others. Variation seems to be due to objective factors already discussed like geography and household labor but also to varying appetites for risk.

Driving a lot of the uncertainty and fear of change on the plateau is what one might call “land shock”. Land has suddenly gone from being an infinite resource, bounded only by spirits and cultural rights, to a scarce commodity to be husbanded, fenced, managed and fed with nutrients and water. The margin for error in subsistence livelihoods is now of a different and unfamiliar quality.

The adaptation to new livelihoods will take a generation. The change will continue, for better or for worse, long after NTPC has met its obligations. The lives of the resettlers will also develop in ways we cannot now predict. Further, there will be people left behind in the race for higher incomes. Company and government inputs have to be concentrated on this group.

We wonder if more could be done to leverage development through the natural leaders of the village, the men and women to whom others look to set an example and whose opinion and example they trust.

Progress on building the long-term Lao institutions required for sustainable development is going to become a major issue as the company progressively hands over community assets, terminates its support for major environmental and social programs, and reduces its role of funding and guiding community-based organizations like the VFA. The role of the Government of Lao PDR will increase significantly, particularly at a provincial and district level. But development will also depend on the capacity of local community institutions to take up new roles. More widely, the Nam Theun 2 project has become an important testing ground for development through community institutions and there should be many useful lessons for other rural communities from this experience

Lessons for the future?

Government officials have described NT2 as a “model” for future hydro developments. On the other hand, we also heard that it would be difficult to achieve the same standard of provision for resettlers in future projects like the Theun Hinboun extension because of “limits on developers' budgets”. This left us uncertain as to exactly what an NT2 standard meant. What standards will the government adopt in its Environmental and Social Impact Assessments (ESIAs) in terms of the rights of resettlers and other affected people, and a commitment to further development beyond compensation and restoration of affected livelihoods?

NT2 offers the lesson that negotiation of safeguards directly into commercial agreements is feasible. However this requires a close relationship between the government agency with prime responsibility for dealing with developers, the Ministry of Energy and Mines, and WREA, the agency responsible for environmental and social safeguards. In particular the ESIA as the mechanism for safeguards needs to be applied before the government makes commercial commitments. Social impact assessments and responses need to be based on genuine consultation and be given the same weight as environmental assessments.

The GOL is reportedly firmly committed to IWRM. That strategy is based on the principles of participatory planning and a river basin approach. We were told that there would be a river basin organization or committee for each major basin of which two or three are currently in the planning stage.

The financing of this project and the multiple agencies involved have at times created complexities and burdens that have led to questioning whether this “model” can indeed be replicated. It is important to continue monitoring and evaluating the long-term outcomes and impact of the project. But it is also important to recognize all that has been achieved to date as an encouragement for the future. Social and environmental safeguards do not in themselves involve complexity. So far, the evidence from Nam Theun 2 is that the commitment to retain this high degree of attention to affected persons is achievable and replicable.

ACRONYMS

ADB	Asian Development Bank
AEL	Aquatic Environment Laboratory
AFD	<i>Agence Française de Développement</i>
CA	Concession Agreement
COA	Chart of Accounts
COD	Commercial Operations Date
DAFO	District Agriculture and Forestry Office
DDZ	Drawdown Zone
DSP	Downstream Program
E&S	Environmental and Social
EMO	Environment Management Office
EMU	Environment Management Unit
ESIA	Environment and Social Impact Assessment
FB	Family Book
FCM	Fish Catch Monitoring System
FGD	Focus Group Discussion
FMIS	Financial Management Information System
GOL	Government of Lao PDR
IAG	International Advisory Group on the Nam Theun 2 Hydropower Project
IFI	International Financing Institution
IRN	International Rivers Network
IWRM	Integrated Water Resources Management
LSMS	Living Standards Measurement Surveys
LTA	Lender's Technical Advisor
MAF	Ministry of Agriculture and Forestry
MPI	Ministry of Planning and Investment
MRC	Mekong River Commission
NGO	Non-Government Organization
NLMA	National Land Management Authority
NSEDP	National Social and Economic Development Plan
NTFP	Non-Timber Forest Product
NTPC	Nam Theun 2 Power Corporation

PAD	Project Appraisal Document
PEFA	Public Expenditure and Financial Accountability
PER	Public Expenditure Review
PFMSP	Public Financial Management Strengthening Program
PIZ	Peripheral Impact Zone
PLUP	Participatory Land Use Planning Process
POE	Panel of Experts
RFA	Reservoir Fishery Association
RMA	Revenue Management Arrangements
RMC	Reservoir Management Committee
SAO	State Audit Office
SEMFOF	Social and Environmental Management Framework and Operational Plan
UNDP	United Nations Development Program
UXO	Unexploded Ordinance
VCMU	Village Conservation Management Unit
VDC	Village Development Committee
VFA	Village Forestry Association
VFG	Village Fishing Group
WASH	Water, Sanitation and Hygiene
WMPA	Watershed Management Protection Authority
WREA	Water Resources Environment Administration
WPA	Watershed Protection Area
WUG	Water User Group
XBF	Xe Bang Fai

1. INTRODUCTION: BASIS FOR MISSION

1.1. The 9th IAG

The International Advisory Group on the Nam Theun 2 Hydropower Project (IAG) visited Laos on its 9th field mission from 8 to 20 November 2009.

The main objectives of the Mission were to take stock of progress on livelihood issues for the communities affected by the Project, to identify issues around the institutions for long-term support and protection of these communities and to review the government's mechanisms and plans for use of its revenues from the project. These objectives fully occupied us during our two weeks. We were able to give less attention to other significant issues such as the status of the Watershed Protection Area (WPA) or issues related to the Nam Theun downstream of the Nakai Dam. We have however commented on governance issues that affect the protected areas.

The IAG was appointed in 1997 to provide independent advice to the President of the World Bank Group and the GOL on all matters pertaining to the achievement of the social, environmental and revenue management aspects of the NT-2 Hydropower Project. In addition to its annual field missions, the Group maintains on-going information exchange with the GOL, the Project Managers, Nam Theun 2 Power Corporation (NTPC) and other interested parties throughout the year.

As recorded in the dedication to this Report, Dick de Zeeuw, the first Convenor of the IAG, passed away in February 2009. The current IAG members are Rob Laking, Convenor, Jacques Gérin and Mary Racelis. Lennie Santos-Borja acts as Specialist Consultant and Secretary. Jacques Gérin was unable to join the 2009 Mission in Laos but has participated in the drafting of this report. Dr. Emil Salim was an original member of the IAG and continues in an advisory role.

As the result of the loss of our Convenor and a very heavy schedule of visits by other groups to the project in early 2009, the IAG agreed to delay its 9th Mission from early 2009 until November. It was thus 20 months since the previous Mission in February 2008. As will be evident from our Report, this has been a period of great change for the Project and the communities affected by it, particularly on the Nakai Plateau.

1.2. Organization of Mission

The Mission began with meetings in Vientiane with the GOL, the World Bank and the NTPC, moved on to a field visit to the project site and affected communities and concluded with debriefing sessions in Vientiane. (A full list of the people we met and the villages we visited is in Annex 1.)

In the initial phase of meetings in Vientiane, the IAG met officials and representatives from the World Bank, the Nam Theun 2 Power Company (NTPC), the Government of Lao PDR (GOL) and the Asian Development Bank (ADB). We

discussed specific project updates and concerns involving each of these institutions in subsequent meetings with their respective officials and personnel both in Vientiane and in the project areas. The IAG also met with the *Agence Française de Développement* (AFD), the United Nations Development Program (UNDP), the Lao Front and the International Rivers Network (IRN).

Staff of the NTPC and World Bank gave us a joint overview of the results of the five Living Standards Measurement Surveys (LSMS) conducted since 2006. They were at pains to point out the limitations and ambiguities of this major survey, but it did nevertheless provide us with a very useful reference point for our own observations of the changing living circumstances and livelihoods of the villagers of the Nakai Plateau.

1.3. Our approach to gathering evidence

In gathering information for this report, the IAG has, as in past years, drawn on presentations by and interviews with the main stakeholders, together with documents mainly from the international organizations and NTPC. For our inquiry into the present situation and future prospects of the people affected by the project, we have been able to draw also on economic and social surveys and our own discussions with villagers. On this mission we have had the benefit of a first overview of the all five of the LSMS conducted since 2006. We have also tried to spend more time with villagers themselves in focus group discussions (FGDs) and individual conversations.

Our approach to discussion in the villages is explained in greater detail in Section 3 of this report. Both approaches – quantitative surveys and qualitative discussions – have their strengths and weaknesses and complement each other. The surveys provide comfort that some statements about the social and economic circumstances of villagers can be generalized over the whole population. On the whole, we found little conflict between what the surveys seem to be saying and what we heard in the villages; but the more probing focus group discussions can enrich and help explain the findings of the surveys. They also uncovered issues or problems not brought out in the surveys.

In order to reduce the impact on the villages and to have a closer and more personal interaction with the people, we wanted to travel to villages in as small a group as possible and to stay longer in each village. Ms. Kesone Sayasane, a Lao consultant who had assisted the IAG during our 2007 and 2008 missions, was engaged again as facilitator for the meetings and interviews with villagers affected by the project. She was assisted in our village visits by Ms. Sonesavanh Phommalath and Ms. Pany Phothichack, who conducted interviews themselves and helped with translation. We had some help with translation in two villages from World Bank and NTPC staff but mostly it was only the six of us in villages.

We split into two groups to stay overnight in two resettlement villages, Ban Sop Hen and Ban Sop Hon, to have a first-hand experience of the daily life of the people.; The whole group made visits by day to a number of other villages: Ban Nongboua, the pilot village on the Plateau, Ban Lao and Ban Sangkeo in the Project Lands and Ban Phovah and Ban Keng Pe on the Xe Bang Fai. In each village we organized focus group discussions and individual interviews. This more personal and lower-key

approach proved to be effective in encouraging people to be more open and at ease in expressing their concerns whether related to the project or personal in nature.

The main focus of these meetings varied according to the location. On the Plateau, the main issues were the impact of the filling of the reservoir on land use and livelihoods. The Project Lands visits brought up once again ongoing concerns with the compensation scheme for croplands that were lost, the land for land replacement scheme, grievance mechanisms and restoration of livelihoods. The IAG noted that NTPC has hired a deputy manager to work more closely on these issues.



Focus group discussion in Ban Sangkeo

Downstream on the Xe Bang Fai, we heard mainly about development of alternative livelihoods, concerns about irrigation and the first worries about loss of access to the riverbanks. The IAG followed up on the performance of villagers engaged in alternative livelihood, such as pond aquaculture and weaving, in preparation for the predicted impacts of increased water flow and level once the project starts operation. We also looked at progress on simple infrastructure support like the pumped water wells for domestic water supply and adaptation of the pontoon irrigation pumps along the Xe Bang Fai.

This report makes use of presentations provided by NTPC and the World Bank during the mission, further information supplied after the mission and the first hand information from the project affected persons (PAPs) in the Nakai plateau, the project lands and the downstream area. Other sources of information include the reports of the Panel of Experts (POE), the WB's annual report to its Board of Directors, and the quarterly reports of the Lender's Technical Advisor (LTA). The monthly progress report of NTPC has kept the IAG updated since the November mission.

1.4. Organization of the rest of the report

The rest of this report is organized in the following manner. In Section 2, we sketch out the current physical status of the project works, both those concerned with the generation of electricity and those providing or restoring assets for affected communities; comment on the impacts on the environment and human habitats of those works; and summarize, also briefly, the current state of the NTPC and GOL programs to restore and develop the livelihoods of the affected communities. In Section 3, we report on the findings from surveys and our own village visits of the current status of village livelihoods and villagers' attitudes and concerns about their present and future lives. In Section 4, we discuss some issues related mainly to how future development will be managed by the GOL and village communities themselves; and comment on the arrangements for management of the revenues flowing to the GOL from the project. Finally, in Section 5, we summarize our conclusions and briefly discuss some lessons for the future.

2. CURRENT STATUS OF PROJECT

2.1. Construction activity and its effects

Since our previous full Mission in February 2008, the dam across the Nam Theun had been completed and the reservoir that this impoundment created had been filled. For the people of the Plateau, the loss of a huge area of land to the reservoir had become a reality. The construction works that began in July 2005 were almost complete and the hydropower facility was in the final testing stage. The Commercial Operations Date (COD), originally scheduled for December 2009, was put back mainly due to some technical problems with the turbines but was achieved in March 2010. As one of the consequences, the first full cycle of filling and drawing down the reservoir – important to the development of the drawdown zone (DDZ) (up to 7,900 hectares of potentially productive land) – will be delayed for a full season to late 2010.

Downstream of the powerhouse in the Project Lands, the regulating pond and the canal to the Xe Bang Fai have been completed. Testing of the powerhouse is already resulting in sporadic releases of water through the canal and into the Xe Bang Fai and villagers downstream are noticing the occasional unseasonal higher levels.



Water flowing into the canal

Nakai Plateau - Resettlement Villages

The resettlement of 6,300 people in the new villages on the Nakai Plateau is completed. All resettlement areas are now cleared of unexploded ordinance (UXO).

According to the NTPC monthly report, as of December 2009, every household has its wooden house with toilet, bathroom and domestic water supply through hand pumps. Construction of granaries has also been completed. Every village is now connected to the permanent electricity grid. Construction of community buildings, schools, health centers and markets is completed and most are provided with toilet and adequate water supply. Fishing boats (at the rate of one for every two households), fishing gear, and ice storage boxes have been supplied to the villages and five ice plants have been constructed.

The main construction tasks still to be completed is the planned irrigation of a portion of each individual 0.66ha plot. Work has begun on small-scale irrigation along the margins of the drawdown zone. The company is planning for the handover of community assets. Significant issues for the villages and GOL itself will be the ongoing maintenance of community assets and developing suitable plans for disposal of solid waste from the plateau villages.

Project Lands

The works have left a huge footprint on the landscape, bringing both restrictions and opportunities to local communities. The powerhouse, regulating pond and canal have created restrictions for villagers getting to their land (in Ban Lao villagers particularly complained about the difficulty of getting round the powerhouse enclosure to land beyond). The deep water in the canal is an attractive hazard and before it was fully fenced off with restricted access there was one tragic drowning of a young girl. On the positive side, water can be used for irrigation purposes. Irrigation outlets are already completed and supplied by NTPC, but local residents appeared not to be aware of this.

Plateau and Project Lands: from construction to rehabilitation

As the construction phase of the project winds down on both the plateau and in the project lands, decommissioning and rehabilitation works have started in some of the construction sites. Sites are being individually inspected and signed off for appropriate recovery and restoration. The main issues, according to the Lender's Technical Advisor (LTA), are the lack of topsoil to replace that removed from construction sites, unauthorized re-occupation of sites and proper disposal of waste, particularly hazardous waste. The LTA reported that significant erosion on some roads over the last rainy season had been repaired by December, but we imagine that in the unstable soils of the Plateau, road maintenance, bank failure and sediment will be a continuing issue during the rainy season. The LTA added that further work was still needed in the restoration of forest areas and that the loss of habitat was a concern with respect to forest biodiversity.

According to the LTA, solid waste management and disposal of hazardous wastes continues to be a concern. NTPC have constructed a crypt for containment of hazardous wastes at Gnommalat but this is not a preferred long-term solution. The GOL and neighboring countries do not have yet a facility for storage or disposal of hazardous waste. During the last rainy season there was fecal contamination of some groundwater sources.

With reference to the LTA debriefing presentation in December 2009, a study to review disposal and treatment options for all solid wastes is already completed. The GOL's Environment Management Unit (EMU) is assisting NTPC in preparing a

preliminary waste management plan for the plateau and a draft business model for the operation of a sanitary landfill.

Downstream Areas

As a result of the higher dry season flows in the Xe Bang Fai, water quality may deteriorate, river bank gardens will be lost, river banks may erode more quickly, dry-season river crossings will be reduced, and irrigation might be affected. With the initial releases of water from the reservoir, the company has held consultations with villagers informing them that while they will continue to have access to river bank gardens, less land will be available to them for cultivation since water levels will rise sporadically.

By December 2009, the physical works required for the Water, Sanitation and Hygiene (WASH) program designed to improve water supply and sanitation to compensate for changed conditions in the Xe Bang Fai were nearing completion. Most of the boreholes had been drilled and over 90% of the hand pumps installed; about 85% of the planned household toilets had been constructed.

The Khammouane Provincial Government has approved a policy for compensation for loss of riverbank gardens. By December plans were in place for consultation with villagers on compensation but the consultation program had not begun. A program was well underway to modify 19 existing irrigation pumping stations mounted on rafts on the river to cope with changing water levels. The company's plans recognize that further erosion to river banks may require additional re-siting or replacement of existing community assets.



High water mark in rainy season floods

The Xe Bang Fai floods regularly every wet season, as a result of both increased water flowing down the river and back flows from the Mekong. Water backs up in Xe Bang Fai tributaries and floods paddy areas. The water added to the Xe Bang Fai from the reservoir has little extra effect on these flows. The GOL has built 15 water gates on the lower XBF in an effort to stop flooding up the tributaries. The NTPC is investigating the feasibility of constructing an additional five gates but has indicated that it would not be involved in their construction.

2.2. Impact of changes on natural resources

Nakai Plateau and Reservoir

The plateau landscape has completely changed with the filling of the reservoir. At full capacity this man-made lake has a surface area of 450 km² and a water volume of 3,190 million m³ and lies virtually at the doorstep of the resettlement villages. Signs warn of the danger of the new large body of water. The sound of motorboats in Ban Sop On and Ban Nongboua at any time of the day is a sign of reservoir use for livelihood or transportation. Reservoir fishing has become a major source of income for many villagers. Young boys and a few women have already learned to drive motorboats with fishnets in tow. Less desirably, the reservoir offers a navigational highway not only between villages but also to the protected wilderness areas on the opposite shore. It is also an attractive resource and access route for people from outside the Plateau.

On the resettlement side of the reservoir, the drawdown zone at its full extent could provide up to 7,900 ha of additional productive land during the dry season. Over the next year it can be fully surveyed and allocated for cultivation and grazing. While it will not be fully available for the first time until the 2010 dry season, we saw how some areas in the drawdown zone especially in Ban Sop On, were already being planted with vegetables, herbs and spices. Some villagers, missing the fruits that they used to pick in the forest, have planted fruit bearing trees along its upper edge.

Recommendation 9-1.

The IAG recommends that given the multiple uses that are emerging within the reservoir, the GOL and NTPC develop a policy to manage these activities and a management plan and regulations to ensure conformity with the policy.

Reservoir Fisheries

Predictions of a “fish bloom” – a rapid increase of fish stocks in the reservoir – have been borne out. Catch statistics indicate how significant the reservoir fishery has become for the resettler communities. Based on NTPC’s fish catch estimate from November 2008 to November 2009, the quantity of fish supplied by the reservoir ranged from 80,000 kg/month in June to 160,000 kg/month in January with great variance in-between. The boom in fish supply is expected to decline but it is still too early to predict when. Current estimates of catch do not give a reliable estimate of the underlying trends in fish stocks. There are several factors to consider such as the weather condition, the amount of time engaged in fishing activity during

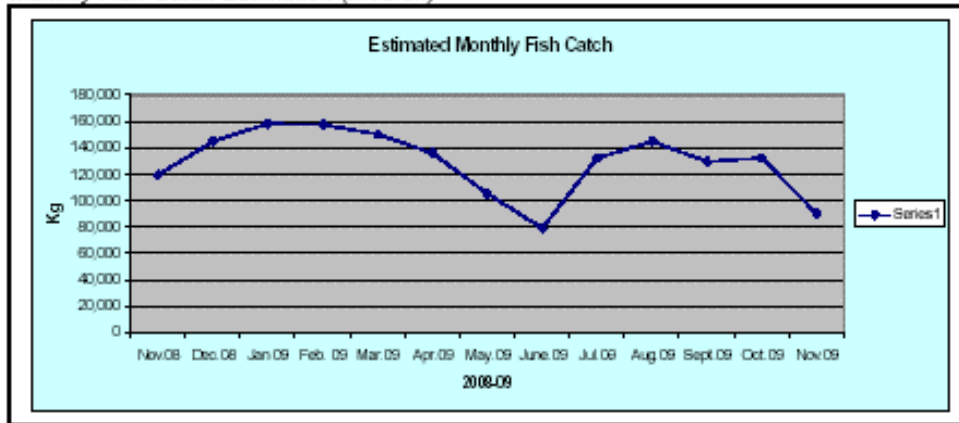
the wet and dry season, the availability of natural food, etc. which influence fluctuations in fish population and in fish catches.



Fish being landed at Ban Thalang

Fish catch monitoring and a fish stock assessment program is in place and the most recent data was obtained in December 2009.. Catch estimates can also be improved. The December 2009 monthly report of NTPC indicates that their Fisheries Advisor has reviewed the Fish Catch Monitoring System (FCM) in order to provide more accurate data beginning in January 2010

Monthly Fish Catch Estimation (Median)



Source: NTPC Monthly Progress Report, Part C, Environmental and Social Report, December 2009.

Recommendation 9-2.

The IAG recommends that in order to provide a more accurate estimate of fish productivity and fishing pressure in the reservoir, NTPC monitor the catch per unit effort in addition to the Stock Assessment Program. Such information will facilitate fisheries management such as determining the need for closed seasons and if necessary the establishment of fish sanctuaries in suitable areas in the reservoir to serve as breeding grounds for different fish species.

Reservoir Water Quality

Not all of the biomass was removed before inundation in April 2008. Their decomposition, the geochemistry of the inundated land and the prevailing weather conditions highly influence the water quality of the reservoir and those of the receiving waters downstream. Nutrients and phosphates from the submerged organic matter and from the soil fertilize the reservoir and trigger higher productivity of natural food for fish and other organisms. Riverine species have found their respective niche in the littoral areas and in other areas in the reservoir. These conditions can explain the surge in fish population in the reservoir. It will take years before the submerged biomass will fully decompose so it will continue to supply these macro-nutrients. For some time, this internal supply of nutrients from the reservoir itself may continue to be higher than the external loading coming from sewage in the resettlement villages, the fertilizers used for rice and vegetable cropping and surface runoff. In the dry season when there is sufficient sunlight, the high concentration of these nutrients may cause localized algal bloom especially in areas near coves where water movement is minimal. This causes aesthetic problems and affects water quality. The algae cause obnoxious odors and when the bloom collapses oxygen depletion may lead to fish kill. Algal blooms were observed in October 2009 at the junction of the reservoir with some of its tributary rivers.

Thermal stratification, especially in the deeper parts of the reservoir, was already identified in the monitoring reports of NTPC. This happens naturally since it is controlled by the prevailing weather that affects water temperature and water density. Stratification can have bad effects on water quality: the bottom layer becomes anaerobic and produces toxic compounds. When the stratified water layers collapse and upwelling mixes the water layers, fish kill can occur either through initial exposure to toxic compounds or through the depletion of dissolved oxygen.

NTPC has established project water quality guidelines for all the parameters that they monitor in different locations in the reservoir, in the intake channel, downstream of the powerhouse, and at different locations upstream and downstream of the XBF. Generally, the water quality of the reservoir complies with the guidelines except for the perennial excess of total iron, which is related to the geochemistry of the soil in the plateau. However there are still potential major risks to water quality and fish life from decomposing biomass, thermal stratification and algal blooms, as noted above.

The International Rivers Network (IRN) has requested that the detailed results of NTPC monitoring of water quality be made public. The Company's response to us was that this information in its raw form would not be comprehensible to a general audience. We do not think that argument should carry much weight. It is better in the interests of transparency to err on the side of release rather than for NTPC to raise suspicions that it has something to hide.

Recommendation 9-3.

The IAG recommends that:

- 1) GOL and NTPC, in consultation with the World Bank, establish a joint protocol on public disclosure of monitoring information.**
- 2) The information from the water quality program be made available with adequate explanation for understanding and interpreting data and including, where appropriate, measures taken to meet guidelines and regulations. Aside from the water quality status report in NTPC's E&S Monthly Progress Reports provided to GOL, LTA, POE, IAG and IFIs, a concise and simple (non-technical) version should be disseminated to other stakeholders including civil society groups.**
- 3) GOL should send the EMU staff to advanced local or foreign training courses on water quality monitoring, assessment and management to further equip them in doing independent assessments and review in the future.**

Downstream – Xe Bang Fai

During the recent dry season, the occasional pulses of water coming downstream from the project during testing have caused some pumps to overturn and occasionally limited normal access to river banks and crossings. The water releases were also blamed, probably unfairly, for back-flooding on the Xe Bang Fai during the last rainy season. However the full project impacts on the XBF will only be evident when the project starts its commercial operation. Up to an additional 330 m³/sec of water from the power station will flow into the Xe Bang Fai and during the dry season river levels will be consistently much higher than they are now. Current regular discharge since March 8, 2010 is at 300 m³/sec. There will also be quite large fluctuations on a more or less weekly cycle during the dry season, due to lower energy demand on the power station during the weekends. Both the fluctuating volume of additional water and its uneven quality will have impact on aquatic life in the river.

Even before the start of these operations, stream bank erosion is already evident in the Xe Bang Fai¹. The area also gets flooded during heavy rain. Baseline data taken in 2004 and 2005 showed good water quality during the dry season and fairly good during the wet season.

The additional inflow of water released from the power plant can have severe impacts on fish habitats and change the population structure. Erosion and siltation may be further aggravated by increased flow and this is also detrimental to the fish due to clogging of gills by silt. Likewise, the high amount of suspended sediments

¹ Although NTPC says that some of it is caused by human impacts, which may be reduced by higher dry season flows because of limitations on access.

blocks the penetration of sunlight needed by aquatic plants to produce the oxygen and biomass needed by fish and other aquatic animals.

Water Quality Laboratory at the Project Site

An Aquatic Environment Laboratory (AEL), jointly managed by NTPC and EDF, started operation in mid-2008 to support water quality monitoring activities. It is strategically located in Oudomsouk, close to the sampling and monitoring stations. Due to its proximity, it can quickly respond to emergency situations like algal bloom and fish kill. It handles all water quality monitoring and assessment activities in the project area including the emission of greenhouse gases from the reservoir. Its main task is to monitor compliance with water quality guidelines. It also provides an on-going picture of the changes occurring in the watershed.

Ultimately, this laboratory could play a role in attracting and training students who can contribute to knowledge and management of Lao's great water resources.

Recommendation 9-4.

The IAG recommends that:

- 1) The Aquatic Environment Laboratory (AEL) should consider establishing partnerships with institutions of higher learning so that its facilities can contribute to educating and training students in the fields of limnology, biology, zoology, chemistry, hydrology, environmental science and environmental management as part of their preparation for monitoring water quality and performing environmental assessments.**
- 2) AEL through NTPC be engaged in environmental education activities by providing public display of water quality information and of aquatic life in the reservoir either in the laboratory premises or in universities with science courses; and by publishing brochures and pamphlets designed for students.**

2.3. Support for changing livelihoods

Nakai Plateau

During 2010, NTPC environmental and social staff plan to strengthen the extension system providing support for livelihood development in the villages and assist capacity building for their GOL counterparts who will eventually take over full responsibility for these programs. The full demarcation of individual and community land will be assisted by a Participatory Land Use Planning Process (PLUP) that is just now getting underway with pilot testing. Allocation of the Drawdown Zone will be a major task of the PLUP.

Reservoir fisheries

The allocation of boats and gear for reservoir fishing is being accompanied by capacity building exercises in the form of training on boat maintenance and repair. NTPC also plans to put up fish landing and mooring places for each resettled village. A fish landing fee is collected in Ban Thalung of which a certain percentage is

allocated for the Reservoir Fishery Management Committee (RFMC), the Village Development Fund and the District Agriculture and Forestry Office. Traders come in vehicles full of containers as they await the arrival of fishermen. In the resettlement villages such as in Nong Boua and Ban Sop On, fishermen wait for the traders to come and buy their catch for the day but there are days when the traders do not arrive. Fish preservation becomes a necessity in these situations. Through the project, some women who were selected by the *Nai Ban* were trained to make *padek*, a local delicacy of salted fermented fish, while some undergo training in making fish balls which they can cook and sell. In return, they are expected to transfer the skill to interested fellow villagers.

Agricultural activities

NTPC's program to support agriculture in the plateau has started to show encouraging results after years of trying to introduce new technologies in the area. Different systems of soil enrichment techniques in the 0.66 ha plot allocated to each household for rice farming and crop cultivation have been applied, such as soil conditioning by planting the grass *Stylosanthes*, crop rotation and multi-cropping of compatible crops. Fertilizers are distributed to the villages through the District Agriculture and Forestry Office (DAFO). Organic fertilizer is also being encouraged through the use of compost. There is evidence of a significant improvement in yields, perhaps 25% higher than last season.

These techniques are supported by government extension services such as continuing capacity development of the farmers, expansion of demonstration plots, maintenance of farm models in each village, field visits and exchange programs, and collaboration with the District Agriculture and Forestry Office (DAFO) and the Village Development Committee (VDC) on planning, monitoring and evaluation. A program to train trainers is also being implemented to sustain capacity building activities among the farmers.

Irrigation

Irrigation works in the villages are in progress. The target is to install 221 small-scale systems. The water supply comes from shallow wells dug at the edge of the reservoir and pumped by small submersible electric pumps to header tanks from which it is distributed through pipes to the farm plots. In some areas, the water is applied directly to the farm plots. NTPC is aiming to finish the irrigation works by COD. A water user group (WUG) is organized in every village to take charge of the operation and maintenance of the system.

Livestock raising

One of the big issues at the time of the 8th IAG mission was the shortage of food for buffaloes and cattle due to the significant loss of grazing areas as a result of reservoir impoundment. We were informed that buffalo and cattle deaths due to starvation are still a concern. A fodder program was put in place, which promotes back yard gardens for grass (elephant grass, *stylosanthes* and ruzi) and implementing the cut and carry technique to feed the cattle and the buffalo. This is supported by on-the-job training for the cattle raisers. Forage and fodder appear to be still insufficient. There is a need to intensify the establishment of cattle yards (33 in 2009), linked to fodder gardens. In the longer term, communal pasture land in

each village will be allocated after completion of the Participatory Land Use Planning (PLUP). The drawdown zone is also considered as a viable area to support planting of fodder crops such as maize.

An animal production program for large ruminants like cattle and buffalo has already been introduced. Training in rice straw and hay pressing is being provided to ensure supply of food to the animals during the dry season. A cattle crush was seen in Nong Boua for the vaccination and registration of animals. The same program exists for small livestock such as pig, chicken and duck with supplemental feeding from a mixture of rice-bran, broken rice, maize, processed cassava, stylosanthes, small fishes and green leaves.



Small garden plot near the reservoir

Project Lands

As on our previous visits to project lands villages, the main issues raised by villagers were again compensation for land and productive assets lost to the project works, and restoration of livelihoods. However it is fair to say that the grievance process appears to be winding its way to a conclusion. The inflow of new grievances seems to have virtually ceased and the rate of “valid” decisions is rising, perhaps reflecting applicants’ more accurate calculations of likely success. The Company is aiming to finalize individual household compensation and restoration plans in 2010.

Downstream

Restoration or development?

Like the Project Lands Programs, the Downstream Program is also designed on a compensation and restoration principle, with assistance capped to that required to fulfill this obligation. The Company has always stipulated that, in accordance with the

CA, further assistance is the responsibility of the GOL, assisted by donor-funded programs like the Khammouane Development Program. Nevertheless, although the Downstream Program (DSP) is based on a compensation and restoration principle, the company is also required by the Concession Agreement (CA) to “secure sustainability”. The DSP has in effect a development orientation that includes capacity-building activities: advice on selection of livelihood opportunities, training and field visits, demonstrations and trials, developing market linkages; and specific supporting services such as breeding and nursing of fish, the production of fish and livestock feed, veterinary services, the availability of new breeds of livestock, the availability of raw material for weaving activities. The Company’s E&S team has been quite innovative in the way it has approached this task, particularly in adopting a consultative and participatory approach to working with villages.

For example the DSP aims at establishing service provision villages and households to provide target villages with new technology and equipment and improved materials to establish them as innovation leaders. We think this makes sense in terms of developing innovative local leadership. As on the plateau, a Fisheries Co-Management program is taking a stakeholder management approach, engaging all users and will encourage decentralised management by resource user groups. Finally, the Community Coordination Team, although given the potentially thankless task of finalising the Grievance Program, appears to be working on a participatory development model, for example targeting villages with low participation in the Village Income Restoration Funds (VIRFs), toilet construction, etc. We support any effort to strengthen the Village Development Committee (VDC) structures and systems, not just for the VIRF but for village development planning as well. Feedback to NTPC from villagers on the downstream programmes will be helpful. We commend this community-based approach.

The Village Income Restoration Funds (VIRFs)

The VIRFs were always intended as a principal vehicle for householder compensation and livelihoods restoration downstream. They are being progressively rolled in over six “phases”, or groups of villages. With the first three phases being completed, the rate of uptake seems to have been on average quite impressive, but variable – both by income strata of households and by village (Tables 1 and 2).

Table 1: % households participating in VRF by December 2009²

% households	No of villages
Less than 20%	0
20-39%	3
40-59%	9
60-79%	15
80% and over	18
Total	5

Table 2: % households participating in VIRF, by phase of introduction and living standards³

Phase	% Rich	% Middle	% Poor	% Total
1 (20 villages)	85%	80%	57%	76%
2 (20 villages)	76%	63%	51%	64%
3 (5 villages)	88%	86%	62%	80%
4 (16 villages)*	35%	44%	20%	39%
Total	73%	65%	47%	62%

*VIRFs in Phase 4 villages have started operation late November – early December 2009.

Although in theory the VIRFs are a form of compensation and restoration, calculated on an individual household basis, they are in fact being used (by design) as a village development fund on a revolving credit basis. They make small repayable loans to households in principle for livelihood-related activities, including meeting farmers' cash flow needs. But villagers, especially women, say they borrow for other reasons such as medical needs, festivals, consumption and weaving materials.

The basic principle of compensation and restoration imposes a countervailing risk (in the interests of fair access) that households who would have difficulty in repaying are encouraged to take up loans. Indeed it does appear that there was a fairly high

² Information supplied by NTPC.

³ Information supplied by NTPC.

rate of rescheduling, although repayment timeliness has improved following a recent audit review.

There are issues relating to the purpose of the fund, its long-term future and to its governance. Many households are not accessing it for various reasons, even though tacitly the criteria have been relaxed to include funding activities that are not strictly developmental. Potentially the VIRFs form the basis for a longer-term micro-credit facility in villages, but this will require either the administering village committee or some other authority to be structured to manage them (even as a central point for women's micro credit clubs).

It is not NTPC's role to develop VIRFs as micro-credit institutions or any other form of longer-term facility. However the success of the current VIRF program suggests that there will be an ongoing need for a small, village-based and village-managed credit facility beyond the present mechanisms, which have a finite life. It may well continue to include small "tide-over" loans in its criteria, but it will have to be financially sustainable in the longer term and not as a form of entitlement to compensation. This requires some careful thinking of the governance and management of the fund. The international agencies may well be able to lend their expertise to assist the GOL to define a legal and practical basis for this type of sustainable fund.

Recommendation 9-5.

The IAG recommends that the World Bank, representing the IFIs participating in the NT2 Hydropower Project, and the GOL discuss the means by which the present VIRFs might become the platform for a longer-term sustainable source of micro-credit for village development. Particular attention should be given to the circumstances faced by women in seeking loans.

Flood control and mitigation

The annual flood cycle of the Xe Bang Fai presents particular challenges to the livelihoods of the local communities. The villagers in the area have in some cases abandoned wet season rice cultivation as a result and tried to increase dry season yields using irrigation water from the river. As mentioned above, the GOL's strategy has been to try to mitigate the impact of back-flooding on tributaries with water gates at the outflow into the river. NTPC is assisting with developing capacity to operate and maintain the gates. Based on past experience, that strategy is not without risk. If not properly maintained and operated, they can create more problems than they solve, including hampering fish access to spawning grounds and slowing drainage as floods recede.

The Company is testing activities that can co-exist with floods during wet season, that will improve yields and income from dry season crops (rice cultivation is characterized by use of costly chemical fertilizers and low-value varieties of rice) and improve natural fisheries management. The IAG endorses these strategies which may well be more cost-effective than expensive and poorly maintained flood prevention works. In other words, learning to live with floods, as downstream communities have done for centuries, may be a more viable approach than trying to defeat them. However the rehabilitation of the floodgates seems to be a *fait accompli*: attention must also therefore turn to strengthening the capacity of the

Provincial Government and local Water User Associations to operate and maintain the gates properly – lest they do more harm than good.

Recommendation 9-6.

The IAG recommends that:

- 1) NTPC and GOL continue to address flood protection issues, primarily by helping villagers to adapt and to eventually benefit from the flood.**
- 2) GOL identify the requirements for strengthening provincial and local community capacity to manage flood protection and management in the Xe Bang Fai basin.**

3. SOCIO-CULTURAL ISSUES AFFECTING LIVELIHOODS

Since the implementation of the project in 2005, the issue of livelihoods prevails. Are the lives of people affected by the dam getting better and more secure? How do they assess the situation and their future? Will they be able to sustain improvements once support from the project ends? These questions continue to demand attention.

Classified by the kinds of changes they have undergone as a result of the dam construction and which they may still experience, the affected people fall into three categories: (1) resettled forest swidden cultivators on the Nakai Plateau, (2) agro-forestry farmers on Project Lands; and (3) lowland farmers Downstream along the Xe Bang Fai. Because the livelihood impacts of the dam differ significantly for each group, they are treated separately here.

3.1. Living standards and livelihoods on the plateau: a survey picture

The Concession Agreement (CA) sets income targets that must be reached by end of a 5-year Resettlement Implementation Period which (subject to legal opinion) NTPC is currently interpreting as 2013, five years after reservoir impoundment. These targets have to be sustainable: that is, not dependent on any continuing subsidy elements from NTPC.

The LSMS is the major means by which achievement of this goal will be assessed. There have been five iterations of the LSMS since 2006. At the time of the mission and the presentation of the survey results, it was made clear these were still in early stages of analyses. There were thus a number of caveats. There are methodological problems with measurement of household income and consumption as well as concerns with the reliability of reporting by the participating households. The NTPC representatives particularly were most insistent that we did not place too much weight on these early analyses.

With these reservations in mind, the Company and Bank presenters felt they were able to draw some “initial conclusions”. To quote from the notes given to us: the plateau households surveyed are “becoming less dependent on project incomes and increasingly earning livelihoods from sustainable sources”; and incomes from fishing had “clearly increased”. Agriculture apart from rice, forest products and livestock and off-farm activities overall (given the measurement problems) make a relatively small contribution to household consumption in kind or to cash income.

Overall, it appeared as if the current Lao poverty line of \$2 a day had been regularly exceeded for all five surveys on an expenditure basis and the median figure was probably \$4. On an income basis, it depended on how income in kind was valued but probably median income was at or near the \$2 poverty line. The difference appears mostly to reflect a net subsidy by NTPC so that, while relative dependence on project sources of income appeared to have diminished slightly, it seems still to contribute about 40% of consumption to the median household. Some of that income is from non-project related employment.

The survey also over-samples specifically for “vulnerable” households. Which households are vulnerable is defined basically by a consensus amongst inhabitants of each village as to which households are in relative poverty. Vulnerable household median consumption is also at or about \$4 but median income on either the two valuation bases is probably below the \$2 line – subsidy rates for vulnerable households are probably higher than the median for the rest of the population.

The factors in the variation in incomes and in uptake of livelihood opportunities seem to include: geography – village location on the plateau partly determines how easy it is to market fish, for example; ethnicity – some ethnic groups seem to take up new activities more rapidly than others; shortage of family labor which is often connected to “vulnerability” such as a single adult head of household or elderly persons living on their own; and previous assets – both material and (probably) social capital; gender: there is some sketchy evidence that women are perhaps more prepared to experiment with new livelihoods than men.

On a consumption basis, therefore, the households of the plateau have apparently significantly improved their position relative to other similar rural poor in Laos; but this favorable expenditure situation is currently not sustainable without subsidy. Significant new sources of household income, in cash or in kind, need to be found if the target incomes for 2013 are to be achieved in a sustainable basis. Furthermore, there is likely to be a fairly long tail of vulnerable households that for one reason or another are less likely to take up the opportunities that are available.

The LSMS also asks some questions of respondents relating to their perceptions of quality of life. What is reported seems broadly comparable with what we and others have heard in the villages of the plateau: resettled villagers agree that, in physical terms, life is much better for them than it was in their old villages. Consistently over 80% of LSMS respondents have said that life is much better than it was before resettlement, and currently hardly anyone is saying it is worse. What people mentioned most about the improvements were housing and infrastructure (probably including roads, water and electricity), followed by health and education.

The responses on what had got worse are consistent with the uncertainties and fears expressed to us and other visitors to the villages. Apart from the rather non-specific “demand for products”⁴ the dominant concern in the last two surveys, both conducted since reservoir impoundment in 2008, has been “access to land” and probably relates to the loss of land for cultivation and grazing.

⁴ Unfortunately, the largest single category of factors that had “got worse” – “demand for products” - is not simple to interpret and may in fact be a misleading description. The survey project team comments “From our experience in the field, ‘demand for products’ not only relates to market. The households’ answers that relate to this are more concerned with villagers’ everyday demand for products for their own consumption. For example, they complained that in the new settlement areas, they had very limited access to wild fruits, plants, roots, leaves, animals (usually as food, and sometimes as medicine), in comparison with their old settlements which were closer to forest and more settled (meaning that they had edible trees and plants on their land) . They also said that in the new settlement areas, they had to travel in much longer distance and spend longer time to collect wild products for selling, especially resin. This latter case was caused more by state’s restrictions on resin collection and limited resource, and less by the location of the settlements.” (Personal communication)

Recommendation 9-7.

The IAG recommends that NTPC and GOL support and development efforts focus on vulnerable households that are taking up new activities less than others.

3.2. Discussions with villagers

This section discusses the results of focus group discussions (FGDs) with several groups of villagers as well as semi-structured individual interviews conducted by the IAG members assisted by their Lao research partners. Guide questions for the FGDs and interviews are shown in abbreviated form in Annex 2. We visited Ban Sop Hen, Ban Sop Hon, Ban Done and Ban Nongbua on the Nakai Plateau; Ban Lao and Ban Sangkeo in Project Lands; and Ban Phovah and Ban Kengpe Downstream. On the plateau, team members divided into two groups staying overnight in Ban Sop Hen and Ban Sop Hon. Additional local information on our field visit came from walk-through observations and meetings with government, NTPC and World Bank staff.

The voices of the villagers came from key groups: all-women (who received particular attention because gender roles traditionally limit their public utterances); all men; mixed men and women; and young people. Also interviewed were key informants like the *Nai Ban*, or village chief, fish traders, market traders, micro-credit managers, community leaders, and other local stakeholders. A particular attempt was made to include ethnic minority residents.



Village meeting in Ban Lao

While the villagers' comments highlighted in the discussion below cannot be interpreted as representative of an entire village population's views, the FGD results can be understood as bringing out the concerns of the major categories of people in affected communities. Because the FGDs also centered on subjects of interest to the villagers and were conducted in an informal manner, they enabled the IAG to probe

and gain insights into *why* people were saying what they did and *what meaning* they were giving to their reflections. The group interviews elicited qualitative information rather than the quantitative data normally associated with large surveys. The two data-gathering techniques are complementary. With some exceptions, the FGD outcomes match fairly closely the findings of the NTPC's LSMS and its Family Books.

The puzzle of what 'demand for products' (something that 'got worse') means (raised in a footnote to this section), suggests to us that building some kind of loop between the survey and the more open ended individual and group interviewing in villages would be advantageous both in helping explain survey responses and suggesting lines of enquiry in village interviews. Inevitably survey coding produces ambiguous results because closed-ended questions and limited room for amplification through text may not be getting at issues that are really important to the respondents. Equally, the persistent concern about open-ended interviewing is that it is not producing answers representative of the population. Interview agendas in the villages could well be informed by these kinds of responses that need deeper probing in interviews. The return loop is the classic one for surveys: use semi-structured interviews and discussion as a way of throwing up questions - in language that makes sense to the respondents - that can then be tested on a wider structured sample in a survey.

Recommendation 9-8.

The IAG recommends that NTPC disseminate LSMS and FB analysis widely, to encourage other researchers to probe more deeply into issues that have been identified using more qualitative and participatory methods and to offer suggestions for probe questions for future LSMS.

3.3. Resettled forest swidden cultivators on the Nakai Plateau

Forest Livelihoods Pre-resettlement

Of all the affected households in the three areas, resettlers have undergone the most drastic transformation in livelihoods and social relations. Until only a few years ago they were shifting cultivators clearing new land every few years, planting upland rice along with cassava, sugar and other food supplements for as long as the soil remained fertile. With declining productivity would come the move to a new site or a return to a former clearing regenerated after several years of lying fallow.

Men and women cultivated the forest clearing together. The men hunted and trapped animals, birds and insects for food, kept track of free-range buffaloes and cattle, collected resin and honey, and cut down an occasional tree to build a house. The women helped them obtain resin and honey while gathering other forest resources, like bamboo shoots, mushrooms, cardamom, edible leaves, fruits, medicinal plants, herbs and fuel wood for cooking fires. Beyond that they raised a few pigs and chickens, wove baskets, took care of the family and placated the spirits.

Women fetched and carried water from often distant sources and took their children to local healers for treatment of illnesses and spirit-caused health problems.

Parents taught their children the skills needed to manage their environment. A few youngsters would make the trek to a government grade school some distance away. Kin groups and mutual support offered the comfort embedded in this subsistence ethic, while spirits lodged in their special places protected the community from harm and guided the behavior of their charges. The people in turn nurtured and placated their spirit protectors through celebrations that gave meaning to life. The government remained a distant entity to be dealt with only when its representatives made the effort to hike steep mountain trails to their village.

It was a hard life demanding arduous work to ensure the survival of the members. Women died in childbirth; children were afflicted with skin diseases and diarrhea, and men faced dangerous animals, snakes, and infections in the forest. When unexpected rainstorms or animal epidemics threatened their survival, they knew what to do: seek material remedies and invoke spirit support. Given the rich resources of the forest and people's long experience of dealing with it, they could predict risks, armed with a sense of control over their livelihoods, their environment and their future.

The Transition

Into this cyclical life-flow came the news that certain clusters of them would soon have to move to resettlement sites. This was to escape the impending floodwaters of a huge man-made lake that would soon engulf their homes. Several years and many discussions later with government and NTPC personnel, hundreds of former shifting cultivator families moved, together with their spirit shrines and ancestors, to new settlements laid out like city blocks with criss-crossing streets. There they occupy large Lao-style houses in expanded villages populated by diverse ex-swidden ethnic groups.

Several reports have already been written about how these former shifting forest dwellers are adapting to life in permanent settlements. Demanding continuing attention, however, are the effects of the transfer on their livelihoods, their cultural integrity and future perspectives. To explore these concerns, let us listen to the voices and views of the resettled villagers themselves. These vary from one resettler village to another and differ within each village as well. At the same time, many similar statements emerge regarding their new lives and livelihoods.

The Resettlement Communities Today

Agriculture

Asked about changes affecting their agricultural livelihoods, several villagers replied that the 0.66 hectare land allocated to each household was sufficient to ensure neither a secure livelihood nor, therefore, a promising future for their children. This observation appeared to stem from the cultural ideal that one's land should produce enough rice to cover household consumption needs for the entire year.

Even though many households had not likely achieved this goal in their previous swidden communities, they probably followed the livelihood patterns of their counterparts elsewhere in Southeast Asia. That implied counter-balancing the expected rice shortfall by growing or gathering carbohydrate substitutes like cassava or yams, foraging more intensively for edible forest products, and spending additional time hunting or trapping game, some of which could be bartered or sold for

rice in the lean months ahead. Indigenous knowledge thus came to the rescue in addressing the norm of self-sufficiency.

Given long-standing fears of the family's going hungry, the resettlers planted most of their plots to rice as the cultural embodiment of food security. Given the poor soil and lack of water on the Plateau, however, the resettler production averaged 30-60 bags annually, only enough to carry them through four to six post-harvest months. As several respondents emphasized anxiously, they already knew they would be rice deficient in the coming six to eight months. And unlike before, they lacked the knowledge to grapple with confidence in new forms of production that might fill the gap. Since the compensatory wealth of the forest was no longer available to them, how to solve the problem? Though the traditional strategy of cultivating more land! Consequently, the regular refrain: "We need more land; 0.66 of a hectare is not enough"

Resettlers also wanted more land for cattle raising and grazing. Some complained about the NTPC's policy of equal-sized plot distribution, arguing that since some families were larger than others, they needed additional land to produce more food, a rationale reminiscent of the swidden era. Moreover, as some land allocations had been split into several plots scattered in different areas of the village, some farmers felt daunted at having to tend them simultaneously. The problem was exacerbated in this case because the land was so rocky that only a bulldozer could break the soil. People mentioned they had been promised drawdown land and irrigation, but did not know when it would actually come.

It is intriguing that the abundance of fish in the new reservoir is reducing livelihood fears. Families can now catch fish as a free good, in much the same way they once hunted animals in the forest. As before, they can both eat part of their catch and sell the surplus to buy rice. Apprehensions remain though that the fish supply may decline and jeopardize their livelihood strategy of leveraging the commons to buy into rice security.

Supplementary earnings also come from planting vegetables, like maize, cassava, and pineapples. Most of that harvest goes to home consumption, with only limited amounts sold. Digging boreholes has afforded the women enough water for growing mainly subsistence crops in their gardens.

A basic issue, then, is the transformation required of a household moving into intensive cash crop cultivation. This entails not only planting unfamiliar crops, applying fertilizer – organic or chemical – and pesticides, plus intensive weeding, but also the capacity to market the produce and actually understand how the entire system works. It calls for new kinds of trading relationships, a grasp of pricing mechanisms, credit and financial management. Entering the commercial market scene thus raises anxieties when resettlers fear they will not be able to cope with its complexities or learn how to do business market-style. The challenge is daunting to people who less than ten years ago were in semi-isolated subsistence and barter populations, and who can barely read and write.

At the same time a small number of resettlers display potential for adapting to the market economy. These innovators appear more willing than most to take risks and experiment with new technologies in pursuit of higher incomes. Whether they will serve as role models for the majority remains to be seen, but one experience offers hope. One group of villagers confessed that despite promotional programs, they had

not applied fertilizer to their rice fields because they did not believe it would do any good. When at the end of the next planting season their *Nai Ban* harvested significantly higher yields achieved through fertilizer application, they changed their minds and in the next season followed suit.

Fishing

The fish bonanza has some households catching as many as 20-30 kg per day and selling at 10,000 kip/kg, bringing daily incomes up to 300,000 kip (about US\$35), allowing substantial rice purchases. However, cash income from fishing was difficult to establish because the information provided did not adequately discriminate between the fish actually sold and fish consumed in the household.

Some women and children have learned to use the motorized boats usually run by men and distributed to every two adjoining households. Although men received the necessary training, their wives report watching, learning and soon joining fishing sorties with their husband. One woman quipped, "I've gotten so dark being under the sun all day fishing!" Retorted another woman, "Yes, the same with me, but now I can afford to buy powder and have a white face!" (*Laughter*)



Young boys learn reservoir fishing

Women reported that they and their husbands are happy at the large supply of fish, but added they wanted to learn how to process the surplus fish so they could earn more from it. Because they are increasingly involved in actual fish trading, they are eager to gain the skills needed for successful marketing. Some wives point out ruefully that their husbands hold the family cellphone even though they are the ones who need to call out to ascertain market prices and take orders. Husbands counter that they restrict cellphone use by their wives and daughters so as not to encourage

the latter “just to chat”; however, the male members of the family insist they do allow the women to borrow the cellphone.

Fish trading systems are developing rapidly, with outside middlemen striking up partnerships with resettlers. Local village fishing groups coordinate sales to the traders, but complain they are being exploited by the middlemen even as they continue to work with them. Other sources of friction stem from the allocation by the NTPC of one boat per two related neighboring households: competing demands for use of the boat have led some families to request one boat per household. Beyond that is the issue of illegal fishing, with outsiders secretly buying or renting fishing licenses from the resettlers. Electric current fishing has been reported. The effectiveness of reservoir patrols was not discussed but the persistent reports of illegal fishing and poaching indicate that they are not fully effective.

Livestock

Those who have any buffaloes left wandering in the forest have virtually abandoned them to the wild. While they do check on them once a year or so to maintain ownership claims, villagers anticipate that in due course conflicts over ownership rights will arise. Cattle and buffalo raising do not figure prominently in household income-generating calculations. Perhaps this stems for a cultural practice in which the accumulation of large animals like cattle and buffaloes appear linked more to household prestige and wealth demonstration than active commercial gain. Bringing almost wild buffaloes into the village setting could pose problems of control and feeding.

Nevertheless, a number of households expressed an interest in raising cattle but emphasized the need for enclosed grazing land. Cattle, they said, are easier to manage than buffaloes, which are choosy about the kinds of grass they eat. Cattle eat almost anything. Moreover, cattle calves are reported to be less susceptible to disease than those of buffaloes. Some interested households suggested that a revolving livestock fund would accelerate cattle raising ventures. Women favored raising pigs and chickens.

Again, increased labor and other requirements of the new agricultural economy inhibit resettler livestock management. In contrast to the earlier loose supervision of forest-foraging animals, the new economy featuring livestock for sale calls for herding cattle or buffalos into enclosures that require fencing, cutting and carrying fodder (mostly by women) to the animals. As one resettler observed, “Before the animals used to look after us; now we have to look after them!”

Forestry

The loss of the forest as a free source of food and household items is keenly felt, particularly by those families who remain poor and for whom the forest serves as their treasure chest. Although people can still forage, only non-timber forest products can be collected. Hunting and trapping wildlife are now illegal and men caught with that intent or evidence are warned upon their first offense. Subsequent violations bring arrests, fines and jail. Yet, murmur some, this strict enforcement orientation shifts to laxity (a euphemism for corruption), considering the rumored smuggling of logs and animals into Vietnam and China with implied collusion between certain villagers, local officials, and foreign traders.

Although the major forest resources are no longer available to the men, who complain that even walking through the underbrush opens them to suspicions of poaching, women still feel closely connected to the forest. They continue to gather nature's resources of cardamom, mushrooms, and other edible and medicinal plants, fuel wood (but not cut trees), other NTFPs, and with their husbands, resin and honey. As before, these items still contribute significantly to overall household food security. Women complain that special delicacies like bamboo shoots are getting harder to find, requiring them to go deeper and deeper into the forest.

All resettled households earned as much as 1 million kip from dividends distributed by the Village Forestry Association. In exchange, men carried out the required 30 days of reforestation and forest patrols and have occasionally caught poachers. Being much less involved, women lack information on VFA-related opportunities, including wages and dividends.

Training in agricultural, fishing, and trading skills

Village men say that some of the training they receive is too general, hardly applicable in their villages, and not relevant to local materials and practices. Some add that they received training, but "forgot" it. A few of those trained apparently do make the transition, a case in point being the man who reported, "After the training, I had to adjust what I learned to fit the real situations in our daily life."

Often the men are exposed to skills and technical training that also relates to women's work on the farm, yet despite the agreement that they will initiate echo seminars upon their return, they rarely do so. The women report they have to learn simply by watching the men perform new skills. Especially favored are vegetable and cash-crop cultivation, entailing, for example, seed selection and propagation, composting, and the use of pesticides and fertilizers.

Women comment that they do most of the selling for the household, yet they lack the skills and training needed to expand their operations and improve their income. They complain that the bulk of the training provided by the Project has been in male-oriented agriculture, livestock and village management, and that men have been privileged in being selected for training. District leaders and village chiefs are said to favor men over women for training programs. Women say that too many training programs are scheduled for several days outside the community, making it difficult for them to join. Training should take place right in the village so they can participate. Wives engaged in fishing with their husbands want to learn the skills needed for forming a family enterprise. They would like to know how to dry fish and make *padek* (fish sauce) along with fish balls. That way, when the town traders fail to appear and purchase fish, the settler women can transform the day's catch into items for household use and sale. They welcome NTPC's plans to accelerate literacy, numeracy, bookkeeping, and simple management training for women. Those selected should not only be the leaders or the strong ones but ordinary women who need help the most. NTPC staffs observe that the Nakai women seem to be more eager than the men to learn new skills and get into small businesses.

Training of young people in the newer tasks is undertaken in the traditional apprentice mode of sons learning from their fathers and girls from their mothers. Adult elaborations of livelihoods thus find support in the labor of their offspring. As mothers seem readier than fathers to enter market ventures, one can predict that

girls will move faster than boys into the trader domain. This may influence the parents eventually to have their daughters stay in school as long as or longer than their sons.

Wage work

Now that most of the house, dam and road construction projects are completed, men's cash earnings have declined drastically. Young men particularly regret this drop in wage options. A few have ventured to distant places to seek construction work based on their local experience.

Assessing Life in the Resettlement Village

Positive reactions

The vast majority of those interviewed believe their lives are easier and that they are better off overall as resettlers compared to their former village. Both men and women value the opportunities now available to their children. One *Nai Ban* believes that 80 per cent of the resettlers are satisfied, and that the remaining 20 per cent simply have to be helped to resolve the livelihood problems they still face. To the question as to whether any of the residents have left the village, possibly indicating dissatisfaction, the villagers visited reported that no families had left. In fact, relatives from outside are moving into their households.

A number of villagers stated they would not return to their former villages even if these were not flooded. One woman's comment, "Even if someone gave me a million kip, I would not go back there." Another reflected, "What are my dreams and wishes? I want to have a business. I'm tired of the hard life of moving around in the forest like before. Here there is more money and income, more rice, and you can get rich. I want to develop myself more. Just get my land ready by using the tractor to plow it, and I'll take care of the rest!"

Aspects of the new life most attractive to settler men and women include their large and beautiful Lao-style houses, water, roads and electricity. Motorcycles, bicycles, trucks, and hand tractors stand conspicuously parked outside their houses. In some villages, virtually every family has a television set linked to a huge satellite dish outside. Inside, many display a refrigerator, a sewing machine, and sturdy new furniture. Almost all families in some villages have a cellphone. The rapidly accelerating desire for consumer items can be expected to fuel households' motivations to earn more cash through market transactions. As elsewhere in the world, this will almost certainly lead to increasing disparities in income and well-being within and among villages.



A Nakai woman masters a new skill

Women praise the easy access to potable water through nearby hand pumps, health clinics, schools, and pre-schools. Interestingly, they did not mention toilets. While their use of these facilities varies, they recognize that the services can add significantly to the family's well-being, especially the future of their children. One mother commented, "Before we had to pay the teacher to walk to our school, even crossing the river; now the teachers are right here and school is free."

Household celebrations around weddings and funerals bring people closer together and enable them to help one another. Similarly, the New Year's celebration is festive and restoring. People visit one another's households, eat and drink "until we are full." One respondent noted, "Before we had to consult with the spirits to see whether it was all right to kill a chicken or pig or sacrifice; we had to pray for rain and good crops. Now everything is provided for us." Is dependence on the spirits shifting to dependence upon the Company?

Lingering fears

To summarize, it is clear that anxieties build up when households plunge into a new economic setting where they have a reduced sense of control over its operations and directions than in their previous lives. A concern regularly and strongly expressed is that households cannot be certain they will have enough rice to last them throughout the year. Although NTPC technicians try to convince them that they will make greater profits if they plant less rice and instead put in high value crops and use the resulting profits to buy rice, most householders remain uncertain or skeptical. Far from sure of themselves as successful operators in the new commercial and money economy, and fearing unpredictable price fluctuations, they continually assess the viability of their households in terms of assured food security for the entire year, whether through production or purchase. At the same time they sense that the former comfort and security of managing a swidden forest-farm ecosystem they understood are no longer possible in the new and unfamiliar setting of their agriculturally-based commercial market ecosystem.

Some of the longstanding fears of not being able to assure a year-round rice supply have been offset by the reservoir fishing bonanza. Households have readily adapted to this new livelihood source, with even women able to participate independently through non-boat and sometimes boat-oriented operations. Nonetheless, apprehensions were expressed as to whether this windfall will continue over the years. If the fish supply declines, households will have to rely on the more complex forms of commercial enterprises that some find daunting.

While restrictions on forest use are deeply felt, settlers can enter the forest for NTFPs lessening their sense of discontinuity. Enforcement of the new anti-poaching rules has led to resignation that they must comply with the government's encroachment rules. Several women felt a sense of loss that they no longer have trees, especially fruit trees, which buffered their homes against strong winds and yielded fruit they now have to buy.

The lessened dependence on spirits to sustain their lives, while still integral to their culture, may be interpreted as part of a modernizing process, but it may signal a shift toward greater dependency on the Company and the government. This raises yet again the issue of sustainability of these evolving livelihoods once the NTPC withdraws and the government is left to support resettler development. The villagers are well aware of this prospective situation, which brings added anxieties.

Although most villages harbor a mix of ethnic groups, no sense of alienation, discrimination or animosity surfaced during the community discussions. Whether this means increased harmony or a live-and-let live orientation, or the burying of uncomfortable information is difficult to say. Some leaders remarked that certain ethnic groups, like the Hmong and Makoong, seemed to adapt better to the new economy than others like the Bo, who seem especially shy.

We heard many women speak positively about the opportunities from fishing and other activities to improve their families' livelihoods. The women we spoke to were eager to help fill the income void now that their family cannot grow rice to accommodate year-round consumption. Their eagerness may stem in part from their now being spared the long walks for water, intensive forest cultivation, and child care of their former life, thereby enabling them to venture into other productive activities. Since they see trading as mainly a women's activity, they insist they need support through training directed more towards them and made available in the village. At present they perceive a bias towards selection of men for off-site training which is sometimes only partly relevant to their communities, and which bias, they say, needs to be corrected.

The typical household strategy especially on the Plateau appears oriented around the insistence on assured food security through rice cultivation. This may explain settler appeals for more land to expand their rice supply in keeping with the traditional subsistence outlook. The fishing windfall, which parallels the hunting and gathering regime of the open forest, has encouraged households to adapt quickly to the new ecosystem. It is fairly simple and easy to learn and brings enough cash sales to allow the purchase of rice and other household needs. While these households still rely on the subsistence economy outlook that served them so well in the past, the fishing income is now modifying this orientation so as to incorporate commercially-based livelihood into their cultural repertoires. The fishing, enterprise, however, is easier to master than commercial farming of unfamiliar crops in barely fertile land with limited water supply.

Wanting more land for cultivation and grazing remains a common theme. The link to parental reflections on the future of their children and the realities of relatives trickling from outside to stay with their resettler kin may explain in part this frequently expressed theme. However, it may also reflect reactions to the new commercial economy, suggesting that the prevailing outlook shows a continuing reliance on and preference for the subsistence economy framework as a reliable one for dealing with the present and future of one's children. It should be noted however, that the kind of subsistence economy currently practiced has been reformulated to adapt to the new way of life. Change is happening.

This modified subsistence orientation gives priority to basic food security- rice, complemented with additional earning opportunities. The abundance of resources – land for rice cultivation combined with fish, cattle, NTFPs from nature plus subsidies from the Company – is what sustains people. It enables them to replicate in new forms an essentially subsistence economy outlook. Thus, the resettler transition into trusting in and committing to the uncertain market economy will take a predictably long time unless women achieve their wish to move into it more rapidly. In the long run, adaptation to the market with less attention to the subsistence orientation will likely emerge firmly only with the next generation.

Guidelines for the NTPC and Government for Community Research and Engagement – Nakai Plateau

Rather than propose specific recommendations flowing from our village discussions, we suggest here some guidelines from a social anthropology perspective for future participatory gender- and age-sensitive planning and evaluation with communities affected by the project. Most of these guidelines apply as well to affected persons in Project Lands and Downstream.

- Technicians need to learn how to work with village households in an iterative, mutual -learning style. Recognizing that situations differ between villages and within villages, technicians should link more closely with people in the villages to comprehend these variations.
- According to some women, technicians should resolutely avoid “flower reports,” or accounts that say only favorable things about the program.
- Involving the villagers in participatory decision-making processes instead of “blueprint” approaches or “one-size-fits-all” will help.
- Enhancing the skills and capacities of women offers promising results as they are the ones most eager to venture into new experiences beneficial to their families. Since women may not be accustomed to speaking out in public, it is important to consult them in ways that bring out their voices and views.
- Adolescents and young adults – male and female -- embodying the next generation are more likely than the current one to move with confidence into the modern commercial economy. It is important they gain at least a high school education whose curriculum responds to the new rural economy.
- Academic social scientists and non-government organizations (NGOs), including Lao NGOs, can help greatly by carrying out studies and

programs identified by the resettlers as important. The knowledge acquired by advocacy NGOs and village-level academic researchers should be utilized in planning processes. Greater interaction is imperative between these groups, on the one hand, and the physical planning, management and engineering technology staff, on the other.

- Careful monitoring of fish availability is needed in the event of declines in the supply, and alternative income sources identified, otherwise many families may revert to the strictly subsistence orientation, which becomes a recipe for poverty.

Recommendation 9-9.

The IAG recommends that the GOL and NTPC note our suggested guidelines and incorporate them into their processes for participatory planning and evaluation with communities affected by the project, with particular attention to women and young people.

3.4. Agro-Forestry Farmers in the Project Lands

In keeping with the emphasis of this report on livelihoods, the ensuing discussion highlights the ways in which select groups of affected villagers have viewed the impact of the dam on their lives. Again, no claim of representativeness is made regarding the focus group discussions and interviews conducted by the IAG in two Project Lands villages comprising over 100 affected households. Rather, the findings are offered as insights that enhance understanding of people's perspectives and the meanings for them of the changes underway. These data complement, expand and nuance the LSMS Survey and the Family Books.

Life Before the Project

Before the Nam Theun dam came into their lives, the largely Makoong farmers grew upland rice and tended vegetable plots at the base of the Nakai escarpment. The villagers' cattle and buffaloes roamed freely in the nearby forests, while pigs and chickens led similarly free-range lives. Some families engaged in swidden cultivation and all residents collected non-timber forest products for household consumption or sale. Rainfall and irrigation ditches from the river nearby provided sufficient water supply for the paddy fields and households most of the year. This combination of resources offered the family reasonably satisfactory livelihoods mixed with occasional difficulties that called for vigilance and hard work to maintain the precarious balance of forces.

Improved well-being through basic services and expanded livelihoods remained elusive, however. When households tried to market their goods, the poor road conditions and limited transport facilities seriously undermined their efforts. Ready access to health facilities, schools, and wage or supplementary earning opportunities was virtually non-existent.

Life Since the Project

The early years

The arrival of the project transformed the region into a land base for the power house, canal and other project structures. As dam infrastructure support systems fell into place, intense interaction got underway between NTPC and government on the one hand, and affected Project Lands households, on the other. Storage dumps, access roads, workers camps, bridges and river diversion structures were soon cutting across or eliminating entire rice fields, vegetable plots, and houses. Any household slated to lose its land or related assets was assured of its entitlement to compensation. This would come in the form of cash payments, substitute land allocations and increments like irrigation water and technology improvements. The village as a whole would also benefit from basic services like health centers, schools, potable water, sanitation, and paved village-to-market roads.

The amount and nature of compensation to households depended on specific land and asset valuation. Pertinent was whether the household fell above or below a threshold of 10% loss of land and other assets, since the rules applied differently to the two sets. One-on-one negotiation would later determine the final outcome for the household. A new approach to livelihood came in the form of household management plans designed to enable the family members to take maximum advantage of project livelihood benefits. Because the complex compensation scheme proved confusing to many households, downright unjust to some, and too slow in implementation, the contentious negotiation process lasted several years.

Community complaints or outright protests required ongoing clarification or renegotiation of entitlements, queried the criteria used for determining claims, and criticized the process itself. Community meetings were held to explain the project aims and requirements, but the complexity of the rules and the limited time allotted to discussing them diluted local comprehension.

The consultation style of many district officials in the early years of the project further inhibited two-way communication and understanding. Some community groups met by the IAG during its 2008 village visits mentioned that a local official would convene the affected persons in large meetings, inform them of the new rules, attempt (unsuccessfully) to explain the complicated schemes, and end by announcing the expected results. In keeping with traditional hierarchical interaction, most villagers remained silent. The resulting confusion seems to have generated a passive kind of response or retaliation at the time in the affected persons' minimal and slow-moving "compliance," that is, doing just enough to demonstrate cooperation but not enough to move the project forward – a strategy known in social science literature as "the weapons of the weak."⁵

⁵ James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance*, New Haven, Connecticut: Yale University Press 1985.

The later years

By 2009, compensation and related issues had largely been resolved, most of them satisfactorily, even though some lingering resentments and jealousies remained as various households compared outcomes and services. Village gatherings became more open and solution-oriented, with more district officials facilitating community discussions rather than simply informing the community. Some affected persons complained about delays in district and provincial compensation payments. Household members gained confidence about raising their concerns and differences of interpretation with the NTPC technical staff. Despite occasional tensions, villagers appreciated the flexibility and personal attention given by the latter to each household's compensation package and plan, or to a community's specific grievances and their resolution.

Agriculturally related livelihood problems covered a wide range of location- or household-specific issues. Some farmers contended that where once they could cover their rice needs for the year from their own fields, the fragmentation of their lands into several parcels, even if compensated, disrupted their harvests, leading to only partial fulfillment of their food security goals. Irrigation, which could double their crop yields, was often mentioned as an important and much needed benefit.

Site specific issues emerged that had to be negotiated between the community and the NTPC. One wanted a bridge or walkway built over the flooded paddies and streams so that children could walk a shorter distance and more safely to school. In another village vegetable crops had reached a height considered inappropriate under power pylons. When these plots were fenced off, disputes arose about farmers' access to the land, leading to the fences eventually being torn down. Back flooding brought additional compensation claims.

Other problems surfaced. The identification of new land by the Project sometimes proceeded too slowly. Accordingly, some affected households felt compelled to make their own acquisition arrangements, thereby upsetting the NTPC system. Still others under the 10% cut-off point continued to insist the definition was spurious and that they should also have access to training and technical assistance from the Project just like those above the 10% line. Responses from technicians that these were World Bank rules beyond their control did not help explain what appeared to some villagers to be an arbitrary and unrealistic set of standards. Further, some households set aside their livelihood management plans when the income earmarked for new schemes was allocated instead to purchasing basic food needs, to the recovery of sick family members or some other household requirement.

These specific problems were generally offset by the favorable judgments in many spheres. Affected households welcomed the Project's attention to supplementary income generation schemes. These schemes include improved seeds and cultivation technology for the women's garden crops of beans, eggplant, bananas, sweet corn, sugar cane, and tobacco; capital for women to pursue their weaving skills; small livestock raising (pigs, chickens), mushroom cultivation, grasslands for cattle raising using leftover straw for mushroom culture; and frog raising and fishponds.

The availability of enough water to sustain many of these economic ventures continues to be raised as a problem. The compensation money and additional incomes have been reinvested in several ways: new land, building or repairing

houses, engaging in business, and purchasing consumer items like motorcycles or household appliances. Some families are reported by their neighbors to be making little effort to engage in new activities, preferring to fall back on the windfall compensation money paid them. These women appear to be criticized most severely by other women as lazy.

A notable innovation has been households saving money in banks instead of hiding it in secret places at home. Several of the men, especially the younger ones, earned wages from working on the project during its construction phase but this much heralded opportunity has since declined. Highly praised are the basic services now open to the villagers: health clinics, schools, and farm to market roads.

Women expressed their views strongly about restrictions in their own situations, feeling freer to do so when consulted in groups separately from men. They lauded the availability of potable water including the clean river, health clinics (but added not all villages had them), schools (but remarked that theirs only had two grades and should be a full elementary school, along with the building of a high school nearby), paved roads to town and the market (but only in some villages).

There are down sides too. Overall, they explained, women work harder now than before because they have to walk to several smaller fields instead of the single larger rice plot they used to have. In addition, the vegetable farms of some are now located 2-3 km from their houses, requiring a long and tiring walk to get there. Sometimes they even have to carry water with them for parched crops. Moreover, since households now have to buy rice because their current yields are not enough for the entire year's consumption, women devote more time and energy walking to town. Several indicated that they felt uncomfortable having to travel far outside their village.

Mushroom culture has brought added incomes, which a few women invested in upland plots for cultivation, only to discover that this kind of forest farming was now forbidden. They value the ability still to gather non-timber forest products. As weaving constitutes an important tradition and source of income, they seek added capital for purchasing the materials and assistance with new designs for better sales. Their need for trading and marketing skills is often mentioned along with suitable transport to get to town. The capacity to identify and engage in new income opportunities is an overriding concern.

Even when women have actively participated in training schemes offered to them, they complain that some of these technical innovations do not work, e.g. they plant grass for livestock feed and sale but many of the animals die in the dry season; raising pigs, chickens and frogs has brought added income but animals have also died during the dry season; other experiments around vegetable farming failed mainly for lack of water. These unsuccessful efforts wiped out the women's hard-earned investments of money, time and effort.

Although in the parents' views the project has provided more opportunities for their children, it carries with it the dangers of the new and unfamiliar. Memories linger of the 13-year old girl who drowned in a nearby channel. Mothers subsequently forbade their children to swim there as they once used to. The project installed a fence soon after to keep swimmers out. Women wish there was more wage work for their adolescent and adult children, a desire that propels their request for a high school nearby.

Women generally resent their exclusion from information and decision-making systems that affect them, pointing out that the only times they are allowed to attend a village meeting is when they are invited to represent a husband who is away. Not only, they lament, has this exclusion had an impact on the household economy which they regularly manage; it may negatively affect their collective household wellbeing well into the future. A case in point was the Ban Lau woman, who pointed out that because women inherit and cultivate the vegetable garden plots and work on the rice fields, they know the value not only of the land itself but also of the products generated by it. The men do not grasp these details since it is not part of their cultural information repertoire, especially if the group follows matrilineal descent rules, where land is passed on to daughters rather than sons. Yet, when the Project sent technical teams to Ban Lau for land and resource valuation, they convened only the men in the village to obtain the data. Women, who had the information, were not invited to join the consultation or the land walk-throughs.

Consequently in her case, since her husband did not possess accurate knowledge of her land or its produce and how much its actual sales and imputed values came to, she claimed her land was grossly undervalued by the Project. In her view, her entire household and probably others initially lost out as a result. The matter was subsequently taken through the grievance process, and the protesting woman did not provide further information as to where the matter stood. Her point is nonetheless worth noting: women's non-inclusion in important community consultations can have a significant negative impact not only on the women themselves but on the entire household. It is noteworthy that the apparent gender blindness of the early compensation process has since been rectified by NTPC.

Assessing life in project lands villages

To summarize, the men, women and youth interviewed believe that overall, the dam's positive aspects outweigh its negative consequences. They see the trade-offs as worth it in improved livelihood opportunities, basic services and infrastructure access. Women specifically point out that even though the new land and market economy mean more work for them, they welcome it because they and their families will benefit.

Yet, household members retain a lingering sense of unease and vulnerability in thinking about their future. They are familiar with the market but are not sure they can master it and sustain the new ventures well enough to compensate for their apprehensions over food insecurity. They hope their children will prosper as adults but remain uncertain it will happen.

Driven by the prevailing cultural norm of producing sufficient rice for the household on their own plots, their household strategy focuses on expanding their land holdings as much as possible to achieve the year-round need. The alternative of buying rice to address the shortfall instead of growing their rice needs is already happening and generating some tensions. Some may see the cash outlay as depriving the household of other basic needs in the focus on guaranteed household food supply. Others may regard rice purchase as an investment toward an increased income in that the land may instead be allocated to crops of higher market value. The former follows the modified subsistence orientation, while the latter shifts more purposefully into the market economy mode.

It is mostly their children's future that parents worry about in welcoming new opportunities from more productive agriculture through expanded land holdings, irrigation, roads and bridges, and profitable market transactions. They express concern that the lack of a high school nearby and scarce wage work for the young people will diminish their children's life chances. The limited learning opportunities for modern commercial agriculture on their own farms, as well as in trading and other entrepreneurial activities do not augur well for training the younger household members for a commercial future. In terms of livelihood entrepreneurship, women appear to have the greatest flexibility and interest in expanded economic activities that build on their existing knowledge, risk-taking and innovative inclinations. This and their intense concern for their children's present and future may explain why they appear to be more driven to identify and utilize new opportunities. They harp on the need for training and their desire to participate in household and village decision-making to be able to deal with this new mode of living. Their concern about continuity once the Government takes over, adds to their litany of worries.

Guidelines for the NTPC and Government– Project Lands

We recommend the following guidelines for further human development in the Project Lands:

- Programs of community development, credit, and technical efforts focusing on the village level aimed at enhancing newer income sources should be established and built into district-level governance now for continuity of support. This will help farmers gain a sense of mastery over the new market economy, give them the leeway to rethink the uses of their rice land and perhaps shift gradually into high value crops as part of their year-round household rice security strategy
- The development of a young cadre of competent agriculturists, fisheries and livestock technicians will be greatly reinforced by establishing high schools with easy access for male and female youth. These should offer training in agriculture and technology pertinent to an evolving modern rural economy.
- Women need to be assisted to engage more intensively in the new market economy through improved agricultural skills, trading, basic education and skills training, improved health and family planning, micro-credit, support to weaving and other crafts products for commercial purposes, personal empowerment and enhanced participation in decision-making.
- Serious attention must be given to intensive capacity training of district and provincial officials and to the identification of institutional reforms required for the government to take over successfully the functions that will be phased out by the Company.

Recommendation 9-10.

The IAG recommends that the GOL and NTPC note our suggested guidelines concerning farmer households in the project lands, taking proper account of gender and age, and incorporate them into their processes for participatory planning and evaluation with the men and women of communities affected by the project.

3.5. Agricultural Farmers of the Xe Bang Fai and hinterland

The impact of the dam on downstream farmers of the Xe Bang Fai⁶ is only now emerging with the actual release of water. While previous IAG village conversations concerned people's speculations and anxieties as to what *might* happen, the 2009 visits to two downstream villages yielded information on actual happenings. The dominant Lao Lum population along with a few Phu Tai residents brought a realistic tone to the interviews when they spoke of dam-related activities now underway or basic services in place. Speculation and continuing apprehensions surfaced.

Life Before the Project

Villages downstream were generally populated by rice farmers who produced one or two crops depending on access to irrigation. Both men and women labored on rice farms, but women mostly cultivated the vegetable gardens growing corn, cassava, and beans. Fishing in the Xe Bang Fai and its tributaries brought food and cash to the household. During the dry season the drop in water levels gave families the chance to cultivate riverbank gardens. Rainy season flooding allowed other livelihood opportunities, like fishing farther inland and harvesting small riverine creatures stranded in the flooded paddy fields. Raising livestock, mainly cattle, pigs and chickens, along with weaving, traditionally done by women, further bolstered this agricultural cycle.

Livelihoods dependent on nature's vagaries were never truly secure or predictable even then. Deciding how best to prioritize family labor in the multi-tasking context of agricultural households always posed a challenge. For those living at some distance from the river system, fetching potable water for drinking and cooking formed part of the daily drudgery. Sick or injured children added to women's worries because of the distance to a health clinic. Because many school-going children walked long distances to their classrooms and spent many hours there, the question of trade-offs invariably came to the fore when their labor was required for farming or household tasks. Opportunities for wage labor, especially for young people, were sought but rarely found.

Despite these uncertainties and challenges, agricultural households derived comfort and security in the centuries of indigenous knowledge they possessed in agricultural management and their long experience of fostering family well-being under often difficult circumstances.

Life Since the Project

In November 2009 when the IAG visited the downstream communities, the latter had not yet been exposed to one full year of the dam's effects. Much of the major direct impact of the NT2 project, which is the marked increase in dry-season flows of water down the Xe Bang Fai, were not yet in evidence, although occasional water releases from the powerhouse had, disrupted some riverbank activities. The changes that villagers talked about concerned not so much the effects on agriculture and livelihoods, but rather the benefits being introduced by the NTPC to offset

⁶ Our project timetable did not leave enough time to visit the communities downstream of the Nakai dam.

potential livelihood losses and to increase income. Since the planning and implementation of some of these innovations had been launched some years back, a reasonable amount of experience had already been built up.

Foremost among the changes mentioned were improvement in irrigation schemes. Diesel pumps had been set up to send a steady supply of water from wells to the fields, while other pumps stood on raft-pontoons floating on the river. Those farms farthest away from the river got the irrigation water first in an equitable distribution scheme devised by community members in collaboration with project technicians. To supplement water drawn from the river, one well was dug for every 20 households. These improvements will enable farmers to plant a second crop of rice during the dry season.

The new agricultural technology envisioned by the NTPC formed a network of services including improved rice seeds, fish ponds, frog and livestock raising. A Village Development Fund, managed as a revolving fund by local residents, provided loans up to 2,000,000 kip at low interest rates. Micro-enterprises appeared in the form of saleable new woven products or livestock chain ventures that called for contributing a calf or piglet to the rotating scheme in which new offspring are bred and then redistributed to other households.. Technical support and training for women weavers interested in improved designs and better marketing of their products were enthusiastically welcomed. An actual display and trading center located in Mahaxai, assisted by an initial grant from the World Bank, responded to those needs. Another innovation eliciting great approval was the loan scheme for young people partnering with an adult mentor, to encourage youth-run small businesses. The introduction of electricity to households implied still more opportunities in the offing, although reservations were expressed about the cost of electricity.



Irrigation pontoon pump on the Xe Bang Fai

Operating in this new environment posed some serious challenges. Rafts holding the pumps could be overturned as the water level dropped or were swamped in river surges, their hoses readily disconnecting. Diesel fuel to run the pumps was proving too expensive for some. Stocking fingerlings in fish ponds sometimes resulted in the larger fish eating the smaller ones. Although the seasonal flooding of the Xe Bang Fai was necessary for the main rice crop, the cultivated pond fish could be swept away by the flood waters, to the delight of neighbors harvesting the fish windfall. Species like catfish suffered from diseases as water temperatures increased. Raising fish and livestock also meant the added financial burden of procuring food for them, either from nature or through purchase. Nor were veterinary services readily available when needed.

Although the downstream project did not include development benefits from NTPC, some households expected that it would set up health clinics, construct roads, build and add classrooms to schools for full elementary completion. Perhaps the expectation was reinforced by news filtering in from Project Lands households. Or, raised expectations may have come from the provision of free toilet bowls in 50 downstream villages. The recipient only had to pay the transport costs from distribution center to home. Many took up the offer, but others stated they could not afford the 50,000 kip delivery fee. In any case, a number of respondents did not appear to understand that development activities furnished by the NTPC on the Nakai Plateau and Project Lands did not extend to downstream areas. When queried, NTPC personnel informed villagers that the government, not the Company, was responsible for any development benefits to the community during and beyond the project.

Women had their own particular responses to the new scenario. Like their counterparts upstream, they observed that they now had more work than before with the advent of a second planting. Cultivating the dry season irrigated rice took its toll on the time and energy left for their garden crops and livestock raising. But what they missed most was the time they formerly spent weaving in the late afternoon and evening. Not only was double-cropping depriving them of the added income envisioned from anticipated sales, but also of the pleasures of weaving as a creative pastime. Although they now had electrical lighting in their homes, the added expense prevented them from utilizing it to brighten the loom area.. Nonetheless, they were adjusting to the new work pressures because these brought income and enabled them to purchase appliances for their household, like sewing machines, radios, bicycles and even motorbikes. Interestingly, cellphones did not enter the conversation, perhaps because here too the men held them. Although the money earned from weaving was considered the women's to spend, they usually consulted their husbands on any planned purchases.

The weavers in one village revealed that they had organized themselves into an association, which produced traditional textiles using exclusively natural rather than commercial dyes. To guard their artistic niche position, they needed better designs and marketing skills. Credit was also important, but borrowing money for a prospective business brought some discomfort. This was because women were not accustomed to borrowing. Indeed, in their culture it was considered shameful to do so. Even worse would be the anxiety of not being able to pay the loan back on time to the Village Development Fund (VDF) if the activity failed. Unsure as they were of the commercial viability of their enterprise, they were afraid to take the risk of institutional borrowing.

Immediately after relating this to the IAG, the weaver group cited favorably the example of their association leader, who had acquired a substantial loan from the VDF that she on-lent to the interested members among them at the same interest rate she was paying. They also got their share of dividends related to the VDF scheme. This intermediary support would mean the women members' not having to go through the formal loan application process themselves. Moreover, unlike the VDF, the leader could be flexible with regard to member repayments to her. Delays could be condoned for a reasonable period of two to three months and handled in a culturally suitable way like advances from others and cross-subsidies. Group solidarity and trust ensured eventual payment by any struggling member or a search for some other suitable solution. The leaders expected that when women became more confident about their business ventures and to handling loans, they would feel more comfortable about applying directly for a VDF loan. Her scheme introduced an incubator approach in the meantime.

The Lao Women's Union counts every woman in the country as its members and carries out a number of training programs for women village leaders and for income generation. However, this mass-based organization's limited funds and personnel have not yet enabled it to mobilize a critical number of active and engaged women at village level to make a significant dent on livelihoods.

Assessing Life in Downstream Villages After the Project Operations

In summary, when we visited in November 2009, the changes in Xe Bang Fai river flows, which are the main impact of the project had not yet been observed throughout a full annual agricultural cycle. Villagers thus voiced only a few actually experienced complaints. These stem from faulty or non-adaptive technology, as in fishpond cultivation or pump arrangements. Clear benefits are highlighted as additional water from the river and wells that support a second rice crop. This development has brought about rice security in several households along with surplus rice for sale. It has also helped generate or enhance added income sources. The sanitation activity is likewise valued.



Spinning cotton in Ban Keng Pe

The Village Development Fund appears to be taking off, although still patronized more by men than women. Though there were never formal restrictions against women borrowing from the Fund, the limitation of loans to only one family member had the effect of privileging the men and marginalizing women as potential borrowers. The women's protests of the previous year seem to have been successful since more than one household member may now apply for loans. This has enabled additional numbers of women and even some young people to seek formal access to credit for productive ventures.

Continuous training in the new income generating schemes being introduced or upgraded would give innovators the experience and confidence they need to take business risks. This applies especially to women, whose role has been more as laborers or farm workers for the household than entrepreneurs. Their eagerness to get into market-oriented activities as well as their interest in community decision-making suggest that they would contribute significantly to enterprise and village development programs. Their incentives go beyond that. As one woman reflected, "With my income from weaving, I can buy things for my family and my husband respects me more. Now he even informs me where he is going and when he will be back!"

To questions on their worries and dreams, one group of women drew a composite picture: concrete irrigation canals that reach every field, enough drinking water for everyone with piped water in every house, all roads paved, a health center, and a complete elementary school so that all children will know how to read and write and get better jobs in future. Exclaimed one impatient elderly woman, "I might die before this village really improves. I want to see that day!" A monk sitting nearby

added that water connections in households were necessary because at the moment most people drew water from the temple.

On a lighter note, one woman reflected on her life as she aged in her reasonably abundant agricultural setting. “I enjoy my life more now than when I was younger. My children want me to be happy so they support me. If I want to earn more, I can work as much as I like. If I want to relax, I can do that, too. Since I don’t menstruate anymore, I can travel anywhere and stay in other places with no restrictions.” Such was her assessment of the good life. Whether forthcoming electricity generating operations upstream will affect the Xe Bang Fai enough to threaten rather than enhance the wellbeing of those living downstream, only the coming years will tell.

Guidelines for the NTPC and Government - Downstream

We recommend the following guidelines for future development downstream:

- It is important to monitor the effects of changes in land and asset patterns, focusing separately on household unit earnings, on male- and female-disaggregated earnings, and the earnings of enterprising youth, and to ascertain how those affected express their satisfaction or apprehensions, and think about their household’s present and future well-being.
- Project development and training schemes should be set up so that the proponents and trainers of new market-oriented activities spend more time in the villages interacting with local innovators – men, women and youth – to ascertain how these proposed actions operate in real and varying field situations. They can also offer follow-up assistance to identify interim problems and opportunities affecting the sustainability of the enterprise.
- The handover of development programs from the company to the GOL requires intensive training for district and provincial officials as well as carrying out of institutional reforms.

Recommendation 9-11.

The IAG recommends that the GOL and NTPC note our suggested guidelines concerning the downstream population of the Xe Bang Fai and incorporate them into their processes for gender- and age-sensitive participatory planning and evaluation with communities affected by the project.

3.6. Final Remarks

The people in the three areas affected by the dam construction and operation have been characterized differentially in terms of the adaptations they have made and will continue to make. Before the hydro project, all of them relied heavily on some version of a subsistence economy – from the most autonomous hunting-gathering and swidden forest farming version on the Nakai Plateau, to the marginal Project Lands agro-forestry households, to the commercially oriented agricultural Downstream farmers who despite engagement with the market still consider rice growing as intrinsic to their food security.

The ethnic groups of the Nakai Plateau who were engaged in forest-farm swidden cultivation with very limited external contact before the dam are now being drastically transformed, ready or not, into agricultural farmers living in neighborhood blocks laid out like a town center. They share their settlement with large numbers of ethnic forest dwellers displaced like themselves and being similarly nudged if not pushed into the market economy. From a reasonably secure and stable subsistence life emphasizing food security management, they have been plunged into the fluctuating and uncertain commercial world of the market.

While their prospects of reasonable livelihood from commercial agriculture remain daunting, some are learning to handle it. The sudden reservoir fishing bonanza is teaching them how to transform subsistence items into tradable commodities. The ability to adapt to their totally new circumstances will depend on how consistent the fishing supply remains and how quickly women and the next generation can grasp and master the commercial realities of their new world. They have come a long way in a short time from simply selling or bartering a few forest products to outside buyers and in return bartering or buying matches, lighting oil, and salt, to a situation of full-scale trading in thousands of kip.

The pre-dam livelihoods of Project Lands agro-forestry residents relied on their agricultural plots, livestock and the forest harvests that also allowed them to engage peripherally with the market. NTPC compensation payments have expanded this venture a hundredfold. Affected households sell and buy property, engage in new commercial enterprises, and welcome the installation of basic services. Their success will depend on how this generation of parents and their offspring adapt to and find their niche in an expanding market while maintaining their resiliency as village communities.

Finally, downstream agricultural farmers are only now beginning to experience some effects of the dam operation, so far still minimal and mostly favorable. The fear of unseasonal flooding or insufficient water is linked to their drive to overcome any constraints to expanding their rice and other products so as to move successfully into the market economy. Women are especially ready to take on those added challenges.

NT2 has generated positive movement from subsistence farming anchored on food security through rice growing to expanded commercial production that integrates food security with market production. Significant changes in social situations tempered by cultural considerations are likely to follow. Thus, as household fortunes improve, extended kin will be drawn to move in, contributing additional labor to the affected households and, following traditional norms, share the benefits of their good fortune in having a relative as a Plateau beneficiary. Furthermore, as some households begin to do substantially better than others in taking up new livelihood opportunities, widening income gaps and social disparities will likely emerge between the better-off adapters and the less able ones. Furthermore, as some households begin to do substantially better than others in taking up new livelihood opportunities, widening income gaps and social disparities will also emerge between the better-off adapters and the less able ones.

These disparities can never be completely compensated for, and some of them are managed by the traditional social safety nets of extended communities. These suggest priorities for relative support in development activities for less well off households. Poverty in the sense of exclusion may indeed become a reality, unless

specific measures are taken to ensure that no households are left behind. These may include special subsidies for women-headed households with no adult male worker or elderly dominated households. They may require targeted follow-ups to ensure that the children of the poorest households are going to school, are enrolled in vaccination programs and that their mother is getting the labor assistance and training skills she needs.

The NT2 project demonstrates that the challenges of the physical transition of affected populations are being met. The adaptation of people to the radical and abrupt transition in their lives is a challenge of a different order. Uncertainty and fear go hand in hand with an easier if less secure life. The goal of the project now must be to work with the affected people in ways that will restore and enhance their sense of capacity. It must encourage their adaptability without unduly sacrificing the traditions and sense of dignity that make them who they are.

4. WIDER ISSUES FOR GOVERNANCE AND MANAGEMENT

4.1. Protection of environment and common property rights

The plateau and adjoining catchment area are an attractive resource for both local inhabitants and entrepreneurs from outside the region. Regulation and policing are required to conserve environmental values in the protected wilderness areas, manage access to common resources such as the reservoir fisheries, and ensure that the rights of locals are respected. Previous monitoring reports by the IAG, POE and others have identified risks to these objectives in the form of specific incursions. There have been problems for example with the salvage logging operation which was encroaching on the protected zone; as a result, the government suspended salvage logging and drew a clearer line on the northern side of the reservoir to restrict access.

We also heard on our visit about a gold mine, a project of the Ministry of Defense, which was being set up in the Peripheral Impact Zone (PIZ)⁷. There were plans to resettle villagers out of the way of the mine. Generally, access to the wilderness area has been made easier by improved roads, particularly up from Laksao to Nakai via the north-western end of the reservoir; and also by small boats across the reservoir from various landing points in and around the resettlement villages. On the reservoir itself, it does appear that there is some illegal fishing, both by using illegal methods such as explosives and electrocution and by poaching by outsiders without licenses.

Regulations are in place covering both the wilderness area and the reservoir. On the gold mine, we were assured that a WREA certificate of compliance with social and environmental requirements would be required and that the resettlement would not proceed without it. There is a regulation in place for management of access to and use of the reservoir and a system of licenses for fishing. Fisheries regulations cover fishery rights, illegal fishing and the penalties for violations, boat registration and fish marketing. Fish traders as well as fishers require licenses.

Problems are more likely to emerge in the effective enforcement of these rules. Close cooperation between the Watershed Management Protection Authority (WMPA) and the Reservoir Management Committee (RMC) is essential for the management of their joint interest in restricting access to the north side of the reservoir and policing movements around the body of water and its islands. The assistance of the WMPA's patrolling team was sought since a large part of the reservoir is within the protected area. However, the WMPA also covers a huge management area in the watershed, and is mostly occupied in patrolling for illegal logging and poaching. As an initial remedy, the Nakai District, the RMC, Village

⁷ The PIZ is made up of areas adjacent to the protected area of the watershed where certain activities may have impacts on the protected area itself and therefore are controlled.

Fishing Group (VFG)s and the village militia have collaborated to form a task force to patrol the reservoir until such time that the joint RFA/VFG patrol unit becomes operational. We heard a suggestion that cooperation was also hindered because the WMPA was an entity of central government and local staff were therefore answerable to Vientiane. The WMPA currently has a specific budget allocation from the project in accordance with the Concession Agreement. The RMC is directly under the supervision of the Vice Governor of Khammouane Province and is being exclusively funded through 2010 by NTPC with a capped amount of \$150,000. Any further funding contributions would be expected to come from the GOL, but no additional amounts have yet been provided.

A further significant issue is the capacity of the Provincial and District authorities and villagers to police these rules effectively. The WMPA has to cover a huge area subject to many small infiltrations across the reservoir and across the watershed from Vietnam and there are many signs of poaching and other illegal activities. Offenders are caught and are increasingly being prosecuted rather than let off with a warning. The WMPA law enforcement unit operates with a relatively small permanent staff and the assistance of Village Conservation Management Units (VCMU) and Village Militia but struggles to patrol effectively on existing budgets. We heard that on current budgets the WMPA can only afford to put patrols into the area for 10-11 days each month. Similarly on the reservoir, we were told by the RMC that effective patrolling to stop illegal fishing is difficult not only because of the sheer size of the reservoir but also because of inexperienced staff and insufficient budget and facilities. At the moment there seems to be an abundance of fish but this may be because of the predicted fish “bloom” in the early years of the reservoir. As demand rises due to heavier fishing effort and if and when supply falls, the existing fish stocks will need to be managed sustainably and access to them properly controlled.

Recommendation 9-12.

The IAG recommends that:

- 1) The GOL and NTPC review adequacy of patrols in and around the protected area and on the reservoir.**
- 2) The GOL gradually transfer responsibility for the governance and management of the WMPA from the capital to the province.**
- 3) The GOL ensure that licensing regulations for fishers on the reservoir are adapted to fluctuating stocks, including the possibility of establishing catch quotas.**

4.2. Ownership and use of land

On the plateau, the question of individual property or use rights in land and governance of community land and assets is becoming highly salient because of potential competition between uses of land. Now that the reservoir is filled, and villagers are confronting the reality of the shrinking bounds of the land they inhabit as well as legal restrictions imposed on their access to the forest worries and complaints are widespread about insufficient land for rice cultivation and grazing of large livestock.

Land potentially available to a re-settler household for cultivation is in three categories. Firmest is the 0.66ha household plot, of which 0.16ha will be irrigated for paddy rice using small pumps and gully dams. Next, the company and the government are putting a lot of weight on the availability of the drawdown zone for cultivation and grazing. Because the drawdown zone will not be fully available for allocation and development for at least one more seasonal cycle, it is too soon to say how far this land will go to meet village needs. Finally, the CA provides for an unspecified further allocation of land “elsewhere”, “subject to ecological and productive sustainability”.

In this third category, the most likely candidate for additional agricultural and grazing land would be to designate some of the VFA’s 20,000 ha – outside the 8,000 ha currently in production forest - for “agro-forestry development”. This additional allocation could be in two categories: some for intensive cultivation on the same rotational basis as envisaged for the 0.66 ha plots; and a further allocation for grazing and gathering non-timber forest products (NTFPs). Decisions are yet to be made about what land within the VFA’s current 70-year concession would be suitable for these non-forestry or combined uses.

Completing land use planning, confirming boundaries and allocating use and occupancy rights is becoming a high priority. The main issues are confirming boundaries between villages; allocation of titles to individual houses and associated land; further allocation of use rights in the drawdown zone; and demarcating forest and communal land.

There seem to be no major issues about confirming the boundaries of villages or allocation of individual house plots and associated 0.66 ha plots. Surveying by the company of house and 0.66 ha. land plots was completed at the beginning of 2008 before impoundment. Accordingly, the RMU is expected to complete titling of 1364 land plots by the end of 2009, enabling the Provincial Government in turn to move forward on the target of issuing some 2,600 certificates covering both the 0.66 ha land and house plots. GOL and NTPC are currently piloting a Participatory Land Use Planning Process (PLUP) in two plateau villages to build community understanding and engagement in confirming village boundaries, determination of future land use in different categories and individual or collective rights to land.

There are still some significant issues that need to be resolved about occupancy and use. Should plots of land for cultivation (the 0.66ha plots together with any additional land sub-let by VFA) be allocated one to a house, regardless of household size? Should households only retain access to these plots on a “use it or lose it” basis? Will provision be made for new householders (say, members of existing extended families) to acquire land for cultivation? Will land in the drawdown zone and leased from the VFA be allocated to individual households or communally?

How and whether land for cultivation is allocated to households or communally is a question for the PLUP to address. The assumption in company planning is that where a significant investment is required in cultivation, such as the 0.66 ha plots or VFA land for intensive cultivation, title must be securely allocated to a household as the basic economic unit to provide the incentive for the necessary investment in longer-term productive capacity. Perhaps VFA land for grazing and harvesting NTFPS could be managed communally, but only if there are rules in place to prevent a “tragedy of the commons” by limiting grazing and gathering.

Both types of issues – the basis on which land is allocated for cultivation and how communal land is managed – seem at least partly amenable to solutions based on kinship and village governance. The allocation of 0.66 ha plots one to a household may be arbitrary but it seems sensible that the actual use decisions are left to the extended families or clans to which the household belongs. The people concerned in this process will thus be able to sort out for themselves what is the most equitable and efficient allocation of use rights. Similarly, as the company's planning document suggests, user rights could be made inheritable or transferable within the village. The initial allocation of land then becomes less important than the mechanisms for ensuring that it can be efficiently and equitably reallocated. As for communal land, access rights could be managed by the village as a whole. This raises the question of a village authority. Some form of authority will be required to transfer the community assets constructed by the company. Currently one exists in the form of the Village Grievance Authority and its role could be broadened to take responsibility for management of these community assets as well as access to communal land.

Recommendation 9-13.

The IAG recommends that as a result of the PLUP, the GOL define responsibility of a village authority for management of communal land and regulation of use of individually held land.

4.3. Forestry

As a business entity, the VFA has already distributed dividends amounting to 1,000,000 kip/household to its 1,298 household members. In exchange, the members are required to contribute 30 days of labor mainly in form of selection of trees for felling and forest patrol. They must also commit themselves to stop slash and burn and other activities that will destroy their forest. Village Forestry Units (VFU) in 16 villages are being organized to guard and patrol the forest area especially to prevent forest fires during the dry season.

The area allocated to the VFA for production forestry covers about 12,594 ha and is expected to yield about 6000m³ p.a. Trees (largely an indigenous pine and softwood) can be harvested on a 15 year rotation and apparently are sometimes not replanted but allowed to regenerate naturally. VFA is, however, expected to replant some areas as part of its 30 days household labor scheme. Rosewood is still clandestinely harvested for luxury use despite prohibition as a protected species, and if left unchecked may be fully depleted in the next few years.

The income from supplying wood for the construction of resettlement houses and granaries is soon to stop since at the time of the mission, their construction was about to be completed. To sustain its income, in September 2009 the VFA has signed a cooperation and management contract on wood products processing and marketing with Leuan Fat Hong (LFH) International Marketing Company Ltd. The operation started in October 2009 and the VFA sawmill is being extended for wood processing. The company covers cutting and haulage costs and pays a fee for use of the mill. We understand there is also a profit-sharing arrangement. The association has predicted a benefit of 280,000 USD for its logging quota of 6,000 m³/year in the

production forest, which is enough to continue to pay a dividend and contribute to reforestation.

At the moment the harvest from the forest is nowhere near the target in the contract. It was expected that the VFA would be able to cut 6000m³ per annum from its forest lands but it had only reached 2500m³ before the onset of the 2009 rainy season. According to the VFA, the shortfall was a result of a late delivery of their license from the district office and it is confident it will reach the quota figure in the next cutting season.

The main production is sawn for timber used for flooring and walls, kiln dried and fungicide treated and mostly exported to Japan. According to the MAF, the sawn timber trade is only marginally profitable; the future of forestry depends on efficient operations and adding value to timber in Laos. As NTPC subsidies to VFA salaries will eventually cease, the VFA's future commercial viability is a significant issue.

Although the VFA was able to pay a dividend, income from forestry at present makes quite a small contribution to household budgets. With good management and expansion of the forested area it still has the potential to be a significantly greater supplement to income in the future.

The MAF advised us that the government intended to expand forestry by redeveloping degenerated areas and allocating more land for production forestry. The aim is to reforest at the rate of 200 ha/year, which will grow the harvestable area by about 3% p.a. To do this will require about \$1000/ha for clearing, land preparation, fencing and planting, or about \$200,000 a year. There are plans also for agro-forestry: tree plantations as "living fences", associated with NTFPs for example.

The company contract provides a basic income to the VFA that will apparently be sufficient to continue to pay a dividend to resettler households. In the short run the VFA will continue to receive both financial and administrative support from NTPC. In the longer term, plans to maintain and expand forestry on the plateau on a commercial basis will require the VFA to reinvest some of this surplus, by asking its community owners to forego some present income in favor of the future. There is also some suggestion that the current arrangements whereby the village owners contribute their labor to the VFA are not operating equitably. The VFA may therefore also need to consider paying wages to villagers for their labor in the forests and reduce the amount made available as income through the dividend. Both of these factors are tests for the innovative governance model of the VFA.

Recommendation 9-14.

The IAG recommends that the GOL review the present constitution of VFA and consider the appropriate role of waged labor in forest patrolling and other activities.

4.4. Future NTPC and GOL roles in environmental and social programs

During the initial meeting in Vientiane, NTPC provided a graph showing their commitment to E&S is fully maintained at least until 2014. Currently the company is funding, directly managing or providing staff support for or advising on a wide range

of community programs, including livelihoods development programs on the plateau and downstream, health services (in close collaboration with the GOL Ministry of Health), protection activities in the WMPA and on the reservoir, community management of forestry and fishing, and management of village development funds.

Over the next few years, the company will progressively hand over to the GOL or to villages a number of physical assets and full responsibility for funding, managing and staffing E&S programs. The GOL is already playing a significant role in E&S programs through the Resettlement Management Unit, the WMPA's patrol and enforcement activities, land use planning and certification, specialist advisors on agriculture and District staff located in villages. Village men and women are managing their own affairs to some extent through Village Committees and involvement in the Village Forestry Association, reservoir and catchment area patrolling and village fisheries groups handling fee collection and dealing with traders. But the local role will need to grow significantly and both NTPC and government officials – as well as other monitoring groups such as the LTA – have expressed their concern about current local government and village capacity to take on these increased responsibilities. District governments need both to build their own capacity and support villages to develop theirs.

It is important now to bring all plans and actions relevant to these handover issues together under the general heading of company exit from and handover of E&S programs, and consider the associated issues of developing local capacity to manage these programs in future.

Recommendation 9-15.

The IAG recommends that the GOL and NTPC agree on an overall handover plan through to 2014, identifying specifically how GOL will budget for management and maintenance of community assets and for training and placing staff in roles currently undertaken by NTPC and contract staff.

4.5. An integrated approach to water resources management

Nam Theun 2 also raises larger issues about the governance of water use in Lao PDR as a whole. Lao PDR is a member country of the Mekong River Commission (MRC) and has officially adopted the Commission's Integrated Water Resources Management (IWRM) approach to river basin⁸ planning. IWRM takes into account the different uses, users and sources of water for a more sustainable supply. The basic management unit is the river basin or lake basin and not the traditional political/administrative bodies. IWRM is also highly participatory in approach. All sectors in the basin (users, planners, policy makers) must be represented for policy and decision making. This calls for coordination and institutional strengthening to avoid fragmented policies and overcome fragmented responsibilities.

⁸ A basin is herein referred to as the body of water, which could be a river or a lake, and its watershed. Other literatures refer to this as the catchment area.

The Minister in charge of WREA advised us that the GOL was firmly committed to IWRM. River Basin Committees would be established for each river basin. They would be funded on a polluter pay principle and be responsible for flood protection and pollution control. River Basin Committees would be chaired by each provincial governor in rotation and have the deputy governors as permanent members. The Minister however emphasized the need for training and capacity building of the WREA staff in this field.

The natural basins of the Nam Theun and Xe Bang Fai rivers have both been altered by the construction of the Nakai dam and the creation of the reservoir which have changed the hydrological regime of the Nam Theun. The Xe Bang Fai is a separate River Basin but the trans-boundary transfer of water from the Nakai reservoir to the XBF has altered the watershed boundary of the XBF. Technically, the Nakai basin becomes an integral part of the XBF basin whenever there is supply of water to the XBF from reservoir. All these sub-basins are part of the larger Mekong River Basin. There is clearly a close and complex relationship between water quality and water flows in the entire watershed, reservoir and downstream to the Xe Bang Fai and the Mekong. Any action in the higher reaches of the basin affects all subsequent uses downstream.

The logic of IWRM is that this interdependence of water use in a single basin argues for a single integrated approach to governance of the entire resource. At present, management is divided amongst a number of different organizations. In the case of the Nakai Basin, there are different institutions mandated to protect and conserve the resources of the watershed and the reservoir: the Watershed Management Protection Authority (WMPA), the Reservoir Management Committee (RMC), the Ministry of Agriculture and Forestry (MAF), the Water Resources and Environment Administration (WREA) and the National Land Management Authority (NLMA). The WMPA and RMC were created specifically by GOL for the project through PM Decree 25 (2001) and PM Decree 24 (2008), respectively, and their jurisdictions are confined to the Nakai Dam watershed and the reservoir. However, the Central Government through MAF, WREA and NLMA has the responsibility to issue regulations on the management of fishery, forestry, water resources and land in accordance with their respective mandate.

A Social and Environmental Management Framework and Operational Plan (SEMFOP) for the management of the watershed of the Nakai Reservoir was prepared in 2005. It assigned the WMPA to execute the SEMFOP efficiently and effectively for the sustainable development and protection of the watershed and its inhabitants. In light of the creation of the Reservoir Management Committee in 2008, a similar SEMFOP is deemed necessary to serve as a guide among the organizations concerned. Strictly speaking, under the IWRM Framework, the watershed and the reservoir should be managed under one SEMFOP since the supply of hydroelectric power depends on the reservoir and the water quality and quantity in the reservoir depends on the integrity of the watershed. Simply put, the reservoir is the reflection of the conditions in the watershed, thus in principle, the conservation and management of the Nakai basin should be done in an integrated and not compartmentalized way. There is also logic in extending the idea of a single SEMFOP downstream to the Xe Bang Fai.

Recommendation 9-16.

The IAG recommends that:

- 1) The Water Resources and Environment Administration (WREA) facilitate the discussion among the different institutions including the MRC secretariat to formulate the management approach on the Nakai Basin, Nam Theun 2 River Basin and XBF River Basin under the IWRM framework with the engagement of the provincial and district governments in each of these basins.**
- 2) In addition to IWRM, which is the guiding principle of the MRC, GOL take advantage of on-going initiatives of the International Lake Environment Committee Foundation based in Japan (www.ilec.or.jp) in promoting the Integrated Lake Basin Management approach. The guide materials are available in the ILEC website.**
- 3) WREA explore the possibility of participating in the annual ILEC-JICA Training Course in Integrated Lake Basin Management. The knowledge and experience gained will be important in IWRM implementation not only in the Nakai Basin but also for other reservoirs in Lao PDR.**

4.6. Revenue Management Arrangements

Since we last reported in early 2008, further progress has been made on the Revenue Management Arrangements (RMA) for NT2. Revenues should now be flowing to the Government Treasury Account, as commercial sales of electricity began in March 2010. Revenues accrue from the resource levy paid by the company for its water right, government taxes on the company's income and dividends from the government's own shareholding in the enterprise. In the government financial year to 30 September 2010, a provision of 50 billion kip has been made for net revenues after debt servicing. The GOL has undertaken to apply an amount equivalent to these net revenues to finance priority poverty reduction and environmental management programs. While small in the early years, net revenues to the GOL rise rapidly over the next decade and constitute a significant addition to the government's budget for these priority purposes.

As we have previously reported, there are several conditions that must be satisfied for the GOL to demonstrate that it has met these requirements. The amounts that the company owes the government must be properly accounted for and audited; the revenues from the project and debt servicing costs must be identified in the government's accounts; the government must designate "eligible programs" that satisfy the requirements for poverty reduction and environmental management; it must show that it has budgeted the full amount required for these eligible programs and that the NT-2 revenue is fully additional to allocations that the government has already made for these programs; and finally the government has to be able to demonstrate that the total budgets were actually spent for the purposes for which they were budgeted and have resulted in a commensurate improvement in outcomes for poverty reduction and environmental management.

These are demanding conditions and it is unlikely that they will be completely fulfilled for some years – in some cases possibly never. The least concern is about the accounting arrangements for identifying project revenues and costs and budgeted amounts for eligible programs. Improvements to the government accounting system as part of the Public Financial Management Strengthening Program (PFMSP) in which the World Bank is playing a leading role are designed to ensure that these conditions can be met. The plan is ambitious, comprehensive, and more or less on track in execution, but there is still a way to go to meet its objectives. The current draft Public Expenditure and Financial Accountability (PEFA) assessment reports significant issues with comprehensiveness and transparency, fiscal planning, expenditure policy and budgeting; weaknesses in procurement, internal controls and audit; availability of information on resources received by service delivery units and quality and timeliness of annual financial statements; and the quality of audit and legislative scrutiny and follow-up. Some of these conditions create risks for the chain of events between GOL RMA commitments and achieving (and proving) actual RMA commitments.

Over time the capacity development program should lead to more stability in budget execution – particularly in ensuring that budgeted funds actually reach their intended recipients and beneficiaries – and better reporting of results. The new government accounting system introduced on 1 October 2009 enables expenditure to be classified supporting identification of eligible programs as defined for RMA purposes. A first test of the use of this new Chart of Accounts (COA) for tracking eligible expenditures will be whether the Financial Management Information System (FMIS) can produce in-period reports in the new expenditure classification format. Reports are starting to flow on the new system but because not all provinces are on the new computer information system yet, they are not comprehensive. It is also to be hoped that the present program to strengthen the State Audit Office (SAO) will enable comprehensive and reliable audit of government revenues and of expenditures on eligible programs.

The main present concerns are with identification of eligible programs and their benefits for the poor and the environment; and with establishing that the actual expenditure on these programs and their effects is indeed resulting in net additional benefits. The current budget for 2009-10 identifies eligible programs in education, health, rural electrification, rural road maintenance and construction and environmental management. Taking a broad view, expenditure in the first four of these areas can contribute to the alleviation of poverty, provided the programs are properly targeted. The final category provides for strengthening the district presence of WREA and its water testing capabilities which, it is also arguable, will enable WREA better to carry out its mandate for monitoring observance of environmental protection conditions on resource consents.

Of the programs shown in Table 3 at the end of this section:

- Education seems the best developed but clearer baselines are required for provision in basic education, secondary school building quality and equipment supplies.
- Health programs seem only very broadly defined and the program logic is not entirely clear in terms of additional quantity and quality of services delivered. These programs should, at least in principle, be easily measurable: qualified health services personnel, rate and number of

subsidies to poor and health centers achieving a volume of consultations at a prescribed quality standard.

- Rural electrification can be considered significantly pro-poor, given the significant cross-subsidy in electricity tariffs. The number of household connections would serve as a proxy measurement.
- Rural road maintenance and construction is similarly generally regarded as strongly pro-poor. An indicator of benefits is the number of households achieving improved quality of access and reduced journey times.
- Making the connection between WREA funding and the quality of the Lao environment is more difficult. WREA should develop indicators of improved coverage and quality of environmental monitoring.

The main problems with these program definitions are the following.

Eligibility: as indicated, each program area could, if correctly targeted, have beneficial impacts consistent with the RMA objectives. However the specification of the programs is currently sparse and there is little indication of the “program logic” – exactly what connects expenditure to final benefits through the operations of the executing agencies. It is asking a lot of the Lao government to develop sophisticated evaluations of outcomes, but a prior step would be a better specification of the expected quantity and quality of services.

Sustainability: the government opted for funding programs through the development budget administered by the Ministry of Planning and Investment. The positive aspect of this is that there are comprehensive listings of projects in the “book” of the Ministry of Planning and Investment (MPI) and a clear link to the GOL’s National Social and Economic Development Plan (NSED). But the funding is of projects which by definition have a finite life. The original objective of the RMA conditions was that “Programs have benefited from budgeted expenditures prior to selection and have a continuing recurrent financing requirement over the medium to long-term, and with a medium-term financing plan”; but “in some cases, the Government may introduce new medium to long-term programs, reflecting policy initiatives launched under [new development plans].” (From the original Project Appraisal Document (PAD)). The GOL has drifted off this requirement for ongoing sustainable recurrent program expenditure since some of the expenditure in RMA “eligible programs” is non-recurring. Teachers may be trained but will they fill vacancies in rural areas? School buildings may be refurbished but will they be maintained in future? Similar issues arise with other programs.

Additionality: it is in fact technically impossible to prove that expenditure on eligible programs is additional to what would have occurred without the project and certainly very difficult to argue the case without better information on budget expenditures by program than the GOL currently has. As we have pointed out before, the donor community should not be counseling perfection for the GOL when many much better endowed governments would have difficulty providing an acceptable standard of evidence. The test should probably be whether the whole sector or at least its pro-poor/environment component has benefited from an increase in actual expenditure, something that can only probably be investigated in a periodic review of the totality of the GOL’s budget and its impacts, such as a future Public Expenditure Review (PER). However there are a couple of more technical issues where the GOL could look for improvement in accountability. The first is

improving the quality of its expenditure reporting by program, something that should be possible with the new FMIS. The second is to bring its significant off-budget expenditures in some relevant areas (e.g. the Poverty Fund) into the budget.

Measurement: As indicated, the measures for achievement in each of the selected program areas while in some cases fairly straightforward (at least in terms of proving that the necessary activity has taken place in the form of outputs, although often more difficult proving long-term benefits for the affected populations) have hardly been developed. We had assumed that MPI would play a major role in the development of these measures but they seemed surprised when we asked them about this and it is not clear who in fact will take the lead.

Conclusion and Recommendations

The GOL is making good progress with support from the donor community in developing the quality of its financial management systems to a standard that would assure the correct accounting for revenues received from the NTPC, and for meeting the requirements for eligible expenditures. But there is still a long way to go and the current assessment of the standard of financial management shows significant weaknesses that leave no room for complacency. Furthermore, the definition of eligible programs, while still in areas that are broadly eligible as pro-poor or pro-environment spending, has departed significantly from the principles of additionality and sustainability that the GOL subscribed to in signing up to these commitments. So far little assurance can be given that it will be possible to demonstrate that the expenditures on these programs have in fact reached their intended recipients and are having a significant positive effect in terms of their objectives.

The 2009-10 financial year will be the first year of operation of the new accounting codes and FMIS, and there will be considerable scope for learning and improvement over this year. A further independent PEFA-style review of the quality of these systems is probably called for in 2-3 years' time. In addition, we would expect to see a concerted effort by the GOL to demonstrate that the selected programs do in fact represent a sustained increase in relative spending on the poor and the environment, with appropriate indicators of their impact.

Recommendation 9-17.

The IAG recommends that:

- 1) The GOL commission a further independent PEFA review of progress on the PFMSP at the end of the financial year 2012-13.**
- 2) The GOL develop the required specific indicators of the impact of eligible programs, by the end of 2010.**
- 3) The World Bank and the GOL collaborate on a PER aimed at testing the additionality and sustainability of pro-poor and pro-environment spending in eligible programs by the end of 2012.**

Table 3. RMA Eligible programs - budget allocation 2009-10	
Ministry and program	Billion kip
Ministry of Energy and Mines: Rural electrification projects	6,000
Ongoing projects	3,000
New projects	3,000
Ministry of Education: Education reform project	17,503
Lower secondary teachers' training	2,514
Purchase of zinc roofs for Y4 of secondary education	3,674
Provision of textbooks and teacher's guides	5,003
Provision of teaching equipment for primary and lower secondary schools	6,000
Project operating costs	313
WREA: Environmental monitoring	1,500
Renovation of the laboratory at WRE Institute	500
Establishment of 3 WREA district office (in 3 districts)	1,000
Ministry of Public Health: Quality improvement of mother and child services and surgery in targeted districts	10,000
Provincial-level TOT conducted by central level staff	2,197
Service improvement at district level targeting poor districts	1,786
Services by village health center targeting the poor	1,592
Health services at village level impacting the poor	1,500
Subsidies to the poor	2,050
M&E	287
Operating costs	589
Ministry of Public Works and Transport: road construction and maintenance	15,000
Rural road construction	9,000
Regular road maintenance	6,000
TOTAL	50,003

5. OVERALL CONCLUSIONS

5.1. Where the project stands now

In considering the social impacts of the NT2 project, our focus was mainly on the plateau because this is where the project's impacts have been most strongly felt so far and where the new circumstances have made the largest claims on people's adaptive capacity. The project land villages still seem excessively focused on grievance about compensation. However, the formal grievance process is now drawing to a close and people, if not happy, are at least resigned to what they have received. Downstream on the Xe Bang Fai, the project impacts have so far been mainly positive through the WASH and well drilling program, and some new livelihood developments such as fish farming and weaving funded through the VDFs. The first signs of the actual impacts of Nam Theun water on the Xe Bang Fai are starting to be felt and the villagers seemed pretty clear what it would mean to them in terms of loss of the riverbank gardens. In both Project Lands and the Xe Bang Fai villages, the main ongoing concern seems to be flood mitigation and increased access to irrigated water. Importantly, few people seemed to understand that although there has been a development component to the compensation that has been provided, assistance from the project is strictly capped and further development beyond what has been provided is a government responsibility with donor assistance. Petitions to us were usually directed towards NTPC.

So, mainly with respect to the plateau, our main conclusions can be summarized as follows.

Life is better for villagers but the benefits have been unevenly spread and their sustainability is still unclear. New social goods remain highly valued by villagers: housing, access to electricity, water supply (both on the plateau and through the wells program downstream), sanitation, education, better local roads and access to markets were all mentioned. The family books and LSMS provide some evidence of upward trends in median household incomes and of diminishing, although still significant, reliance on project support. There is a wide variation in median incomes across both households and villages and a significant proportion of median incomes are still below the Lao poverty line.

Some opportunities are being taken up more readily than others. Fishing in the reservoir has become a significant source of household income for many plateau families, and fish trading has developed rapidly if unevenly, but it is not yet clear what the long-term stable stock of fish in the reservoir will be. Although there has been a good rice crop this year, villagers are slow to take up new methods of cultivation. The VFA provided a first welcome dividend to families but now must ensure that production forests are harvested sustainably and extended if possible. Maintaining a reduced herd of buffalo and calves on the plateau will require more intensive animal management than in the past. Market gardening and other activities – including gathering what NTFPs are still available - have yet to make a significant contribution to household incomes. (Outside of the pilot villages, there seems to

have been little addition to vegetable gardens or fruit trees since we last visited nearly two years ago). The drawdown zone and its irrigated margin are a potential additional resource but, for the villagers, still an unknown quantity. In sum, there is some way to go yet before villagers on the plateau have the assurance of a diversified and sustainable range of options for their future livelihoods.

Some factors were identified that seem to cause variation in incomes and in uptake of opportunities such as geography, previous assets, gender, ethnicity, shortage of family labor and “vulnerability”. At a more general level, there seems to be a division of households into three categories, distinguished by appetite for risk: there are a relatively small number of first movers, who will try new techniques or forms of production; a larger group of watchers and waiters, who need to have evidence of their own eyes of the successes of others before they will take up new methods themselves; and a group of very cautious and risk-averse families who prefer to stick to the traditional methods they know well and which mesh well with their cultural understandings.

Driving a lot of the uncertainty and fear of change on the plateau is what one might call “land shock”. The balance between humans and natural resources has been radically changed by the reservoir and by the new rules about access to the forest. Both in the LSMS and in conversations, villagers voice their fears about this loss of land, for swidden or other cultivation, for open grazing and for hunting and gathering. Land has suddenly gone from being an infinite resource bounded only by spirits and cultural norms to a scarce commodity to be husbanded, fenced, managed and fed with nutrients and water. The margin for error in subsistence livelihoods with an ensured supply of rice as the main marker of food security may have been small before NT2 came along, but it is not only small now, it is of a different and unfamiliar quality.

The development model for agriculture on the plateau assumes adaptation from a natural cycle of decades in rotation to one of two to three seasons in which the labor requirements are higher and roles are different. Similarly, livestock has to be tagged, contained, fed and vaccinated. As we reported, one villager put it to us “the animals used to feed us and now we feed them”. The trees that can be cut down are limited to allow for regeneration. The fish have to be counted and measured and eventually fishing will have to be restricted to ensure that the fish can breed for the next season.

What are the policy consequences of these changes in current livelihoods and future prospects? Some thoughts:

- First, on the plateau, the adaptation will take a generation. The income targets will probably be achieved for the majority of households, one way or another, in the five years left of intensive project inputs. But by and large it is the children of the current resettlers who will be the main testimony to the success or failure of this project. Everybody says this, but it bears repeating. The change will continue, for better or for worse, long after NTPC has met its obligations.
- Second, it seems likely that the lives of the women, men and children of the new resettler communities will develop in ways we cannot now predict. This is not an engineering project where all inputs can be planned and controlled. Human development is a complex process in which plans are most often wrong, and solutions emerge in unexpected ways. The project's

success in human terms ultimately depends on the resilience of the impacted people themselves.

- Third, attention needs to focus on those lagging behind. To some extent, we assume that vulnerable households will be supported by their extended families or clans, who provide the basic social safety net for rural Lao. But to the extent that company and government inputs can help both with income support and development, they have to be concentrated on this group.
- Fourth, we wonder if more could be done to leverage development through the natural leaders of the village, the men and women to whom others look to set an example and whose opinion and example they trust.

The other main theme of our report has been progress on building the long-term Lao institutions required for sustainable development. This is going to become a major issue as the company progressively hands over community assets, terminates its support for major environmental and social programs, and reduces its role of funding and guiding community-based organizations like the VFA. The Government of Lao PDR of course already assumes a large part of the responsibility for development of the livelihoods and protection of the interests of the resettlers and other project affected people. Its role will increase even further, particularly at a provincial and district level, as the company progressively steps back. There are issues here of both capacity and organization. But development will also depend on the capacity of local community institutions to take up new roles. Many of these issues are specific to the plateau particularly because of the radical change in the status of land, forest, fish and other natural resources: from virtually infinite to scarce. More widely, the Nam Theun 2 project has become an important testing ground for the ability of local communities to take the lead in managing their adaptation to change and development through community institutions. There should be many useful lessons for other rural communities from this experience

5.2. Lessons for the future?

As has been said many times, NT2 is a flagship project for the GOL and the World Bank: it is a test of the ability to invest in large scale energy projects that bring not only economic returns to the sponsors but improve the lives of the people and communities most directly affected and where adverse environmental impacts are minimized. The early auguries for NT2 are good in this respect, but as noted above, the true impacts of this project, both social and environmental, will take a generation to play out. Nevertheless there are some emerging lessons for future projects, although perhaps tentative and qualified.

Government officials have described NT2 as a “model” for future hydro developments. On the other hand, we also heard that it would be difficult to achieve the same standard of provision for resettlers in future projects like the Theun Hinboun extension because of “limits on developers' budgets”. This left us uncertain as to exactly what an NT2 standard meant. What standards will the government adopt in its ESAs in terms of the rights of resettlers and other affected people, and a

commitment to further development beyond compensation and restoration of affected livelihoods?

NT2 offers the lesson that negotiation of safeguards directly into commercial agreements is feasible. However this requires a close relationship between the government agency with prime responsibility for dealing with developers, the Ministry of Energy and Mines (MEM), and WREA, the agency responsible for environmental and social safeguards. We would be concerned that negotiation of a MOU exclusively between MEM and developers could effectively finesse safeguards. The ESIA is the mechanism for safeguards and it was made clear to us that it would be universally applied. It was less clear that it would be before the government made commercial commitments or that social impact assessments and responses would be based on consultation and get the same weight as environmental assessments.

A further issue is the future model in Lao for IWRM. We were advised that the GOL is firmly committed to IWRM and has submitted a draft strategy to the MRC – the only MRC country to do so, so far. That strategy is based on the principles of participatory planning and a river basin approach. We were told that there would be a river basin organization or committee for each major basin of which two or three are currently in the planning stage.

The financing of this project and the multiple agencies involved have at times created complexities and burdens that have led to questioning whether this “model” can indeed be replicated. It is important to continue monitoring and evaluating the long-term outcomes and impact of the project. But it is also important to recognize all that has been achieved to date as an encouragement for the future. Social and environmental safeguards do not in themselves involve complexity. So far, the evidence from Nam Theun 2 is that the commitment to retain this high degree of attention to affected persons is achievable and replicable. The IAG hopes that the people affected by the Nam Theun dam will truly assess their conditions today and in the coming years as better than before and see a brighter future for themselves, their children and their communities.

ANNEX 1: THE PEOPLE WE MET

We sincerely appreciate the valuable information, assistance, cooperation and hospitality of all the following people during our meetings and field activities.

Government of Lao PDR (GoL)

Ministry of Energy and Mines

H.E. Soulivong Daravong, Minister

Mr. Sychath Boutsakitirath, Deputy Director General

Mr. Xaypaseuth Phomsoupha, Director General, Department of Energy Promotion and Development

Ministry of Agriculture and Forestry

Mr. Sousath Sayakoummane, Deputy Permanent Secretary and his officers and staff

Ministry of Finance

H.E. Viengthong Siphandone, Vice Minister and her officers and staff

Water Resources and Environment Administration

Mme. Khempheng Pholsena, Minister to the Prime Minister's Office, Head of WREA, and Chairperson of the Lao National Mekong Committee and her officers and staff

Khammouane Province

H.E. Khambay Damlat, Governor

Resettlement Management Unit

Mr. Sivixay Soukharath, Manager

Mr. Hoy Phomvisouk, Deputy Manager

Mme Keoula Souliyadeth – Vice President, Lao Women's Union

Watershed Management and Protection Authority

Mr. Somphou Choummalavong, Deputy Director (PICAD) and his officers

Mr. Soukata, Law Enforcement and other staff

Reservoir Management Secretariat

Mr. Khamthone Vongphachan, Manager and his officers and staff

Village Forestry Association

Mr Keo Oudone and staff

Nam Theun 2 Power Company (NTPC)

Mr. Jean-Pierre Katz, Chief Executive Officer

Mr. Jean Copreux, Director, Environmental and Social Division

Mr. Aiden Glendinning, Manager, Public Relations and Communications

Mr. Marcel Frederik, Manager, Project Lands and Plateau Program

Ms. Marissa Duran, Deputy Manager, Project Lands and Plateau Program

Mr. Francois Demoulin, Manager, Downstream Program

Mr. Soun Nilsvang, Deputy Manager, Nakai Resettlement Office

Mr. Stuart Gillon, Deputy Manager, Environmental Protection

Mr. Ruedi Luthi, Senior Marketing Advisor

Mr. Ben MacTiernan, Team Leader, Environmental Compliance

Mr. Khamtanh Vatthanatham, Fisheries Team Leader

The World Bank

Mr. Patchamuthu Illangovan, Country Manager, Lao PDR

Mr. William Rex – Lead Country Officer, Task Team Leader of NTSEP and NT2 Field-based Project Coordinator

Mr. Daniel R. Gibson, Senior Social Scientist

Mr. Shabih Ali Mohib, Financial Management Specialist

Mr. Sybounheung Phandanouvong, Social Development Specialist

Mr. Renae Stenhouse, Biodiversity and Environment Specialist

Ms. Nina Fenton, Research Analyst

Ms. Mara Baranson, Private Sector Development Specialist

Ms. Vicky Minoian, Communications Specialist (with special thanks for her considerable help in organizing and facilitating our program)

.....and all the administrative staff

The Asian Development Bank (ADB)

Ms. Elizabeth Mann, Social Development Specialist (Consultant)

Agence Francaise de Development (AFD)

Guy Francois, Charge de Mission

United Nations Development Program (UNDP)

Ms. Sonam Yangchen Rana, Resident Coordinator, UN and Resident Representative, UNDP

Mr. Stephane Vigie, Deputy Resident Representative

Ms. Phanchinda Lengsavad, Assistant Resident Representative

Mekong River Commission (MRC)

Mr. Sourasay Phoumavong, Director of Planning Division

Earth Systems Lao

Ms. Emma Murray – Environmental Governance Officer

Lao Front for National Construction

International Rivers Network

Ms. Ikuko Matsumoto

Mr. James R. Chamberlain, Anthropologist

The Lao people

In particular, we would like to express our deepest gratitude to the *Nai Ban* of the villages of the Nakai Plateau, Gnommalat District and the Xe Bang Fai who welcomed us and through them the many other people who shared their time and thoughts with us.

Thao Khuan of Ban Sop Hen and Thao Kham Thit Somphou of Ban Sop Hon and their families for sharing with us the comfort of their home during our field work in the resettlement villages

Thao Boun Lieng of Ban Nong Boua

Thao Boua Lien of Ban Lao

Thao Am Phon of Ban Sangkeo

Thao Duang Si Vanh of Ban Phova

Thao Kham Pheuy of Ban Keng Pe

ANNEX 2: GUIDE QUESTIONS FOR VILLAGE FOCUS GROUP DISCUSSIONS

Truncated Version for Final Report:

Note: All FGDs were conducted in Lao by Lao researchers or in one village also in another local language to accommodate an ethnic minority group there.)

Nakai Plateau Resettlers

International Advisory Group
9th Mission – Nam Theun 2 Dam

The World Bank
Vientiane, Lao PDR

NAME OF VILLAGE: _____ DATE: November ____, 2009

TYPE OF GROUP: _____

Number in group _____

e.g. All women, Mixed men/women, Leaders, Young people (13-17 or 18-24; mixed/all M or F,) Ethnic group

INTERVIEWERS: _____

Introductory Note: The information sought focuses on changes in the household economy or livelihood, quality of life, and future perspectives as described by resettled Nakai Plateau villagers affected by the implementation of the Nam Theun 2 Dam project. The methodology used is Focus Group Discussion (FGD). Individual key informant interviews may also be utilized where appropriate, but are optional.

Interviewer's Explanation of the Study

We are doing a study of the villagers immediately affected by the construction of the Nam Theun 2 Dam. In particular, we would like to know how the people who resettled in this village feel about their new lives here and their future prospects. Can you help us understand the experiences and issues you consider important? Thank you.

(Ask their permission to take pictures.)

A. Background

1. How long have most of you been living in this village?

2. Did most of you want to move here? Why? Why not? *(Probe for differences between men, women, youth, children, older persons)*
3. What finally convinced you to move here?

B. Household economy/Livelihoods

1. What do you do every day to obtain enough food and other basic necessities for your family/household?
2. Do you provide your family with food and other basic necessities by doing the following types of work? Explain what you do for each kind of work.
 - 2a. Farming
 - 2b. Fishing
 - 2c. Raising cattle and other livestock
 - 2d. Going to the forest
 - 2e. Doing off-farm work
 - 2f. Other
3. What do you do when you want to buy something for cash? (*If they sell, probe what they sell to buy something.*)
4. How did you decide to get into the work activities you are now doing here? How did you learn about them? Did anyone help you? Who? In what ways did they help?

Probe for neighbors, relatives, other villagers, external persons or institutions like the Company, government.
5. How different are these activities that you do now from what you formerly did in your life before you moved here? What changes have taken place between then and now? Has it been a good change or not?

Change 1	Good ____ Not good ____ Why?
Change 2	Good ____ Not good ____ Why?
Change 3	Good ____ Not good ____ Why?
6. Have there been changes in work roles among members of the household since you came to this village? e.g. Between men and women? Children? Adolescents? Older persons? Other? Why did these changes happen?
7. Where do you sell your products? Who buys your products? How do you decide on the price? 8. Who in your household sells which products? How do the sellers and buyers contact each other?
9. Do you do any activities for processing your products (Probe for example -- fish paste *padek*, fermented cabbage/*sompack*, other). Do you know how to do any processing activities? If not, would you like to learn?
10. Have you visited other communities or groups outside this village to learn about their new experiences? If yes: What did you learn from them? Who went? How long was the visit? What did you bring back to your community? Did you apply it here? If no, would you like to make such visits? To learn what in particular?
11. Have you received any training in relation to the new kinds of activities here? What kind of training?

12. Who decided the kind of training? Were you consulted?
13. Who received the training? Where did the training take place?
14. Was the training practical in your life here? Were you able to adapt or use it?

Please explain.

15. How would you compare your ways of supporting your family now with the ways of doing that in your former village? Better? Worse? About the same? Why do you say that? Please explain.
16. Do different family members have different views about that? Why?
17. Are some families/households doing better in their ways of supporting their families than others in this village? Worse? Who? In what ways?

C. Assessing the quality of life in the resettled village

1. Have any of the resettled villagers moved away? Where have they gone? Why?
2. Have any other people come to stay in your household since you moved here in addition to those who first came? Who are they? Why did they come? How long do they expect to stay?
3. Do your children go to school? Are any of those of school age not in school? Which ones? Why?
4. Have your children had any illnesses since you came to live here? Did they have those illnesses when you lived in your former place? How have you dealt with these?
5. Have women had illnesses since you came to live here? Did they have those illnesses when you lived in your former place? How have you/they dealt with these illnesses after moving here?
6. Have men had illnesses since you came to live here? Did they have those illnesses when you lived in your former place? How have you/they dealt with these illnesses after moving here?
7. Have you or a household member gone to the health clinic since you arrived? About how many times? What kind of help did you seek? What was the result?
8. Where do you go for water for the household?
9. Where do you go to the toilet?
10. How do you get along with your neighbors? Do you do common activities together? Why? Why not?
11. Are there different ethnic groups here? How do they get along with each other?
12. If there are problems affecting several households or neighborhoods in the community, how are they resolved? Who makes the decisions?
13. What roles do the village leaders (*naiban*) play in response to the community's needs? What roles do the Lao Front elders (*neo hom*) play in response to the community's needs?
14. Have you made new friends in this community? What kinds of activities do you do together? What do you like best about living in the village? Least? Why?
15. If you could return to your former community, would you? Why? Why not? Does everyone in your household feel the same way?
16. Are there festivals or special traditional occasions that people celebrate together as a village? Have you participated?
17. Have you been able to retain your traditions and relations with the spirits?

D. Overall assessment

1. How would you assess your life now compared to before? Happier? Sadder? Both
 happy and sad? About the same now as before? Why do you say that?
2. Are there things about living here that make you *worry* about the future of your family in this resettler village? What are these? Why do they make you fearful?
3. How can your dreams and wishes come true? Do you have any plan for your family in the future? What are they?
4. Would you like to add any more comments?

Thank you very much for talking to us. You have been very helpful and we have learned a lot.

Duration of interview: Hours _____ Minutes _____

Time: _____

INTERVIEWER: PLEASE ADD BELOW ANY COMMENTS YOU FEEL WILL BE HELPFUL IN UNDERSTANDING THIS FGD.

PROJECT LANDS

(Refer to Nakai template for common instructions to researchers)

Introductory Note: The information sought focuses on changes in the household economy or livelihood, quality of life, and future perspectives as described by people/ households in Project Lands affected by the implementation of the Nam Theun 2 Dam.

Interviewer’s Explanation of the Study

We are doing a study of the villagers immediately affected by the construction of the Nam Theun 2 Dam. In particular, we would like to know how the people in this village feel about their lives here and their future prospects now that the Dam has been built. Can you help us understand the experiences and issues you consider important? Thank you. *(Ask their permission to take pictures.)*

A. Household economy/Livelihoods

1. In what ways have your lives changed because of the Nam Theun Dam? Have your lives become better? Or worse? Or about the same? Why?

Change 1	Good ____ Not good ____ Why?
Change 2	Good ____ Not good ____ Why?
Change 3	Good ____ Not good ____ Why?

2. Are some families/households doing better in their ways of responding to the changes than other families in this village? Worse? Who? In what ways?

3. Tell us more about the changes in the land situation.
4. Did anyone help solve any problems related to land? Who? How?
5. Have most of the compensation claims now been settled? Yes _____ No _____
If yes: satisfactorily? Not satisfactorily?
If no: Why not? What problems remain?

B. Assessing the quality of life in the village

1. Have any of the villagers moved away since the dam was constructed? Where have they gone? Why?
2. Have any other people come to stay in your household since the Dam was constructed? Who are they? Why did they come? How long do they expect to stay?
3. What roles do the village leaders (*naiban*) play in response to the community's needs? What roles do the Lao Front elders (*neo hom*) play in response to the community's needs?
4. How do you feel the Project is responding to your needs? Has it helped you? Not helped you? *If helped*: How? *If not helped*? Why not? Do you have any suggestions as to how it can better help you?

C. Overall assessment

1. How would you assess your life now compared to before the Dam? Happier? Sadder? Both happy and sad? About the same now as before? Why do you say that?
2. Are there things about living now here that make you *worry* about the future of your family in this village? What are these? Why do they make you fearful?
3. How can your dreams and wishes come true? Do you have any plan for your family in the future? What are they?
4. Would you like to add any more comments?

DOWNSTREAM

(Refer to Nakai template for common instructions to researchers)

Introductory Note: The information sought focuses on changes in livelihoods, quality of life, and future perspectives as described by Downstream villagers affected by the implementation of the Nam Theun 2 Dam project.

Interviewer's Explanation of the Study

We are doing a study of the villagers immediately affected by the construction and operation of the Nam Theun 2 Dam. In particular, we would like to know how the people in this village feel about their lives after the Dam was built, and what kind of future they now see for themselves. Can you help us understand the experiences and issues you consider important? Thank you.

(Ask their permission to take pictures.)

A. Background

1. How long have most of you been living in this village?

2. Which households here received any form of assistance from the Project as a result of the Dam construction?. What were they?

B. Household economy/Livelihoods

1. Let us discuss the livelihood activities that contribute to your daily household wellbeing. What aspects of your livelihood are mainly for household consumption or use? Which aspects mainly generate cash income? Who mainly does each activity? Men? Women? Children? (*Check all that apply.*)

<u>Activity?</u>	<u>Who</u>	<u>Does</u>
<u>1a – 1e. Livelihood Activities Mainly for Hh Consumption Men /Women /Children</u>		
1a.	_____	_____
1b.	_____	_____
1c.	_____	_____
1d.	_____	_____
1e.	_____	_____

1f - 1j. Livelihood Activities Mainly for Cash Income

<u>Activity</u>	<u>Who Does</u>		
	<u>Men /Women /Children</u>		
1f.	_____	_____	_____
1g.	_____	_____	_____
1h.	_____	_____	_____
1i.	_____	_____	_____
1j.	_____	_____	_____

2. How different are these livelihood activities from what you did before the Dam was built? What changes have taken place between then and now? Has it been a good change or not?

Change A	Good _____	Not good _____	Why?
Change B	Good _____	Not good _____	Why?
Change C	Good _____	Not good _____	Why?

3. Have there been changes in the work done by various people in your household since the Dam was built? e.g. Between men and women? Children? Adolescents? Older persons? Other? Why did these changes happen?

4. Have you received any training in relation to the new kinds of activities here? What kind of training?

5. Who decided the kind of training? Were you consulted?
6. Who received the training? Where did the training take place?
7. Was the training practical in your life here? Were you able to adapt or use it?
Were you able to share your training with anyone here? Please explain.
8. Are some families/households doing better in their livelihoods than others in this village? Worse? Who? In what ways?
9. How would you compare your livelihood now with your livelihood before the Dam? Better? Worse? About the same? Why do you say that? Please explain.

C. Community concerns

1. If there are problems affecting several households or neighborhoods in the community, how are they resolved? Who makes the decisions?
2. What roles do the village leaders (*naiban*) play in response to the community's needs? What roles do the Lao Front elders (*neo hom*) play in response to the community's needs?
3. Is this village organized into any associations or formal groups? What are they? Do they succeed in achieving their aims?
4. How do you feel the Project is responding to your needs? Has it helped you? Not helped you? *If helped: How? If not helped? Why not?* Do you have any suggestions as to how it can better help you?

D. Overall assessment

1. How would you assess your life now compared to before the Dam? Happier? Sadder? Both happy and sad? About the same now as before? Why do you say that?
2. Are there things about living here now that make you *worry* about the future of your family in this village? What are these? Why do they make your worry?
3. How can your dreams and wishes come true? Do you have any plan for your family in the future? What are they?
4. Would you like to add any more comments?