

**LAO PEOPLE'S DEMOCRATIC REPUBLIC  
NAM THEUN 2 MULTIPURPOSE PROJECT**



**FIFTEENTH REPORT OF THE  
INTERNATIONAL ENVIRONMENTAL AND SOCIAL  
PANEL OF EXPERTS**

30 April 2009

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ENVIRONMENTAL AND SOCIAL PANEL OF EXPERTS**

**For the Nam Theun 2 Multipurpose Project  
Lao People's Democratic Republic  
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**Cover photo: WMPA staff with POE members on  
the Banks of the Nam Noy.**

## LIST OF RECOMMENDATIONS

The POE recommends:

- **1/15 That the NTPC clarify precisely what elements of the CA's Environmental and Social Objectives will be addressed by its imminent certification process and what will not, and reconfirm its obligations and undertakings to maintain beyond the so-called Project Completion Date its programs designed to meet its ongoing environmental and social requirements under the CA.**
- **2/15 That GOL and the World Bank expedite using the Khammouane Development Project (KDP) as one mechanism for planning the development of an XBF integrated river basin development project that includes Savannakhet's Xaibouly District.**
- **3/15 That the government proceed in the XBF basin with "a comprehensive review of government programs and projects, including those supported by donors/NGOs" as recommended by the Bank's Rural Livelihoods Scoping Mission for the Khammouane Development Project "to verify geographical coverage, types of support provided and mechanisms for supporting village based development activities."**
- **4/15 That particular attention be paid to the potential of contract farming not just for improving household livelihoods but also for developing agro-industry within Laos for high value crops and livestock. The POE recommends this because of the entry that the NT2 downstream program provides to over 200 XBF and Nam Theun villages, and because contract farming is supported by the Prime Minister's Office, the Ministry of Agriculture and Forestry, and the Department of Industry and Commerce as an important development strategy for Laos.**
- **5/15 That pre-school, primary, secondary and tertiary education receive more support from project agencies and donors as a critically important approach to asset handover from NTPC and RMU staff to local villagers, to improved health, and to family planning.**
- **6/15 That implementation of the livelihood program be accelerated especially in the XBF downstream area, on the Nakai Plateau, and in the NPA.**
- **7/15 That NTPC proceed as planned with recruiting a new national marketing expert on a fulltime basis as soon as possible. As for the international expert, the POE recommends that the contract of the current expert be extended for a period of time acceptable to both parties. The TOR of both experts should cover all project zones.**

- **8/15 That NTPC recruit, as a senior staff member, a well-trained Lao social scientist.**
- **9/15 That the time has come for NTPC and GOL to expedite the necessary planning for the eventual handover of project activities to district and provincial staff. Such planning will be time consuming for among other activities it will require increasing staff quotas and budgets at the district and provincial levels.**
- **10/15 That GOL allow Vietic households resettled in the NPA and PIZ zones to return seasonally or permanently, as they so wish, to the spirit territories from which they were involuntarily removed.**
- **11/15 That renewed attention be paid to replacing the predatory shifting cultivation and wildlife poaching of PIZ villages such as Ponsa-art and Ponkeo with more sustainable livelihood activities.**
- **12/15 That GOL, NTPC and the IFIs reconsider the volume of funds required to meet in full CA livelihood restoration obligations, allocate funds accordingly and take under consideration the POE's view that it may well prove necessary to rehabilitate all fifteen water gates and to provide accordingly appropriate training and funds to villagers for the operation and maintenance of the gates. Most importantly, the now successful field programs will have to be extended to the remaining affected villages and remain in place for at least four years beyond COD. In the interim the need for transitional food and income supplementation measures should be assessed on a continuing basis.**
- **13/15 That the NTPC and the GOL give serious consideration to applying the recommendations of the Downstream Credit Scheme evaluation report to all Project zones, not least those recommendations aimed at making credit more accessible and relevant to the poorer households and those aimed at expanding and ensuring the long term sustainability of this most useful initiative.**
- **14/15 That NTPC check out the reports of navigation, water supply and erosion problems on the Nam Phao and the Nam Kata due to the absence of the historical backwater effect, make known its findings and take remedial and/or compensatory action if these events are found to be project impacts.**
- **15/15 That the momentum now established in the below-the-dam Livelihood Development Program be accelerated until all the compensatory exercises have been completed, including, if required, compensatory measures for those affected by the previous recommendation and the contracts of existing staff being maintained beyond COD where this is necessary to achieve successful completion.**
- **16/15 That the NTPC's Project Lands Team maintains the drive to obtain "land-for-land" as close to the PAPs' houses as is possible and**

not succumb to the temptation to simply hand over compensatory cash for lost lands. The Team should also regard the August 2009 target for settling roading compensation claims as mandatory. In the interim the need for transitional food and income supplementation measures should be assessed on a continuing basis.

- **17/15** That constant surveillance of the early impacts of the turbined waters on riverbanks and riverbeds be maintained, with particular attention being paid to keeping villagers informed of any accelerated erosion and what the NTPC plans to do by way of protection and mitigation.
- **18/15** That NTPC and GOL take the lead in the overall planning of the cleaning up and restoration of construction sites and closely monitor its implementation by the subcontractor and the Head Contractor, bearing in mind that it will be easier and cheaper to get it right the first time round rather than have to rehabilitate a botched job.
- **19/15** That consideration be given by the NTPC Board to handing over in good condition surplus project buildings to GOL, Provincial or District authorities with a view to their use for the public good.
- **20/15** That NTPC accelerate integration and coordination of marketing, community development, non-farm enterprise and the Village Forestry Association (VFA) into the Livelihood Program under the leadership of a responsible senior NTPC official with a senior Lao national counterpart.
- **21/15** That land and water use boundaries for each resettler village be legally formalized for the 31,277 ha resettlement area as mandated under PM Decree #24 and that PM Decree #24 serve as the basis for clarifying resettler boundaries to the drawdown area including the drawdown area along the northeast boundary of the Nam Malou extension.
- **22/15** That for resettler use the drawdown area be zoned for household irrigation as well as for village livestock grazing.
- **23/15** That resident community development staff be assigned to each village to work closely with resettlers and the livelihood team as part of an essential program to intensify capacity building and extension.
- **24/15** That it is essential to accelerate the staffing, budgeting and implementation of the agricultural, livestock and off farm pillars of the Livelihood Program in the months and years ahead.
- **25/15** That the recently recruited World Bank research analyst assess the accuracy of the family books.

- **26/15** That, with the assent of the resettlers, the present plan for an evolutionary transition of VFA into a limited liability company operating on a commercial basis be pursued further, conditional upon the preparation of a viable business plan, an appropriate management arrangement with a reputable individual or company being negotiated and favorable GOL decisions being forthcoming from the Office of the Prime Minister on long-term quotas, tax arrangements and clarification of the resettlers' rights to sole use and processing of their forest resources in the enlarged resettlement area including the 7,900 ha drawdown area and the 4,100 ha. Nam Malou extension.
- **27/15** That the terms of the charcoal/activated carbon contract be examined by the appropriate GOL agency to determine whether it remains valid and to decide whether there is a conflict with the Nakai Governor's decree that all timber on VFA land is for the sole use of the resettlers.
- **28/15** That the technology of building kilns from local clay and making good quality charcoal be introduced into the villages as an option for lifting cash incomes of the resettlers.
- **29/15** That the decision of the livelihood program to provide a boat and fishing gear to every household which requests these be implemented with savings from canceling purchase of larger boats provided for in the CA.
- **30/15** That registration and identification of all boats be accelerated to better control illegal entry, since reservoir formation, to the reservoir and into the NPA.
- **31/15** That small scale irrigation activities be accelerated in the 58 percent of plots adjacent to the drawdown area, with at least several pilot households in each village irrigating the lower portion of their plots by COD. At least one gully dam irrigation system should be operational by COD in each village where the remaining 42 percent of plots are found.
- **32/15** That emergency feeding and conditioning of buffalo and cattle continue until adequate grazing is available in the VFA and the drawdown area.
- **33/15** That the deadline for registration of buffalo in the NPA be extended to enable buffalo-owning resettlers, GOL and NTPC to plan and implement an equitable program for their removal from the NPA.
- **34/15** That the livelihood program proceed cautiously with its off farm pillar until fulltime marketing expertise is available. In the meanwhile, the experience of the Downstream Program with village credit should provide guidelines for implementing a similar program in each resettler village.

- **35/15 That an equitable program of off-farm enterprise should assist low, middle and upper income households in every resettler village.**
- **36/15 That the number of vulnerable households among resettled villages on the Nakai Plateau, and their food aid and income requirements, be reexamined during the 2009 rainy season.**
- **37/15 That the NT2 project facilitate the move of the four New Sop Hia households to Nam Nian by building houses there and prioritize implementation of the livelihood development program for all 18 Vietic families.**
- **38/15 That high priority be given to establishing the Reservoir Management Secretariat as a functional agency with adequate budget, staff, office space, housing and water and land transport. Such action is essential granted the importance of the roles of the Reservoir Management Committee and Secretariat, the inadequate attention paid to date to reservoir management, and the increasing use of the reservoir to penetrate the NPA.**
- **39/15 That the relevant authorities deal with the Ban Done incident strongly and effectively so that it does not become a precedent that undermines law and order in the NT2 Project area.**
- **40/15 That the NPA rules and procedures be changed to specify that any person who is not authorized to be in the NPA be apprehended when first encountered.**
- **41/15 That the WMPA establish some form of identification for those who have a legitimate reason to be in the NPA.**
- **42/15 That the WMPA patrols, with police backing, be authorized to confiscate all equipment being used illegally by poachers, and that, if possible, the process be made automatic.**
- **43/15 That WMPA strengthen and continue their educational program to ensure that staff, most of whom are foresters not wildlife personnel, understand the status, nature and magnitude of the threat to the NPA's biodiversity.**
- **44/15 That the WMPA develop a strategy to deal with the truly critical issues of wildlife poaching. The strategy would include establishment of core areas which include populations of the NPA's signature animals, including species such as the tiger, saola and gaur etc., which are being extirpated from the rest of the NPA. These core areas should be the focus of intensive protection, intended to provide as complete protection as possible. At the same time, the protection of the rest of the NPA must be improved significantly.**

- **45/15** That a top priority be the removal of the existing wire snares, first from the core areas and their surroundings, but followed by a systematic clearing of as much of the rest of the NPA as possible.
- **46/15** That WMPA implement the MIST information system for its conservation patrol efforts as soon as possible.
- **47/15** That key parts of the SEMFOP, including the vision sections and the mandate for the WMPA, be translated into Lao without delay, and that a workshop in Vientiane be held, chaired by the WMPA Board, to present and explain the SEMFOP and its mandate for WMPA.
- **48/15** That the WMPA have an outside entity (possibly the IMA) conduct annual performance evaluations of the staff, using standardized performance criteria, and for the next several years, at least, automatically transfer out all those in the bottom, say, 10%, replacing them with individuals specifically recruited for positions determined by the WMPA.
- **49/15** That WMPA be allowed to “front load” , i.e. divert a portion of the funds allocated for the last years of NTPC funding, in the range of \$1.2m. (total funding) the first year, largely to strengthen the patrolling and biodiversity conservation efforts in the NPA. These funds would be contingent upon WMPA specifying (1) where it has made reductions elsewhere in its budget to free up funds for essential work (2) what the saved and additional funds are to be used for, and (3) performance indicators to judge the quality of the results. Any further front loading in subsequent years would be contingent on the demonstrably successful use of front loaded funds already received.
- **50/15** That the Government of Laos PDR review the effectiveness of the present board structure and procedures against the objectives of Decree 39, and implement its findings.

The POE requires:

- **51/15** That the final form of the Watershed Access Plan or Framework (WARF) be approved as consistent with the SEMFOP and the CA by the POE, as must any subsequent modification of it.

The POE recommends:

- **52/15** That GOL initiate the process of applying for World Heritage status for the NPA without delay.

**The POE requires:**

- **53/15 That the Thongkong road be made truly impassable to vehicles.**

**The POE recommends:**

- **54/15 That the provision of mineral licks for domestic livestock in the resettlement villages be limited to mineral blocks, not creation of small scale dirt licks that attract elephants and other wildlife**
- **55/15 That a “cheap and quick” version of the recent widely representative Plateau livelihood workshop be convened in Nakai to review the philosophy, objectives and working of the Watershed livelihood development program and to consider the draft livelihood development program and community development strategy for the next five years now being worked on by WMPA.**
- **56/15 That, subject to views expressed at the above workshop, the present management of the livelihood work in WMPA headquarters be restructured to bring in at DDG level an experienced, flexible and active MAF officer to lead the WMPA’s livelihood development program to a more effective level. The level of his annual remuneration should be performance based.**
- **57/15 That mitigatory and compensatory action be taken by NTPC as a matter of urgency (they have initiated this) in order to help the resettled villagers of Songkone survive the coming wet season and re-establish their agricultural base.**

## 1. INTRODUCTION

This is the fifteenth report of the International Environmental and Social Panel of Experts (POE or the Panel) for the Nam Theun 2 (NT2) Multipurpose Project in the Lao People's Democratic Republic. The members of the Panel are D.K.McDowell (consultant, Otaki, New Zealand), T.Scudder (California Institute of Technology, USA) and L.M.Talbot (George Mason University, Virginia, USA).

Since its first visit in January, 1997, the Panel has been strongly supportive of the project. It remains so. We regard many of its features and procedures as models for other projects elsewhere in Laos and beyond. As it has steadily evolved in more recent years from a single sector hydropower project into a multipurpose development enterprise we have become the more convinced of its potential as a global model. The solemn undertaking by the Concession Agreement (CA) parties to continue to meet their obligations and responsibilities until in the opinion of the POE the CA's social and environmental goals have been met is a breakthrough in implementing development projects of this scale.

The above view of the project is not universally held. Some contend that the project has proved too drawn out, too demanding in its standards and too costly on the environmental and social sides to be seen as a model. Others counter that the standards set in this case will help head off serious and expensive "downstream" problems which will be faced by the cut-rate projects which are setting aside or paying lip service only to the social and environmental safeguard measures taken by NT2 and will thereby encounter much greater risks and costs in the years ahead. Others again argue that the measures taken by NT2 are inadequate and need to be bolstered. For its part the POE adheres to the view that though there remain flaws in the planning and implementation of the NT2 project it retains the potential to be seen as a model of its kind.

Adaptability remains important. Two key project documents are the Social Development Plan and the innovatory Concession Agreement. Both stand up well still---but they should not be seen as infallible or immutable. The SDP, for example, anticipated that the forestry sector would make a much more significant contribution to the resettlers' annual income than has been the case thus far and paid little attention to the agricultural and pastoral potential of the extensive drawdown areas around the shallow reservoir. Some of these planning concepts are reflected in the CA so that, for example, it envisages direct community management of the timber resources in a way which has proved impracticable. Changes in approach are called for. This is adaptive management in practice and should be regarded as a sensible evolutionary approach.

In aggregate the Panel members have over 150 years of professional experience, much of it international and much of it specifically involving development projects and/or their environmental and social impacts. In the long run, we have seen few if any of these projects to be successful in terms of the welfare of the involved local people and the environment being as well off, much less being improved, by the project. However, the Panel has felt that the NT2 Project has the potential to break this downward cycle and to result in real gains for the affected people as well as the environment, the latter particularly in terms of conservation of the NPA. The Panel remains cautiously optimistic that these objectives can be met.

## **1.1 The Panel's Mandate**

The Panel derives its mandate from the Concession Agreement. This is a 600 page legal document which assigns the POE a contractual responsibility to provide independent review of and guidance on the treatment of environmental and social issues associated with the Project, and after the Implementation Period of nine years or more, to determine whether the Project's environmental and social goals have been met. The POE submits its findings to the GOL Minister of Energy and Mines and the Standing Deputy Prime Minister, addresses recommendations to the GOL, NTPC and the IFIs, and is required to assess the extent to which NT2 meets the requirements of the safeguard policies of the World Bank and the Asian Development Bank on such issues as the environment, indigenous peoples and resettlement with development.

## **1.2 Panel Activities**

Arriving in Vientiane the weekend of March 7-8, 2009, POE members David McDowell and Thayer Scudder were briefed by the Department of Energy Production and Development and met with the Minister of Energy and Mines, NTPC, the World Bank, the Mekong River Commission and The International Center for Tropical Agriculture before traveling to Thakhek to meet the Governor of Khammouane Province and the GOL/NTPC Downstream and Health Teams. The next 18 days were spent in the field, including two days in both the downstream area and project lands (Gnommalath and Mahaxai Districts), six days on the Nakai Plateau, and three days in Khamkeut District below the NT2 Dam where meetings were held with the Deputy Governor and Head of Cabinet, the Downstream Team, the E&S Division of the Theun Hinboun Expansion Project and the residents of four villages.

While on the Nakai Plateau the Panel met with the Nakai Deputy District Governor and attended the last meeting of the Livelihood Workshop. Useful discussions were held with project agencies including the GOL RMU, the NTPC's RO team (with special emphasis on the Livelihood Section), NTPC's Environment Management Office (EMO), the EMU, the Village Forestry Association (VFA), the Reservoir Management Secretariat, and the Reservoir Debris Floating Collection Team. The Panel visited most of the resettlement villages. On March 18 POE member Lee Talbot joined the Panel for meetings with the Watershed Management and Protection Authority (WMPA) and a five day visit to the Nakai-Nam Theun National Protected Area (NPA).

The POE returned to Vientiane on March 30, meeting again with the Khammouane Governor en route, for four days of meetings with the Hon. Somsavat Lengsavat, Deputy Prime Minister and Standing member of the Government, the Ministers of Energy and Mines, and Agriculture and Forestry, the Head of the Water Resources and Environment Agency, the NTPC Board and Project staff, and the IFIs prior to Wrap Up meetings with project agencies, the media and the public and departure over the April 4-5 weekend.

### **1.3 Acknowledgements-Appreciation**

The Panel expresses its appreciation for the organizational time and energy devoted by GOL, NTPC , World Bank and WMPA staff to setting up a most worthwhile schedule, not least Phalim Daravong. It is grateful to the Standing Deputy Prime Minister, Hon. Somsavat Lengsavat, the Minister of Energy and Mines, Hon. Soulivong Daravong, the Minister of Agriculture and Forestry, Hon. Sitaheng Rasphone, Minister to the Prime Minister's Office, Hon. Mme. Khempheng Polsena, the Governor of Khammouane Province, the Deputy Governor of Nakai District, the Deputy Governor and Head of Cabinet of Khamkeut District and the CEO of NTPC, Jean-Pierre Katz, for their insights and time.

## **2. OVERARCHING CONSIDERATIONS**

### **2.1 NTPC's Planning for the "GOL Project Completion Date".**

There remains much to be clarified and negotiated before the POE can consider whether and when it will be in a position to independently confirm the correctness or otherwise of the certificate to be issued later this year or early next by the NTPC's Nominated Representative relating to "satisfaction" of the CA's Environmental and Social Objectives. The CA (Cl.16 .2 (b)(i)) is inexact in its wording implying initially as it does that the certificate will cover the "completion" of all such Objectives. This is qualified subsequently by Cl.16.2 (b)(iv) which says that it is those objectives which are required to be met "at the time of the GOL PCD" which are to be assessed by the POE at this stage. Elsewhere in the CA (Sched.4 Part 1 paras. 2.1-2.4, for example) it is made clear that the POE's assessment role in respect of the Resettlement Objectives and Provisions at least will be required for nine years from the end of the Resettlement Planning Period and conceivably beyond.

For its part, the NTPC has stated that the so-called GOL Project Completion exercise at the end of this year or early 2010 will cover construction and generating capacity issues, the handover of assets to the GOL and some additional matters but not the meeting of its environmental and social obligations which will continue beyond the GOL PCD.

There remain other issues for debate, with the expression "partial completion" appearing to the POE to be an oxymoron when it refers to complex, time-consuming and essentially experimental operations like developing, introducing and having accepted by the villagers new livelihood development options in three different zones of the project.

#### **The POE recommends:**

- **1/15 That the NTPC clarify precisely what elements of the CA's Environmental and Social Objectives will be addressed by its imminent certification process and what will not, and reconfirm its obligation and undertakings to maintain beyond the so-called Project Completion Date its programs designed to meet in full its ongoing environmental and social requirements under the CA.**

### **2.2 Importance of an Integrated River Basin Development Project for the Xe Bang Fai**

In large hydro dam projects there is often an inherent conflict between those who wish to use the impounded water for electricity generation purposes only and those who wish to see the turbined waters and the reservoir also used for other development purposes. This was so in the NT2 case during the 1990s, with little active consideration given by either GOL or the NTPC to the productive use, in particular, of the turbined waters and the reservoir's extensive drawdown area.

The POE has had repeatedly to draw attention to this anomaly. Happily the situation has now begun to change, with the NTPC having taken on the responsibility and additional expense of installing irrigation outlets along the Downstream Channel and designing the regulating reservoir to also pass water down the Nam Kathang that will enable new gravity fed irrigation schemes to be developed in the Gnommalath plain. On the other hand, the POE remains convinced that the \$16 million funding will be insufficient to meet CA requirements; hence the need for the XBF integrated river basin development project.

The POE has presented the GOL and the IFIs with a proposal for the integrated development of the entire Xe Bang Fai basin as a model for other river basins in Laos and elsewhere. Initial reactions have been favorable with the World Bank suggesting that the Bank-funded Khammouane Development Project (KDP) could be used to explore the issue and the Governor of Khammouane suggesting that Xaibouly District in Savannakhet Province also be included so as to cover the entire basin. An oversight and planning Xai Bang Fai Integrated River Basin Development Committee has been formed.

This is a good start but is inadequate granted the complex direct and indirect benefits that integrated river basin development can involve. To advise the Committee, the POE recommends that the World Bank use the KDP to recruit a qualified consultant to examine the basin's potential.

#### **The POE Recommends:**

- **2/15 That GOL and the World Bank expedite using the Khammouane Development Project (KDP) as one mechanism for planning the development of an XBF integrated river basin development project that includes Savannakhet's Xaibouly District.**
- **3/15 That the government proceed in the XBF basin with "a comprehensive review of government programs and projects, including those supported by donors/NGOs" as recommended by the Bank's Rural Livelihoods Scoping Mission for the Khammouane Development Project "to verify geographical coverage, types of support provided and mechanisms for supporting village based development activities."**

### **2.3 The Dynamics of Change and Continuity among Project Affected People**

The POE has been impressed by the capacity of project affected people in all project zones to assess their needs and to change their behavior to improve their livelihood while maintaining cultural continuity. Most sophisticated are villagers in the lower XBF basin who constitute the large majority of project affected people. In most, if not all, villages in Nong Bok, Xe Bang Fai and Xaibouly Districts, villagers maintain contacts with households that moved to the United States in the 1970s.

During the three years that the POE has been visiting Beungxe Village, we noted household efforts to diversify their economies by complementing rice with higher value crops, livestock, aquaculture ponds, and nonfarm enterprises (including

tractor rental for preparing public and private sector plantations). Tomatoes have become an important cash crop with villagers experimenting with other less perishable crops as marketing problems have intensified with increases in tomato production.

Over the years households involved in contract farming of tobacco have increased from six in 1997 to ten this year with three or four more families expecting to take up tobacco contract farming in the immediate future. In Naphoktha village nine families were willing to experiment was the contract farming of CR 203 rice for beer production but only if prices were increased. They had equal concern as to whether prices were sufficient for the contract farming of Japanese cucumbers for a recently built factory with women particularly critical of initial price offerings. Other crops considered appropriate for contract farming were feed corn for the Thai and Vietnamese markets.

Because frequent mention was made of the need for improved marketing of tomatoes, the POE believes that the time has come for the private and public sectors in Laos to consider agro-industry for the canning of tomatoes with and without fish. The demand appears to be there. In one store in Beungxe, five of eight canned or bottled items in stock were tomato- based with two including the type of small fish which are currently abundant in the NT2 reservoir. There is increasingly GOL, local and international consultancy, and FAO support for small-holder involvement in contract farming with the UN's Food and Agriculture Organization (FAO) recently establishing a Contract Farming Resource Center. Khammouane Province's Department of Commerce and Industry is pushing the contract farming of CR 203 rice and cassava.

An excellent possibility for Gnommalath villagers is the contract farming of cassava along Route 12 to Vietnam where the Khammouane Province Department of Commerce and Industry is experimenting this year with cassava seedlings with the intention of introducing contract farming of cassava to local villagers next year. In that district project lands households losing over 10 percent of their productive resources have shown flexibility in acquiring new lands at a distance, and in adapting cultural heritage institutions to new land acquisition and sharecropping.

In all project zones the POE was impressed with the increasing emphasis households are placing on preschool, primary, secondary and higher education, while the Governor of Khammouane Province is a strong supporter of secondary and higher technical education for NT2 project affected people. Education is not only crucial for improving employment opportunities but, as emphasized by the Health Program Management Unit, "Literacy and Education is the Key to Health" and is associated with smaller family size. During their January-February 2009 mission the IFIs urged NTPC and provincial and district education authorities to provide more secondary education to resettler children, with unused village markets perhaps adapted for that purpose.<sup>1</sup> In the NPA, 20 to 30 children are already in secondary school from the Theung cluster of villages on the Nam Noy.

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<sup>1</sup> The POE suggestion for those markets is to use them for a series of weekly markets (available each day of the week in different villages) where not just traders but also government services include administrative, credit, extension and health services would also be available.

A special concern expressed by villagers in all zones related to potentially adverse project impacts on livelihood issues. The first three concerns identified by the Health Program's Psycho-Social Impacts Study on the Nakai Plateau were "the sources of income and possible employment opportunities in the future, the natural growth of the family and the availability of housing, and the availability of sufficient land to build new houses for the new generations." To those concerns, the POE adds, as its own concern, land resources for future generations.

**The POE recommends:**

- **4/15 That particular attention be paid to the potential of contract farming not just for improving household livelihoods but also for developing agro-industry within Laos for high value crops and livestock. The POE recommends this because of the entry that the NT2 downstream program provides to over 200 XBF and Nam Theun villages, and because contract farming is supported by the Prime Minister's Office, the Ministry of Agriculture and Forestry, and the Department of Industry and Commerce as an important development strategy for Laos.**
- **5/15 That pre-school, primary, secondary and tertiary education receive more support from project agencies and donors as a critically important approach to asset handover from NTPC and RMU staff to local villagers, to improved health, and to family planning.**
- **6/15 That implementation of the livelihood program be accelerated especially in the XBF downstream area, on the Nakai Plateau, and in the NPA.**

#### **2.4 E&S Institutional Issues**

For the first time since the POE's initial visit in 1997, NTPC E&S staffing has begun to develop the capacity to meet Concession Agreement requirements, while the NTPC Board and Chief Executive have committed NTPC to recruit and fund after COD the necessary staff until the job is done. That does not mean CA requirements will be met by 2013-2014 for valuable time has been lost and too many good staff have left in frustration including livelihood staff who resigned to join the E&S Division of the Theun Hinboun Expansion Project.

Nonetheless, the POE is impressed with the experience of the new E & S Division Director as well as with the Managers of the XBF/Nam Theun Downstream and Project Lands Programs. Provided the Nakai Plateau Livelihood Program is reorganized as planned to incorporate marketing and community development and the Village Forestry Association (VFA), current staff now have the capacity to implement the necessary agricultural, livestock, fisheries, VFA and non farm pillars of the Livelihood Program.

It was the POE's understanding that full-time national and international marketing experts would be recruited following the POE's March-April 2008 visit.

Their Terms of Reference would cover all Project Zones. The POE recommendation on this matter was one of its most important simply because project efforts to commercialize agriculture and livestock require that marketing receive equal importance with production. Though a suitable national expert was recruited he recently resigned because marketing had yet to be properly integrated within the livelihood program. Though a suitable international expert was available he was recruited for only 100 days over a two year period which was inadequate.

The POE remains concerned by the frequency with which it identifies new social and economic problems that NTPC staff should have noticed in the different project zones. We believe that a major reason for this failing is the absence on the NTPC staff of an experienced Lao social scientist whose job description would require familiarity with project affected people in all project zones.

On the GOL side the POE believes that continuity of involvement by the Standing Deputy Prime Minister, the new Minister of Energy and Mines, the Governor and Vice-Governor of Khammouane Province and the Governor of Nakai District are crucial if capacity building is to reach the level necessary to take over the project when the NTPC, the Resettlement Committee and the Resettlement Management Unit hand over project responsibilities at the district and provincial levels. Though capacity building continues to be too slow in all seven project-affected districts, the weakest GOL institution remains the Watershed Management and Protection Authority (WMPA) with is the topic of POE recommendations later in this report.

#### **The POE recommends:**

- **7/15 That NTPC proceed as planned with recruiting a new national marketing expert on a fulltime basis as soon as possible. As for the International Expert, the POE recommends that the contract of the current expert be extended for a period of time acceptable to both parties. The TOR of both experts should cover all project zones.**
- **8/15 That NTPC recruit, as a senior staff member, a well-trained Lao social scientist.**
- **9/15 That the time has come for NTPC and GOL to expedite the necessary planning for the eventual handover of project activities to district and provincial staff. Such planning will be time consuming for among other activities it will require increasing staff quotas and budgets at the district and provincial levels.**

#### **2.5 Households and Villages in the Peripheral Impact Zone (PIZ) and the NPA**

The POE commends the Government for the recent decision to stop all involuntary resettlement of households and villages in the Peripheral Impact Zone and the NPA. Because such resettlement has been particularly difficult for Vietic

households and communities, they should be allowed, if they so wish, to return seasonally or permanently to their former spirit territories.

In the case of Pakatan, whose residents have now been informed that they will not have to move, the POE noticed that the integrity of the surrounding forests are threatened by Ponsa-art's predatory system of shifting cultivation. The POE also learned that the WMPA considers Ponsa-art and Ponkeo poachers among the main threats to wildlife in the NPA.

What is needed in Ponsa-art and Ponkeo is a strongly participatory and culturally sensitive development and education program to assist residents to implement more sustainable land use systems as well as to provide options to poaching including paid employment in ecotourism and other WMPA activities.

**The POE recommends:**

- **10/15 That GOL allow Vietic households resettled in the NPA and PIZ zones to return seasonally or permanently, as they so wish, to the spirit territories from which they were involuntarily removed.**
- **11/15 That renewed attention be paid to replacing the predatory shifting cultivation and wildlife poaching of PIZ villages such as Ponsa-art and Ponkeo with more sustainable livelihood activities.**

**2.6 Lessons Learned from NT2**

Projects like NT2 have added value when their shortcomings as well as their successes are recorded and the lessons learned by others. This has happened here. The POE had the opportunity to look briefly at a resettlement exercise related to the expansion of the Theun Hinboun project. To be fair it should be noted that the resettlement in this latter case is onto relatively flat and fertile land compared with the steeper and often infertile slopes which the NT2 resettlers and their advisers must contend with. Some of the lessons learned are:

- there are substantial delegations of managerial and financial powers to the field managers by the THPC
- personnel management procedures including extended contract periods are an improvement on the NT2 ones with much attention paid to communicating with staff
- there are very close relations between the THPC and the District staff, auguring well for the handover exercise
- the access road, being built by a local contractor (a State Enterprise ) has gone in early, takes account of the topography of the area and has narrow cleared verges, protecting the forest and minimizing erosion
- livelihood restoration builds on existing agricultural systems and extension workers including DAFO ones are in place and active at the outset of the project.

### 3. XE BANG FAI AND KHAMKEUT DOWNSTREAM AREAS AND PROJECT LANDS

The third major contribution of the NT2 project to an integrated approach to the development of the Xe Bang Fai river basin (after increased dry season water flows and the generation of electricity) is the government-approved Downstream Development Program. This is experimenting with a wide range of village income generating activities and funding the rehabilitation of 15 water management gates for the benefit of 183 villages. The Downstream and Project Lands Programs had a shaky start but are now well positioned to begin compensating affected villagers for many of the expected project impacts. Since March 2008 the Downstream and Health Programs have been implementing, with district and RMU cooperation, a protein monitoring program and an effective compensatory development program below the NT2 Dam in Khamkeut District. At the initiative of the Downstream Program, “NTPC has accepted the principle and the funding of implementing a Food Consumption Monitoring Program for the XBF area. An international nutritionist consultant ...has been contracted to assist with the design of this program. The program will be managed by the HPMU – Health Program of Dr. Pany.”

The outstanding issues to be settled before the turbined waters begin to flow are some very dilatory compensation payments for fruit trees and for padi and land taken for roads, a number of wells producing unpotable water and some remaining shortages of land available for land-for-land deals. The turbined waters will bring, however, another set of problems to the fore, largely associated with expected erosion and water management. The Livelihood Restoration Program, though progressing well, will need to be expanded rapidly, as planned, from its present experimental phase and be extended well beyond COD to attain its objectives. There may well emerge unforeseen hydrological events which will require further food and/or income support for downstream communities.

The big hurdle on the downstream side is the chronic shortage of funds for livelihood restoration and associated activities. The POE has been convinced from the original negotiations on funding that the sum of \$16 million was inadequate to meet the project's CA obligations to the large number of downstream villages expected to be impacted by the turbined waters. There still seems to be a belief in some quarters---reflected in many contract termination dates--- that these obligations can be met by COD and within the existing budget. This is simply unrealistic---and is seen as such by senior management. Livelihood development and income restoration are activities which take time and resources. There are suggestions emerging nevertheless that there are funds available to rehabilitate only a proportion of the fifteen water gates needing repair, for example. The parties must revisit the funding issue.

#### **The POE recommends:**

- **12/15 That GOL, NTPC and the IFIs reconsider the volume of funds required to meet in full CA livelihood restoration obligations, allocate funds accordingly and take under consideration the POE's view that it may well prove necessary to rehabilitate all fifteen water gates and to provide accordingly appropriate training and funds to villagers for the operation and maintenance of the gates. Most importantly, the**

**now successful field programs will have to be extended to the remaining affected villages and remain in place for at least four years beyond COD. In the interim the need for transitional food and income supplementation measures should be assessed on a continuing basis.**

### **3.1 Downstream Credit Scheme**

The most successful of the DSP initiatives is the Credit Scheme. The POE found that most of the villagers to whom they spoke had availed themselves, sometimes several times, of the funds made available through this mechanism to help mitigate the expected declines in wild fisheries within the XBF following COD. The Scheme's newly flexible rules have meant that villagers have used the funds not only for income-building purposes but also on occasion for such social purposes as paying for much-needed surgery. The levels of on-time repayment are reasonable for such a scheme though they may fall somewhat as the actual impacts of the turbined water flows start cutting into incomes of heavily affected households such as fulltime fishers.

An excellent evaluation of the Credit Scheme became available last January and concludes that the Village Income Restoration Funds (VIRFs) “.....appear to provide a useful, cheap source of finance for largely investment purposes, mostly dry season rice production.” The evaluation also noted that the system has strengthened its ability to distribute larger volumes of income restoration loans but that in doing so there has been a “progressive erosion of micro- finance principles”. The POE's view is that this is a trade-off which is acceptable, given that the object of the exercise under the CA is to help bring livelihood restoration entitlements to as many impacted households as possible. Even so, there are households which are not accessing the credit opportunity, either because the options are limited in their area or because they have limited labour or other resources and are not prepared to take the risk of not being able to meet repayments.

The usefulness of the Credit Scheme would be enhanced if it were more accessible to the vulnerable and became sustainable in the long term, thus keeping up the momentum beginning to develop. The evaluation has a number of suggestions for significantly upgrading the established village funds to maximize their sustainability, establishing Village Fund Associations able to provide longer term technical assistance and creating Savings and Credit Unions.

#### **The POE recommends:**

- **13/15 That the NTPC and the GOL give serious consideration to applying the recommendations of the Downstream Credit Scheme evaluation report to all Project zones, not least those recommendations aimed at making credit more accessible and relevant to the poorer households and those aimed at expanding and ensuring the long term sustainability of this most useful initiative.**

### **3.2 Downstream Livelihood Restoration Activities**

The 183 villages expected to be affected are receiving now or will receive assistance through the Livelihood Restoration Activities (LRA) Program. These villages are being helped through demonstration activities, service provision and Village Fund financed activities. A range of livelihood and fisheries technical advice and support services are also available, such as extension services for dry season rice growing, livestock raising and weaving and the provision of in-kind grants of seeds or fingerlings, and the development of fisheries community co-management systems. Options are put before the villagers who make their own choice of which livelihood paths they wish to follow---sensibly, most seek a diversified set of options. There is strong support from the districts for the LRA work, with ten extension workers involved---more than the NTPC input in terms of numbers. It is to be hoped that this level of District involvement will be maintained when the project eventually withdraws from fostering livelihood development. One way of helping ensure this is the production of a more consolidated (hence less confusing for district staff and others) version of the various XBF plans.

Some evolution of thinking on flood management particularly in relation to the meander zone in the lower reaches of the XBF is occurring. Here the flooding periods last longer so rice survival is more problematic. Experimentation is underway to determine whether later planting (September) will ensure greater food security in this zone. This is an element of the so-called “learning to live with floods” approach.

On the basis of extended talks in four downstream villages (Ban Beungxe, Ban Sokbor, Ban Naphoktha and Ban Povatai) it appears to the POE that the net effect of the downstream interventions is that income disparities are tending to grow, with the rich getting richer but the middle and low income groups also improving their situations. In short, poverty alleviation ---but not eradication---is beginning to happen. That is an advance. But ways must be found to make all programs more accessible and relevant to the villages with low participation rates and the vulnerable within all villages. The NTPC management is aware of this and is working actively on finding solutions. The POE will monitor this exercise. As noted above, the key requirement is that the livelihood work in all zones be funded to continue for a further period of years so that sustainable livelihoods may be fully developed and mastered by the villagers before withdrawal.

### **3.3 Khamkeut**

A year ago the POE sounded a warning note about the very late start in initiating activities in the area below the Nakai dam designed to compensate for the imminent loss of fisheries in the reduced flow Nam Theun and its tributaries. Much of the leeway has been made up since then and is described below. A second set of project impacts have, however, emerged which may be classed as Unexpected Events in the terms of the Concession Agreement. These are related to the so-called backwater effect which occurs, as one example, when one water flow of greater volume and/ or velocity than a second contiguous flow forces the water in the second flow to back up in its course. In the case of the Khamkeut event (another more predictable event on the Nam Xot is covered in the section below on the watershed and relates to backup from the reservoir), the much reduced flows of the Nam Theun

after impoundment have significantly reduced historic backwater effects in the Nam Phao and probably the Nam Kata (though we were not able to check this ourselves). Certainly the reduced backwater effect has made navigation on the Nam Phao more hazardous. There were also reports about more erosion along the Nam Phao and reduced water supplies from wells, while villagers complained that there were no “natural” fish in the Nam Theun anymore.

**The POE recommends:**

- **14/15 That NTPC check out the reports of navigation, water supply and erosion problems on the Nam Phao and the Nam Kata due to the absence of the historical backwater effect, make known its findings and take remedial and/or compensatory action if these events are found to be project impacts.**

Interestingly enough, the project found that the protein deficiencies forecast in the villages below the dam in the last wet season did not occur so there was apparently no need to trigger the protein supplement program. This was in part because on investigation it was found that much of the animal protein consumed by these people consists of meat (poultry and pork) rather than fish alone.

### **3.4 Livelihood Development in Khamkeut**

Livelihood development activities are underway in 12 villages in the Khamkeut area, covering 1037 households. Twelve months after initial impacts there remain 26 villages to be assisted. This program was originally designed to provide compensation for fishery impacts only but, as noted above, it may now have to extend also to cover some backwater loss impacts on the Nam Phao and possibly the Nam Kata. The various options available are pitched to village priorities but groups and individuals are then consulted on their priorities within a household cap of K.1.1 million (approximately US\$125 at current exchange rates). They include land clearance for padi and other crops, seeds and fertilizer for dry season crops and fodder, the provision of piglets, goats, cattle and other livestock and technical assistance with the digging and stocking of fish ponds. The two main activities are expected to be land clearance and fish pond construction.

The program is well planned but needs to be accelerated and has some teething problems. Many villagers went for the land clearance for padi option but in a lot of cases either the soil was not fertile enough to make this feasible or the villager had expected that the land would not only be cleared of vegetation including roots but would be formed into padi at the same time. The contracts make clear that it is only land clearance that is involved but this was imperfectly understood. The livelihood team is now making absolutely explicit what will be done under each option---and what will not. On the fish pond front, four of the nineteen dug are still dry and the project is experiencing supply difficulties in providing sufficient fingerlings for the others.



Householder in Pakataan, PIZ zone.



Project agriculture extension worker showing experimental rice varieties.



The tranquil Xe Bang Fai awaits the influx of turbined waters.



Children in Downstream area amused by Ted Scudder's yodelling.



Contract tobacco farmer in Ban Beungxe sorts leaf for her kiln.



Clearing land for padi in compensation for lost fishery, near Pakataan.

While the Khamkeut livelihood program differs from the other project ones in being a compensatory exercise rather than a development program as such it is essentially the same in that each option must be successfully implemented to be regarded as compensatory. That said, it seemed to the POE that in the village in which we spent most time (Ban Khammouane) there was a marked reluctance among households to work with each other to help out neighbours on projects or even to work together to achieve collective goals like establishing communal aquaculture ponds. This is inhibiting the program and should be addressed.

**The POE recommends:**

- **15/15 That the momentum now established in the below-the-dam Livelihood Development Program be accelerated until all the compensatory exercises have been completed, including if required compensatory measures for those affected by the previous recommendation and contracts of existing staff being maintained beyond COD where this is necessary to achieve successful completion.**

### **3.5 Project Lands**

The POE found that good progress had been made in finding “land-for-land” solutions in the Gnommalath Plain areas where the project has absorbed large areas, often irrigated padi. Much of the land found has been through the operation of the traditional heritage system with families striking favourable deals with other family members in need. PAP leaders were of the view that the amount of compensation paid had generally been fair and had enabled many of those heavily affected to gain roughly equivalent land to that lost. But they also pointed out that, inevitably enough in this sort of shortage situation, land prices had risen---and much of the land acquired was situated much further from the village than the original plots. There is room for argument there whether distant land is “equivalent” for the CA makes clear that plot location satisfactory to the villagers is a factor. This was the main complaint.

The delays in compensating for the disputatious roading impacts arising from wider or extended roads have been excessive. The target of settling these claims by August 2009 is not too soon and must be met.

**The POE recommends:**

- **16/15 That the NTPC’s Project Lands Team maintains the drive to obtain “land-for-land” as close to the PAPs’ houses as is possible and not succumb to the temptation to simply hand over compensatory cash for lost lands. The Team should also regard the August 2009 target for settling roading compensation claims as mandatory. In the interim the need for transitional food and income supplementation measures should be assessed on a continuing basis.**

### 3.6 Future Erosion Impacts

There is some apprehension expressed in the project's own briefings as well as in the Mahaxai area villages we visited that changes in hydrology on the XBF may increase the rate of riverbank erosion. This is a wait-and-see situation to a degree but work is progressing on adapting the existing irrigation pontoon pumps to higher water levels, the present riverbank gardens are being photographed and registered preparatory to compensation and a small number of bridges has been constructed to help overcome to a limited extent the loss of dry season cross-river and cross-channel access. The POE understands that there are Contingency Funds available if required to cope with greater erosion damage than anticipated.

#### The POE recommends:

- **17/15 That constant surveillance of the early impacts of the turbined waters on riverbanks and riverbeds be maintained, with particular attention being paid to keeping villagers informed of any accelerated erosion and what the NTPC plans to do by way of protection and mitigation.**

### 3.7 Cleaning up, Restoring and Using Construction Sites and Buildings

The CA is explicit regarding the project's responsibilities for cleaning up, restoring and revegetating construction sites including the dam and powerhouse sites, camps, quarries, roads, spoil dumps and borrow pits. Schedule 7 clause 2(a), for example, requires that: "...all Construction Areas disturbed by the Construction Works shall be landscaped to restore suitable drainage paths and encourage the reestablishment of vegetation. Spoil heaps and excavated slopes shall be reprofiled to stable batters...."

This phase of the project offers NTPC an opportunity to garner considerable goodwill in communities among which its operating staff will be living for a quarter of a century. A well managed withdrawal from the construction phase could greatly benefit the long-term relationship, especially if the company is generous about leaving behind in a tidy state some of the extensive accommodation which exists.

Though the dry season conditions, the completion of much of the construction work involving earth moving and the fast declining numbers of workers on site have doubtless contributed to a fall-off in environmental pollution problems, there remains much to be done in cleaning sites and restoring them to an acceptable level. The sites have to be handed over successively from sub-contractor to Head Contractor to NTPC ---and eventually of course to the GOL. In all frankness the record of Ital-Thai and the Head Contractor in carrying out their responsibilities on the environmental side over the years inspires little confidence that the clean up will be adequate, let alone the restoration work. These call for a level of environmental consciousness, thoroughness and adherence to planning which has been notably absent from much of their environmental and restoration work thus far. The completion of the withdrawal process on a satisfactory basis offers the opportunity for them to restore their damaged reputations.

The subcontractor and Head Contractor should be aware that the POE, with additional independent technical expertise in the field of environmental engineering and assessment, will be meticulous in carrying out to the full its assigned monitoring and certification roles under the CA.

**The POE recommends:**

- **18/15 That NTPC and GOL take the lead in the overall planning of the cleaning up and restoration of construction sites and closely monitor its implementation by the subcontractor and the Head Contractor, bearing in mind that it will be easier and cheaper to get it right the first time round rather than have to rehabilitate a botched job.**
- **19/15 That consideration be given by the NTPC Board to handing over in good condition surplus project buildings to GOL, Provincial or District authorities with a view to their use for the public good.**

## 4. THE NAKAI PLATEAU

### 4.1 Institutional Structure

The POE was frankly disappointed by the slow implementation of the livelihood program over the past 12 months. In March 2008 we understood that the livelihood program was to be expanded to include marketing, community development, off farm enterprise and the Village Forestry Association (VFA). Such has not been the case with the result that progress with those crucial livelihood activities, with the exception of the VFA, has been inadequate. The POE understands that NTPC's new E&S Director is in the process of integrating all livelihood activities under a single responsible official. The need also exists for better coordination between the different livelihood pillars and different NTPC and GOL staff. Senior staff need spend more time advising community development and extension staff in the field.

#### The POE recommends:

- **20/15 That NTPC accelerate integration and coordination of marketing, community development, non-farm enterprise and the Village Forestry Association (VFA) into the Livelihood Program under the leadership of a responsible senior NTPC official with a senior Lao national counterpart.**

### 4.2 Land and Water Use Planning

The Concession Agreement clearly states that land use plans must be prepared for each village (7.5) “within boundaries agreed to by neighbouring villages” (7.8.2). Clear understanding of resettler tenure over, and use of, the land and water resources of the resettlement area as augmented by Prime Minister Decree # 24 of 13 February 2008 is essential at the household, village and national levels. It is essential at household and village levels to give resettlers legal security of use and development rights. It is essential at the national level so that outside interests are fully aware of resettler rights.

According to PM degree 24 the drawdown area of approximately 7,900 ha. southeast of the Nam Theun River between 525.5 and 538 masl and the 4,100 ha Nam Malou extension have been added to the existing 19,277 resettlement area. Though the 13 resettlement villages plus Phon Phan Pek and Oudomsouk have been administratively consolidated into three clusters, it is required under the CA that clear boundaries be established for each village. Those of the 13 villages should extend through the drawdown zone to the old channel of the Nam Theun. The 2005 (Patrick Julian) Village Boundaries Demarcation might provide a starting point to which the boundary of the VFA (once the boundary with village agricultural lands has been clarified), including the Nam Malou extension, would be added. Zoning within the drawdown area is necessary to demarcate land for household irrigation and village grazing.

Clarification is needed in regard to two boundaries. The first, as recommended by the POE in Report #13, is to ensure that the 1468 ha drawdown area along the northeast boundary of the Nam Malou extension is for resettler use. The second is that the wording of PM Decree #32 of March 21, 2008, namely giving the NT2 Reservoir Management Committee the role of managing “activities concerning the use of land in the drawdown zone, corridor and fishery in the Nam Theun 2 Reservoir”, not restrict the land and water use rights of resettlers under PM Decree #24 and the Concession Agreement.

**The POE recommends:**

- **21/15 That land and water use boundaries for each resettler village be legally formalized for the 31,277 ha resettlement area as mandated under PM Decree #24 and that PM Decree #24 serve as the basis for clarifying resettler boundaries to the drawdown area including the drawdown area along the northeast boundary of the Nam Malou extension.**
- **22/15 That for resettler use the drawdown area be zoned for household irrigation as well as for village livestock grazing.**

#### **4.3 Community Development**

Now that livelihood activities are being implemented community development staff and budget provision for liaison between livelihood technical staff and villagers must increase. Unfortunately, the exact opposite has happened with district community development staff falling from 16 in 2006 to six at the time of the POE’s March 2009 visit. Furthermore, at that time community development staff was no longer resident in resettler villages. The POE understands that reductions were caused by temporary problems, currently under correction, with the budget of the Resettlement Management Unit.

**The POE recommends:**

- **23/15 That resident community development staff be assigned to each village to work closely with resettlers and the livelihood team as part of an essential program to intensify capacity building and extension.**

#### **4.4 Livelihood**

##### **4.4.1 Introduction**

The five pillars of the livelihood program are Agriculture, Livestock, Fisheries, Forestry and Off Farm Enterprise. During February and March 2009 a series of livelihood workshops was held, the last one of which the POE attended on March 15. Attendance brought together not just District, RMU and NTPC personnel dealing with the different pillars but also World Bank participants and consultants dealing with production and marketing issues. The POE believes that the goals of the

workshops were largely achieved in regard to reaching a consensus on key issues and planned actions. Important was a decision to organize the VFA as a limited liability company and a consensus to start small by emphasizing more the existing skills of resettlers as well as capacity building and extension.

#### **4.4.2 Implementation Progress to Date**

Implementation progress to date has been unsatisfactory. During 2008 the three most important sources of income in the resettled villages were NTPC subsidies (22%), fishery (21%), and other (14%). Employment was fourth at 12% followed by agriculture (10%), livestock (8%) and non-timber forest products (7%). Income from the first four categories can be expected to decline over the next few years. NTPC subsidies will decline as well as employment opportunities with the end of the construction phase. The same is probably the case with the ‘other category’ which presumably included some illegal activities, such as rosewood collection, which will be less available. Current evidence is that the windfall fishery has reached its climax with fishers and traders both reporting a recent decline in catch. Expected earning from agriculture, livestock and off-farm activities has been delayed. Hence the risk that living standards may decline over the next few years unless implementation activities are accelerated.

#### **The POE recommends:**

- **24/15 That it is essential to accelerate the staffing, budgeting and implementation of the agricultural, livestock and off farm pillars of the Livelihood Program in the months and years ahead.**

#### **4.4.3 The Family Books**

To date the main source of information on income and expenditures has been the family books. Nine categories of income are recorded and 15 of expenditures. When all household incomes are averaged, “all villages have already met the net income targets” required by the CA (E&S February 2009 report page 28). The POE is concerned that such statements convey a false sense of security. As the E&S report notes “the data presented should be viewed as indicative and for guidance only” (E&S January 2009 report page 91). That is for two reasons. First, as the data indicates, a significant amount of income in each village is earned by less than five households. Second, while the ranking of income sources may be reasonably reliable, the POE remains skeptical about the reliability of the income data at the household level. That is because it is gathered only once a month by overworked community development personnel and is based almost entirely on recall by one or more household members.

#### **The POE recommends:**

- **25/15 That the recently recruited World Bank research analyst carefully assess the accuracy of the family books.**

The POE has periodically suggested that the project complement its more sophisticated (but, for that reason, unreasonably delayed) surveys with a small wealth-stratified sample of about four to five households in each village which are carefully interviewed through time twice a year. Assessment of the family books would be one way to initiate such a survey method. For background information it would make sense to involve the subsample from the 1996 statistical sample of 28 percent of households incorporated in the recent LSMS surveys so as to start with some benchmark data drawn from those two surveys and the family books. Interviews would continue with that sample until the end of the project (see chapter 2 in the World Bank's 1993 Rapid Appraisal Methods edited by Krishna Kumar).

#### **4.4.4 Forestry Sector and the Village Forestry Association**

The Social Development Plan (SDP) for the NT2 project envisaged the planned community forestry development and business management providing a multiplicity of benefits. These ranged from maintaining a good forest canopy to protect the watershed, to conservation of biodiversity and the resource base for NTFPs for village harvesting, to providing a base for agro-forestry initiatives including pasturage, to generation of jobs and income for villagers and provision of an annual dividend of between \$100 and up to \$300 to all relocated families on the Plateau. A particularly rosy picture was painted if commercial forestry development operations drawing on a sustainably managed resource were to prove successful.

Not for the first time in Lao history these hopes in the forestry sector have not been realized. There is a variety of reasons advanced for this, an underlying one being that the rich forest timbers of the country including some of those in the VFA areas have been the target of poachers and unscrupulous elements, national and international, for decades. But it is probably also true that the project's forestry sector planning was simply too ambitious to be achieved by a group of villagers with little managerial or commercial background in an enterprise like this---and preoccupied, as they have been, by the time and energy required when moving from established villages and livelihood patterns to entirely new circumstances and livelihood pursuits. Other factors have been the over-estimate of the marketable timber potential of the reserves handed to the resettlers, the lack of true commercial experience of the VFA managers drawn from the Forestry Department and the encroachment on VFA reserves by the resettlers themselves, impatient with delays in allocating such areas to villagers for agro-forestry and irrigated plots, for example. This reflects the seeming lack of awareness on the villagers' part that they own the allocated forests and forest land.

That said, the last two years have not been an entirely lost period for the VFA, for it stepped up when wood supplies fell short for the resettlement houses and became a major wood supplier to NTPC providing the processed timber for 400 houses to a value of \$1.5 million. The NTPC has over this period supplied technical and financial assistance to this important component of the livelihood program and will do so until the end of 2009. The resettlers will finally benefit directly from their forests this year, with the VFA Board having declared a dividend of \$205 to each resettler household to be paid in two installments in May and October.

But new thinking is required to take the VFA on from here. A new plan is evolving. It envisages the VFA making a transition to a commercial enterprise, a limited liability company, owned by the resettlers and involved in participatory sustainable management of the allocated village forestry areas and profitable operation of forest enterprises. There is much to do before such an institution, a long way from what was expected in the SDP, may be set up, not least the overdue participation of and assent of the villagers to the whole exercise. A forest management plan has been drawn up and approved but there remains a whole raft of actions needed before a limited liability company can be constituted. Overall land use planning around the resettlement villages is critical (we are encouraged to hear that such a process has now been approved by the Governor of Khammouane Province as is the content of the business plan). The principles of exclusive benefit, collective benefit and multiple types of benefit (timber, NTFPs, agro-forestry etc.) must be underlined, written specifically into the business plan and enforced. There should be no exceptions to or exclusions from these fundamental principles. POE will be monitoring this provision closely in the years ahead.

Some argue that a “profit sharing” element will need to be incorporated in the management contract. The POE is not convinced that that will be a necessary component, particularly if the GOL accedes to a forthcoming request to provide a long-term timber-cutting quota to the VFA of around 6,000 m<sup>3</sup> p.a., accords favorable tax treatment to the VFA, enforces in an effective manner the Nakai Governor’s edict that only the resettlers may use the forests on the Plateau, provides the VFA with sole access to the remaining timber in the drawdown area, ensures that the VFA sawmill is to be the only one operating on the Plateau, and enforces the restrictions in the contract with the activated charcoal company. If “profit sharing” is to be a part of the initial management contract then there should be a major provision for capacity building written into the contract until the resettlers are able to take over complete management of the VFA. There should also be an explicit link between performance and the level of fees or profits payable.

#### **The POE recommends:**

- **26/15 That, with the assent of the resettlers, the present plan for an evolutionary transition of VFA into a limited liability company operating on a commercial basis be pursued further, conditional upon the preparation of a viable business plan, an appropriate management arrangement with a reputable individual or company being negotiated and favorable GOL decisions being forthcoming from the Office of the Prime Minister on long-term quotas, tax arrangements and clarification of the resettlers’ rights to sole use and processing of their forest resources in the enlarged resettlement area including the 7,900 ha drawdown area and the 4,100 ha. Nam Malou extension.**

The resettlers’ sole use right is being abused at the moment by a group of expatriate (Chinese) charcoal manufacturers linked to the activated carbon plant still in Oudomsouk. According to the text of their contract they were only permitted to use waste and reservoir salvage wood to make charcoal. Yet the POE observed them placing green wood of large girth in kilns off the road near Ban Sop Phene. Resettlers



Villager from Nakai Neua harvests fish from netting expedition in the reservoir.



Drawdown area garden with submersible electric pump providing supplemental water to a villager's garden in Ban Phonesavang.



Buffalo, probably dead from starvation, near Ban Done.



POE's Ted Scudder interviews fish trader from Laksao



Fat reservoir carp and tilapia, part of the windfall fishery.



Berberi collected from NPA by resettlers of Khon Kaen.

from Ban Thalang were incensed by this taking of green wood by expatriates for making charcoal.

**The POE recommends:**

- **27/15 That the terms of the charcoal/activated carbon contract be examined by the appropriate GOL agency to determine whether it remains valid and to decide whether there is a conflict with the Nakai Governor's decree that all timber on VFA land is for the sole use of the resettlers.**
- **28/15 That the technology of building kilns from local clay and making good quality charcoal be introduced into the villages as an option for lifting cash incomes of the resettlers.**

#### **4.4.4 Fishing**

Resettler incomes most likely would have declined during 2008 without access to the expected reservoir windfall fishery. Along with the progress on the VFA, the POE congratulates the Livelihood Program for providing every two households with an appropriate boat and fishing gear in time to take advantage of the windfall fishery. The fishery provided a major source of income (15% to 32%) to every village as well as the key source of protein. Yields have been dropping in recent weeks, however, even though reservoir water remains warm as the dry season continues, so fish as an income source can be expected to drop in the months ahead. Hence it is essential to accelerate implementation of the agricultural, livestock and off-farm pillars of the Livelihood Program while pressing on with the development of a realistic and enforceable fisheries management plan.

**The POE recommends:**

- **29/15 That the decision of the livelihood program to provide a boat and fishing gear to every household which requests these be implemented with savings from canceling purchase of larger boats provided for in the CA.**
- **30/15 That registration and identification of all boats be accelerated to better control illegal entry, since reservoir formation, to the reservoir and into the NPA.**

#### **4.4.6 Agriculture**

All 0.66 ha plots have been allocated and UXO cleared. Though clearing continues in some, the majority were planted in fodder crops and rice during the 2008 rainy season. Villagers also cleared 300 to 400 hectares of VFA land which they planted in upland rice. At least 700 tons of rice was harvested including 215 tons from encroached areas. The highest yields were in Khone Kaen at the top of the reservoir where it also had been possible to cultivate former (un-inundated) village lands.

Progress with irrigating the lower portion of the 0.66 hectare plots as well as adjacent drawdown areas has been too slow, with few crops grown during the 2008-2009 dry season. Reasons are complex. While the CA requirement that irrigation be available to every resettler household at financial close in 2005 may have been unrealistic, too much time, effort and money has been spent on relatively high tech irrigation schemes (such as Sop On and Nong Boua) as opposed to the current emphasis, which has strong POE support, on simple irrigation systems using small pumps and plastic housing drawing water from the drawdown area and gully dams.

Though the 34 plots in the Sop On irrigation system have been available for use since the second half of 2008, necessary training of plot holders has not occurred in part because of labor constraints, with resettlers preoccupied with using their new boats to harvest the windfall fish population in the reservoir. The POE also found the 41 plots in the Nong Boua pilot pumping system underutilized for the same reason and because no water user group had been formed to optimize water use.

A further constraint has been high reservoir water levels, with minimal drawdown, in anticipation of the commencement of commercial operations.

#### **The POE recommends:**

- **31/15 That small scale irrigation activities be accelerated in the 58 percent of plots adjacent to the drawdown area, with at least several pilot households in each village irrigating the lower portion of their plots by COD. At least one gully dam irrigation system should be operational by COD in each village where the remaining 42 percent of plots are found.**

#### **4.4.7 Livestock**

The main problem continues to be the lack of grazing/browse for buffalo and cattle. The POE was distressed to find an upsurge in buffalo deaths, as well as some cattle deaths, from starvation starting toward the end of 2008. As the POE explained to senior NTPC management, when resettlers lose over 50% of their buffalo, as some have, or have to sell emaciated buffalo at less than half price, as other resettlers have, the situation is analogous to elderly Americans losing over half the value of their retirement funds during the current global financial crisis.

Informed of the situation the E&S Division initiated a four component program that includes (1) “immediate activities to be implemented to minimize impact of the non-availability of grazing land; (2) professional assessment of the situation along with census of dead buffalo and completion of buffalo registration; (3) appropriate compensation; and (4) mid and long term strategy for livestock management on the Nakai Plateau”. Activities began while the POE was in the field including villagers cutting and carrying Stylo and Ruizi Grass from demonstration plots, mineral lick production training, and feeding milled maize to thin livestock.

The large livestock situation is complex. Dealing with the current starvation situation will require sustained activity for several years until pastures become available during the rainy season in the VFA and, hopefully, during the dry season in

the drawdown area. The potential is there. While in the field the POE observed the most important pasture grass on the flood plain before reservoir formation growing along the margin of the drawdown area along the length of the reservoir, while a mat of floating grass was observed in Nong Boua Kham. Based on experience with other reservoirs, the POE has emphasized the potential of dry season drawdown grazing in past reports. Current observations suggest that drawdown grasses may well provide the major source of dry season grazing in which case the future balance between buffalo and cattle needs to be re-assessed.

In the meantime, the now expired January 2009 date for buffalo registration needs to be extended indefinitely. During the POE's visit to the NPA we visited old Ka Oy on the Nam Mon because we suspected some Ka Oy resettlers in Sop On and Done might be keeping their buffalos there. Indeed, we found 13 buffalo in good condition, mainly cows with new calves. They were not wild as was claimed was the case with all buffalo remaining in the NPA but rather habituated to gather in an old buffalo paddock in the middle of the old village site, presumably because their owners were continuing to leave red lick or other minerals there. We were able to talk to members of one family which briefly stopped by to gather unripe mangoes from their trees. When asked if buffalo were dying in Sop On they said yes. When asked if their own buffalo were dying, they said no because they were here in Old Ka Oy.

The complexity of the situation is apparent. On the one hand, the January 2009 deadline for registering NPA buffalo has passed. On the other hand, the Ka Oy resettlers were doing what they considered necessary to protect their animals from starvation. They should not be punished. Finding a solution to this problem will not be easy since clearly it has been in the interests of the buffalo owners to keep their stock in the NPA where there is sufficient pasture. One approach might be to meet with the Ka Oy resettlers in Sop On and Done, as well as with other buffalo owners, making it clear (a) that the project knows that some households still have buffalo in the NPA and (b) that the project wants to work out with their owners an equitable way for removing them from the NPA. Removal might involve bringing them to the new sites if sales at full value were guaranteed for any stock that could not be adequately fed.

**The POE recommends:**

- **32/15 That emergency feeding and conditioning of buffalo and cattle continue until adequate grazing is available in the VFA and the drawdown area.**
- **33/15 That the deadline for registration of buffalo in the NPA be extended to enable buffalo-owning resettlers, GOL and NTPC to plan and implement an equitable program for their removal from the NPA.**

#### **4.4.8 Off Farm Enterprises**

Off farm enterprises include employment, handicrafts, charcoal production, VFA furniture making, transport, other small business enterprises and tourism. While employment opportunities have dropped off with the near-completion of the construction phase, planning and training has begun to expand employment in the

years ahead. Weaving and tailoring have begun, while the VFA already has a successful furniture operation for providing school furniture. Reservoir transport, including marketing fish from fish camps, has potential as does promotion of small goods, machine and boat and outboard repair shops in resettler villages. A sustainable credit and business planning program has yet to be developed to encourage such activities which need to be as concerned with marketing as with production. Externally funded activities like tourism need to be carefully planned to ensure that they also benefit resettler villages.

Off farm enterprises should be spread equitably within and between villages. To date little attention has been paid to the risk that the elite in each village will capture a disproportionate number of project-implemented activities and off farm opportunities. The same applies to the more developed villages such as Nong Boua Kham, Nakai Noua, Nakai Tai, Thalang, Nam Niam, and Phon Pan Pek. Already the military village of Nong Boua Kham has received more than its share of project benefits. Nong Boua Kham is an outgrowth of Army personnel who ranched cattle for the military on the Nakai Plateau before the NT2 project. Those personnel are better educated immigrants of different ethnicity who have access to more education, resources and experience than households in other villages. The original plan was for the Army personnel to be resettled elsewhere but due to intermarriage and other factors it was agreed to consider them like any other resettler village. There is no doubt that they can play an important leadership role in the plateau's political economy but the risk of that being an exploitative role should be of concern to the NT2 project. Project favoritism is already indicated by Nong Boua Kham being the site of one of the two village health clinics, the recently opened Agriculture Center with irrigation, and the new pilot project for the "first fish collection and selling group."

**The POE recommends:**

- **34/15 That the livelihood program proceed cautiously with its off farm pillar until fulltime marketing expertise is available. In the meanwhile, the experience of the Downstream Program with village credit should provide guidelines for implementing a similar program in each resettler village.**
- **35/15 That an equitable program of off-farm enterprise should assist low, middle and upper income households in every resettlement village.**

**4.5 Waste Disposal**

The POE recommended in its thirteenth report that the Company address the resettler village waste disposal issue urgently, given the growing piles of rubbish visible in the villages and the attendant dangers to health. There is little evidence that progress has been made on this front---and the rubbish piles grow and are beginning to block drains. There are references to compost bins in briefings but we saw none on site. Consultations are said to be on-going. The POE suggests that NTPC consult with the Chief Executive of the Theun Hinboun resettlement scheme who has developed

plans for a comprehensive waste disposal plan for the villages he is resettling. These plans offer a model for the Plateau resettlement villages.

#### **4.6 Potentially Vulnerable People and Households on the Nakai Plateau**

The Social Development Plan estimated, on the basis of the 1998 census, that there were approximately 185 potentially vulnerable people among those requiring resettlement from the future NT2 reservoir basin. Ten years later only 33 households have been so certified as vulnerable by the Nakai District Governor. Though the number of vulnerable individuals in those households is not mentioned, their number is likely to be under 100. Based on that surmise, the POE wonders if the current count of 33 households is an underestimate which can be expected to increase during 2010 if living standards decline (see 4.4.2).

##### **The POE recommends:**

- **36/15 That the number of vulnerable households among resettled villages on the Nakai Plateau, and their food aid and income requirements, be reexamined during the 2009 rainy season.**

#### **4.7 Old Sop Hia**

The NT2 project appropriately has paid special attention to the welfare of the Vietic community of Old Sop Hia. This approach focused on allowing households that wished to do so to remain at the old village site. 14 households had selected that option at the time of the POE's March-April 2008 visit. Subsequently 14 additional houses were built in the Vietic hamlet in the resettlement village of Nam Nian as an incentive for the Old Sop Hia households to move there. All 14 households had selected that option by May 2009.

During the POE's March 2009 visit to Nam Nian, we were told that the four Vietic households in the new resettlement village of Sop Hia also wanted to move to Nam Nian so that all Old Sop Hia households once again would be together in one village. When the POE subsequently interviewed members of those four households, individuals from three were definite in their desire to move to Nam Nian. A younger woman from the fourth did not wish to commit herself since she lived with her parents who were not present.

##### **The POE recommends:**

- **37/15 That the NT2 project facilitate the move of the four New Sop Hia households to Nam Nian by building houses there and prioritize implementation of the livelihood development program for all 18 Vietic families.**

#### **4.8 The Reservoir Management Committee and Secretariat**

PM Decree #32 of 21 March 2008 established the Nam Theun 2 Reservoir Management Committee chaired by the Vice Governor of Khammouane Province. The Committee's mandate is "for the whole period of the Concession Agreement of Nam Theun Hydroelectric Project." Responsibilities include coordinating and cooperating with all agencies whose activities impinge on the Reservoir and directing, leading, and managing "activities concerning the use of land in the drawdown zone, corridor, and fishery in the Nam Theun 2 Reservoir."

The Committee's Secretariat (RMS) was established on 18 February, 2009 with an experienced head with a five year contract. When the POE interviewed the Secretariat's head on March 17, he had an initial staff of five with six more to be recruited. Plans to share facilities with the WMPA had yet to be implemented with the result that the Secretariat currently was crammed into a single office in the Nakai District Headquarters. Budgeting had yet to be worked out, including for a boat, so that currently the RMS only had two-wheeled land transport.

##### **The POE recommends:**

- **38/15 That high priority be given to establishing the Reservoir Management Secretariat as a functional agency with adequate budget, staff, office space, housing and water and land transport. Such action is essential granted the importance of the roles of the Reservoir Management Committee and Secretariat, the inadequate attention paid to date to reservoir management, and the increasing use of the reservoir to penetrate the NPA.**



NT2 technician analyzes water quality in new laboratory, Nakai.



VFA furniture manufacturing plant, Nakai.



Expatriate kiln production of charcoal from green timber near Ban Sop Phene.



Floating grass, favoured by buffalo, near Nong Boua Kham.



A resettled family's private aquaculture venture, Nakai Neua.



Children at work in resettled village school.

## **5. THE WATERSHED AND WMPA**

### **5.1 Introduction**

The Nam Theun Biodiversity Conservation Area (hereafter the NPA) is a mountainous area extending from the northeast edge of the Nakai Plateau to the crest of the Annamite Mountains, which is also the boundary with Viet Nam. It covers some 4,500 square km., ranging in elevation from 538 m (1,749ft.) at the reservoir edge at high water to over 2,000 m (6,500ft.) with scattered higher peaks. It is the largest protected area and the largest contiguous forest area in Laos. The watershed of the NT2 reservoir is included within the NPA. Except for valley bottoms near villages in the lower, western area it is densely forested, with a variety of forest types represented. No complete systematic survey has been completed but existing information indicates that from a biodiversity standpoint it is one of the richest areas in Asia, and probably in the world. It is the habitat for five species of large mammal new to science (or rediscovered by science), at least 14 globally endangered large mammals, and over 400 species of birds at least 8 of which are globally endangered. The botany remains little known but the area holds remarkable botanic diversity including a type of conifer-dominated forest apparently new to science.

The NPA is also exceptionally rich from the standpoint of cultural diversity. Most of the roughly 6,500 human inhabitants live in villages along the lower portions of the main rivers, but there are also small groups of people living higher in the NPA. The people in the NPA represent at least ten ethnic groups, three of which have only been described since 1966.

In its previous reports the POE has described the NPA and its globally significant biological and cultural diversity. As the POE's first hand knowledge of the area has expanded with each new field visit it has become increasingly impressed with the outstanding international importance of the area's unique biodiversity values. But we have also become increasingly disturbed by the magnitude of the threats they face.

Since the start of the NT2 project conservation of the biodiversity of the NPA and protection and rehabilitation of forest cover in the watershed have remained a fundamental objective of the NT2 Project. They are also a primary reason for the involvement and support by the World Bank and other international financial institutions and key environmental organizations. This is in part because protection of the NPA is an explicit offset under the World Bank's OP4.04 requirements for the area to be inundated, but it is also because of the clear global importance of conserving the area's biological diversity. In a somewhat similar fashion, protection of the area's cultural diversity has been an important objective of the project.

### **5.2 Conservation of the Biodiversity of the NPA**

Since its first report, the POE has emphasized the magnitude of the threats to the biodiversity of the NPA. Part of the threat is internal to the NPA, in terms of the resident human population. Throughout their past history in the NPA the enclave villagers have made use of non-timber forest products (NTFPs) including wildlife and plants, largely on a sustainable basis. The people's numbers were relatively limited

and the resources of the NPA were relatively large. In recent decades this has changed. Vietnamese traders easily cross the border providing the villagers with trade goods in exchange for wildlife. The result has been very significant depletion of wildlife of all kinds along with other valuable NTFPs, particularly in the extended regions around the enclave settlements.

However, the greatest threat to the NPA's biodiversity comes from outside its borders. The whole northeast border of the NPA is also the border between Laos and Vietnam, and the flow of Vietnamese poachers across the border is virtually unobstructed. Most bring wire snares and many come with weapons such as AK47s. Some snares are small and used for birds but most are bigger and are intended to capture larger mammals, including saola, tiger and gaur. The impact of this poaching is hard to overstate. During the POE's visit this year a WMPA biologist returned from about two weeks spent in one of the most remote parts of the NPA. Although his patrol was not looking for snares they encountered and collected about 1,300. Even though the area was far from the Vietnamese border, they found that every relatively flat spot by a river had been used for camping by Vietnamese poachers (identified by Vietnamese writing, cigarette packs and tins). The poachers hike in, put out snares, spend several days hunting and then return to Vietnam, usually leaving their snares in place where they continue to catch birds and animals for years.

The peripheral impact zone (PIZ) which is the northwestern border of the NPA harbours another major external threat. Villagers from that area poach in much the same way as the Vietnamese, and they have even been caught doing so by camera traps. The most recent aggravated threat is through the reservoir. At high water the reservoir provides unobstructed access by boat to areas of the NPA that were formerly difficult to enter. This opportunity is being taken advantage of by people both from the resettler villages and others. Well inside the NPA the POE encountered two boats with Hmong from the Ponsa-art village in Kamkeut District. But the resettlers appear to be the greater threat. The resettler villagers can cross the reservoir by boat and enter the NPA apparently at will. Since most boats are still not registered nor identified by colors and numbers on the hull, the WMPA patrols cannot identify the boats nor determine which ones have permission to be there. Clearly, the process of registering the boats and identifying them by large numbers on the sides, color coded by village, is a high priority and the all-too-slow progress to date should be accelerated.

We have been informed of a particularly telling incident that occurred last December. Villagers from the Ban Done resettlement village were poaching rosewood and were caught by a patrol. The patrol confiscated the wood and two hand tractors, but before they could load them onto a boat, a large group of people from the village, armed with knives, clubs and reportedly at least one rifle, confronted the outnumbered patrol and took back their tractors. The patrol took photographs and we were informed that a few of the villagers were put in jail in Oudomsouk. But this is a particularly disturbing precedent. If it is not dealt with effectively it can lead to a breakdown of law and order, affecting the fishery, forestry and agriculture as well as the biodiversity of the NPA.

**The POE recommends:**

- **39/15 That the relevant authorities deal with the Ban Done incident strongly and effectively so that it does not become a precedent that undermines law and order in the NT2 Project area.**

Illegal cutting of rosewood has continued vigorously in spite of the WMPA patrols. During this visit the POE spent some hours walking through the lower part of the NPA. We estimate that on average, every ten minutes or so we came to the stump of a poached rosewood tree.

The POE was present when a patrol encountered two boatloads of potential poachers. The patrol leader read the boatmen the Governor's decree that indicated they were not present legally. The boat people looked bored, then dutifully went back down the river toward the reservoir. The patrol leader explained that under their rules, the patrols could only arrest someone if they encountered them a second time, or they were actively engaged in something illegal, like rosewood or wildlife poaching. As he noted, the two boats probably would simply go back to the main reservoir, move to the next river and enter the NPA again. In the POE's experience the normal procedure in protected areas worldwide is that illegal intruders are apprehended, not just warned, the first time they are encountered. That system should be adopted by the WMPA patrols, since a warning obviously is no deterrent at all.

**The POE recommends:**

- **40/15 That the NPA rules and procedures be changed to specify that any person who is not authorized to be in the NPA should be apprehended when first encountered**
- **41/15 That the WMPA establish some form of identification for those who have a legitimate reason to be in the NPA.**

Further, to provide real deterrents to poachers in the NPA, the patrols, backed by the police, should have the power to have the poachers' equipment confiscated. This would include weapons, traps, boats, tractors and any other valuable material used in the commission of the crimes. This process should be automatic so that it cannot be circumvented by village heads or other authorities who are sympathetic to the poachers.

**The POE recommends:**

- **42/15 That the WMPA patrols, with police backing, be authorized to confiscate all equipment being used illegally by poachers, and that if possible, the process be made automatic.**

With the assistance of the World Conservation Society (WCS), WMPA has conducted several surveys to try to determine the status of the larger wildlife in the NPA. These have included both foot patrols and extensive inventories using camera

traps. These traps are placed to achieve a statistically significant coverage of the area involved, and the individual traps work day and night. In other reserves in Laos the traps, deployed by the WCS, have shown remarkable abundances of larger animals. In the Nam Theun NPA, however, these traps have indicated a real paucity of larger forms of wildlife. They have shown one bear, a barking deer, but no other deer, tigers, leopards, gaurs, saolas, or other larger forms of terrestrial wildlife. The camera trapping provides a proven, objective sample of wildlife in the area involved, and the POE's conclusion is that the intensive poaching of recent years has severely depleted the larger wildlife of the NPA. At the same time we understand that a number of the WMPA staff do not recognize or believe that the area's wildlife is severely degraded. Undoubtedly this attitude does not contribute to the effectiveness of WMPA's conservation efforts.

#### **The POE recommends:**

- **43/15 That WMPA continue and strengthen their educational exercise to ensure that the staff, most of whom are foresters, not wildlife personnel, understand the status, nature and magnitude of the threat to the NPA's biodiversity.**

It seems clear that in spite of WMPA's efforts to date, poaching remains a critical, and probably increasing threat to the biodiversity of the NPA. We recognize that the WMPA has only been in operation a short time while the poaching has been going on for decades. In effect, the WMPA inherited a very bad situation and they have made commendable efforts to reverse the situation. We consider that from the standpoint of its anti-poaching efforts the WMPA effectively lost a year last year because of the Board-directed transfer of the senior staff to the enclave village clusters. We also recognize that the new leadership of the WMPA and the revised organization they have created have only been in place a short time, and we recognize and applaud their efforts to improve the conservation situation. We also believe that although the SEMFOP explicitly recognized the sources of threat, it did not anticipate the magnitude of that threat. However, the POE believes that a new strategy is needed to assist the new WMPA leadership and organization to deal with the poaching situation.

For one thing more and more efficient effort must be expended on patrolling. A quite small part of the total budget at present goes to this crucial activity. It must have more. Secondly, the POE recommends that since the NPA boundaries are porous to poachers, a major effort should be made to protect smaller core areas inside the NPA where the area's signature wildlife still exist, while seeking to protect the outer borders more effectively. Recognizing that it will take longer to secure the whole area and that there will be continued losses of biodiversity, the objective of truly protecting a few core areas is to allow the saola, tiger, etc., to survive and hopefully, to recolonize the larger NPA when more effective protection is secured. Several, perhaps four, such core areas should be identified, and an intensive protection strategy developed and implemented. This would probably involve establishing guard posts adjacent to the core areas and deploying patrols from them.

Third, a major effort to remove snares from the NPA is required. The initial focus would be in and around the core areas, but this should be followed by a systematic clearing of as much of the total area as possible. Fourth, patrolling beyond the core areas needs to be greatly improved. One possibility would be to pulse protection efforts, saturating one area then moving to another. In any event, there must be an improvement in the effectiveness of the patrolling. One of the POE (LT) has seen first hand how truly effective a well motivated and led patrol can be against the poachers. WMPA needs to find ways to replicate that motivation and leadership and extend it throughout the NPA.

**The POE recommends:**

- **44/15 That the WMPA develop a new strategy to deal with the truly critical issues of wildlife poaching. The strategy would include establishment of core areas which include populations of the NPA's signature animals, including species such as the saola, tiger, gaur, etc., which are being extirpated from the rest of the NPA. These core areas should be the focus of intensive protection, intended to provide as complete protection as possible. At the same time, the protection of the rest of the NPA must be improved significantly.**
- **45/15 That a top priority be removal of the existing wire snares, first from the core areas and their surroundings, but followed by a systematic clearing of as much of the rest of the NPA as possible.**

The POE is very pleased to note that the new leadership of the WMPA has already initiated steps to improve the effectiveness of its patrols, especially through obtaining the services of the Puehpa (otherwise known as the Freeland company) who specialize in training protected area staff in Southeast Asia. We also strongly endorse WMPA's desire to adopt the MIST information system for its protected area efforts. The MIST system has been adopted as a standardized, effective and practical information system for protected area conservation elsewhere in Asia and on other continents.

**The POE recommends:**

- **46/15 That WMPA implement the MIST information system for its conservation patrol efforts as soon as possible.**

### **5.3 The WMPA**

In order to conserve the NPA's biological and cultural diversity, GOL created the Watershed Management and Protection Authority (WMPA). The original decree establishing WMPA (Prime Minister's Decree No. 25) states that: "For the purpose of the conservation and protection of the richness of the nature and considerable cultures in the area, the Prime Minister Issues this Decree." The SEMFOP (Executive Summary) states: "The SEMFOP-1 is the management plan for conservation of the NT2 watershed..." In the Vision Section it states: "The purpose of the Watershed is

the conservation and protection of its natural riches and its many cultural groups...” Under the CA (Schedule 4, Part 3, clause 2.2) and the SEMFOP (Part 1, clause 1.2.1), the key WMPA objectives, in order of listing, are: 1. Protection and rehabilitation of forest cover; 2. Biodiversity conservation; 3. Strengthening the capacity of the WMPA and stakeholders; 4. Livelihood improvement, poverty reduction and sustainable development; and 5. Prudent management and effective use of funds.

These are clear statements, but the POE has frequently observed that there is still not uniform understanding of the purpose and mission of the WMPA on the part of other GOL agencies, but more important, on the part of WMPA Board members and even WMPA staff itself. We understand that the summary part of the SEMFOP has been translated into Lao, however, since the SEMFOP is a very large two volume document that has not been translated into Lao, it is likely that its contents are not well known to some Board members and others who are involved. Consequently we reiterate our strong recommendation that the key parts of SEMFOP be translated into Lao and that a major effort be made to assure that all involved know and understand them. In particular, we further recommend that a workshop on the SEMFOP be held, chaired by the WMPA Board who would present and explain the SEMFOP and its mandate for WMPA.

#### **The POE recommends:**

- **47/15 That key parts of the SEMFOP, including the vision sections and the mandate for the WMPA, be translated into Lao without delay, and that a workshop in Vientiane be held, chaired by the WMPA Board, to present and explain the SEMFOP and its mandate for WMPA.**

The original organization of the WMPA did not prove adequately effective, and the IMA, POE and others recommended that there should be a reorganization. The POE congratulates WMPA on its successful accomplishment of this reorganization.

Because of the magnitude and complexity of the WMPA’s responsibilities it requires staff of outstanding abilities and productivity to accomplish them. Consequently, the SEMFOP specified that the staff should be paid at a higher level than normal GOL personnel. It was anticipated that the staff would be selectively recruited from a variety of sources on the basis of their outstanding potential. Unfortunately, it appears that the WMPA staff are for the most part at least, GOL employees, primarily from the Ministry of Agriculture and Forestry, who have simply been assigned to WMPA. It is not clear how many of them possess the high qualifications and provide the productivity that the SEMFOP envisioned. Except for senior officials virtually none speaks English, which inhibits access to information and best practice lessons from elsewhere.

It is instructive to compare the WMPA staffing with that of the WCS in Laos. The WCS handpicks its Lao staff, usually from the university. All speak English and all are reportedly technically qualified and productive. There appears to be an urgent need to upgrade the performance of the WMPA staff. Nobody should have the right of a guaranteed position in WMPA. There clearly should be rigorous annual



POE talking to villagers in Ban Navang in the NPA.



WMPA patrol leader reads regulations to suspected poachers in the NPA.



Artificial mineral lick replaces inundated natural one in the Watershed.



The NT2 powerhouse and outflow.



Sunset on the reservoir.



WMPA rangers in training.

performance evaluations, based on agreed criteria. These would need to be conducted by an outside entity, possibly the IMA. For the first several years the staff who place in the lowest, say, ten percent on the scores should be transferred out of WMPA. They should be replaced by persons specifically selected from a variety of sources for positions most needed by WMPA, not simply transferred from MAF or elsewhere in GOL. As possible, it would often be desirable to seek such individuals from the university.

**The POE recommends:**

- **48/15 That the WMPA have an outside entity (possibly the IMA) conduct annual performance evaluations of the staff, using standardized performance criteria, and for the next several years, at least, automatically transfer out all those in the bottom, say, 10 percent, replacing them with individuals specifically recruited for positions determined by the WMPA.**

To provide for the improved patrolling discussed above, WMPA will need to reallocate some of its existing funding. In the short run, however, we believe that this will not meet all the needs. Consequently the POE would support “front loading”, i.e. taking a portion of the funds allocated for the last years of NTPC funding for WMPA, and using them for the immediate patrolling needs. The theory behind this position is that there are truly critical needs for patrolling now, and that if they are effectively met, the needs should be substantially less at the end of the funding period.

However, the WMPA receives its annual funds from NTPC regardless of how well it performs. The POE is concerned that there do not appear to be effective criteria to determine whether, or how well, the WMPA and its staff have performed. The POE believes that there should be more accountability for the use of the regular budget of WMPA, and if the WMPA is to receive any additional “front loaded” funding, such funding should only be provided contingent upon WMPA providing year-end or other appropriate targets, specifying exactly what the funds are to be used for, and specifying both outputs and outcomes, i.e. bench marks or performance indicators by which the performance of those drawing on the expanded funding can be judged. Any further front loading would be contingent on the demonstrably successful use of the funds already received.

**The POE recommends:**

- **49/15 That WMPA be allowed to “front load”, i.e., divert a portion of the funds allocated for the last years of NTPC funding, in the range of US\$1.2 million (total funding) the first year, largely to strengthen the patrolling and biodiversity conservation efforts in the NPA. These funds would be contingent upon WMPA specifying (1) where it has made reductions elsewhere in its budget to free up funds for essential work (2) what the saved and additional funds are to be used for, and (3) performance indicators to judge the quality of the results. Any further**

**front loading funding in subsequent years would be contingent on the demonstrably successful use of front loaded funds already received.**

#### **5.4 Decentralizing the WMPA**

POE welcomes the changes that are taking place in the WMPA's organization and leadership and we trust that the recommendations in this report will lead to other significant developments. It is timely, therefore, to address another area of potential change. When WMPA was first created it was a new type of governmental institution in the Lao PDR. In part to emphasize its importance, and to assist it in its early days of development, the POE originally recommended that there should be a strong central government presence on the WMPA Board and that the appropriate Minister should chair the Board. WMPA is now well established and most of the matters with which it must deal are now more local and usually require local and rapid attention, often involving conferring with the Board or its chair. The villages in the NPA are in Khammouane's Nakai District, and one effect of having the central government chair the WMPA Board is to appear to place the largest portion of Nakai District effectively under central government, which is not consistent with our understanding that the GOL policy is to decentralize governmental functions where possible. Both the Governor and Vice Governor of Khammouane Province have maintained a strong interest in the WMPA and follow its developments closely. Consequently it would appear logical and timely for GOL to review the effectiveness of the present board structure and procedures against the objectives of Decree 39, and to implement its findings.

#### **The POE recommends:**

- **50/15 That the Government of Laos PDR review the effectiveness of the present board structure and procedures against the objectives of Decree 39, and to implement its findings.**

#### **5.5 The WARF**

Global experience has shown again and again that access is the greatest single threat to the integrity of protected areas. Recognizing that there are many pressures to provide open access to the NPA, we have frequently called for an overall access plan or strategy. Such an access framework, the WARF, is being developed by the WMPA. We understand that there is a difference of opinion within WMPA regarding the coverage of the WARF, with some suggesting that it should be limited to access only, i.e. trails or tracks for hand tractors between villages and from the reservoir. The other view is that it should be more of an overall protection strategy.

The POE's initial recommendations were for a focus on access, both within and from without. In a section above we are also calling for a new overall strategy for patrolling, which would include locating guard stations, etc. Regardless of which approach to the WARF is chosen, POE believes it must be done quickly. Each visit we hear of more tracks that have been built on an ad hoc basis rather than in accordance with a considered overall plan. The WARF must be a document that has sufficient status and permanence that adherence to it is required. Consequently, and

because POE was the body that originally called for such a plan, the final plan must be formally approved as consistent with SEMFOP and the CA by POE, and similarly, any subsequent modifications to the plan must be approved by the Panel.

**The POE requires:**

- **51/15 That the final form of the Watershed Access Plan or Framework (WARF) be approved as consistent with the SEMFOP and the CA by the POE, as must any subsequent modifications to it.**

**5.6 World Heritage Status**

The POE was very pleased to hear that there is now strong support for seeking World Heritage status for the NPA. The Governor of Khammouane Province expressed his desire to achieve such status, and we understand that there is support from high officials in the central Government. Because of the global heritage values of the NPA and the benefit to Laos and to the conservation and management of the area that World Heritage status would provide, we have repeatedly urged GOL to seek that status. The process of applying normally requires several years, so the POE recommends that GOL initiate the process as soon as possible. If there is any way the POE can assist GOL in this process we will be happy to do so.

**The POE recommends:**

- **52/15 That GOL initiate the process of applying for World Heritage status for the NPA without delay.**

**5.7 Other Issues Affecting the NPA**

**5.7.1 Military plans for the PIZ**

The POE was told of proposed plans for the military to take over a large section of the PIZ including the Ban Nakadok area and resettle (presumably voluntarily) the current residents of the affected villages. Beyond the resettlement issues discussed above, we are concerned about the potential impact on the NPA because this affects a substantial section of the boundary of the protected area. On the one hand, military control of the border and (if so ordered) suppression of poaching could significantly assist with protection of the NPA. On the other hand, unless the military is very well disciplined and directed, it could represent a potentially significant threat to the area's wildlife. Consequently, if this plan is carried out the POE emphasizes strongly that there should be close and continuing cooperation between the military and the WMPA, and that there be effective monitoring.

**5.7.2 Purpose of barges on reservoir**

The POE noted that there are large barges under construction or rehabilitation close to the reservoir near and within Oudomsouk. We were told that some still belong to the company that conducted the salvage logging. We have understood that

the remaining timber in the reservoir is to be reserved for the resettlers, but we have also been informed that the firm that conducted the salvage logging has been given the right to continue to remove remaining timber. In addition to depriving the resettlers of the timber, this action could make it more difficult to control rosewood and wildlife poaching in the adjacent NPA, so we are concerned about the purpose of the barges and their future use. Consequently the POE requests clarification of the purpose and anticipated use of these barges and the ownership of the remaining timber in the reservoir.

### **5.7.3 Thongkong Road**

We did not visit the Thongkong road during this mission, although we did last year. At that time it was clear that in spite of some attempts to cut the road it was still passable by two wheel vehicles, and hence still represented an entry point into the NPA for potential poachers. When the POE reluctantly gave approval to construct the road it was with the absolute condition that the road be cut when no longer used for salvage logging. Consequently, we reiterate our requirement that the road be made truly impassable to vehicles.

**The POE requires:**

- **53/15 That the Thongkong road be made truly impassable to vehicles.**

### **5.7.4 Mineral Licks**

The POE congratulates NTPC on the successful and impressive construction of mineral licks which is ongoing by the WCS under contract from NTPC. These are to replace the licks that are inundated by the reservoir, and we were very impressed with the efforts that we saw. A second objective of the licks is to help keep the elephants on the NPA side of the reservoir, away from the resettlers' villages. At the same time there is a program in the resettlement areas to provide mineral sources for the resettlers' livestock. We understand that some of this effort involves creating or providing salt blocks which are excellent for livestock but not for elephants. However, some involves simply dumping minerals on the ground, and the effect of this is to create small scale mineral licks that attract elephants and other wildlife. Elephants already are a threat to Khone Kaen, where they have broken through fencing around 0.66 hectare fields and consumed crops, including bananas.

**The POE recommends:**

- **54/15 That provision of mineral licks for domestic livestock in the resettlement villages be limited to mineral blocks, not creation of small scale dirt licks that attract elephants and other wildlife.**

## **5.8 Livelihood development in the Watershed**

The POE is not convinced that livelihood development in the WMPA areas is progressing in the right directions or fast enough to lift living standards and help in

heading off ongoing harvesting of wildlife and valuable woods by villagers in the watershed---though as noted above the main threat to biodiversity comes from outside the NPA itself. We visited by boat villagers on the Nam Noy and the Nam Xot and walked across to the Ban Navang cluster. There was little evidence that the decentralization experiment had achieved much perceptible improvement in the planning and management of the livelihood program though there have been some welcome improvements on the social front such as the provision of clean water supplies to 700 families, access walking track improvements, a secondary school set up in the Teung cluster and the establishment of rice banks (drawn on by most families) in the Navang cluster.

There is a need for some really fresh thinking on what works in fostering livelihood development in difficult situations such as those faced in the watershed and its buffer zone. Is the investment of \$59,000 in building a 50 ha. irrigation system, buying a four wheel tractor, and setting up a 10Kv micro-hydro generator in Vang Chang village an appropriate use of limited funds? Is the preoccupation with large livestock and rice production the most appropriate way forward in the circumstances of a high country Protected Area? Where lies true food security rather than rice self-sufficiency? Down on the Nakai Plateau the NT2 project planners have no doubts: in a briefing at the March 2009 livelihood workshop the Plateau Livelihood Team stressed diversification of income sources so that households get food security through cash rather than rice production. The watershed dwellers do not have as many cash options as the Plateau people but they do have a range of crop, small livestock, NTFP, and employment options to help them achieve food security---and intensified rotational agriculture is less costly and more reliable as a rice producer in high country watershed conditions than irrigated dry season padi.

The average household in the NPA has four hectares of relatively flat land and around seven hectares of slope. With a growing population the need is to adopt cultivation patterns which reduce fallow times from 7-10 years to around 3 years. Some techniques which have worked elsewhere in Laos are the application of composite (and cheap) fertilizer from Vietnam, the sowing of stylo grass for twelve months as stock feed and nutrient and, most importantly of all, the sowing of high quality proven seed, whatever the crop. Work on crop testing and acceptability in watershed villages was undertaken in the mid-nineties by IUCN advisors living in the villages. Their reports on promising experiments should be obtained from the IUCN Office in Vientiane by WMPA and consulted. Work should begin on designing a diversified and flexible productive system featuring improved rotational cropping systems.

In summary, there is a crying need for new thinking on the livelihoods side with active fostering at all levels of the development of livelihoods which make sense to watershed dwellers and build on their existing knowledge, skills and strengths.

**The POE recommends:**

- **55/15 That a “cheap and quick” version of the recent widely representative Plateau livelihood workshop be convened in Nakai to review the philosophy, objectives and working of the Watershed**

**livelihood development program with a view to seeking a consensus on its future shape and direction and to consider the draft livelihood development program and community development strategy for the next five years now being worked on by WMPA.**

Some inspirational leadership is also called for on the livelihoods side. There is a need for a senior and experienced person in WMPA headquarters who has the background and drive to get a more dynamic livelihood program reshaped and up and running. No-one is doing this at the moment though there are two able people seconded on a part-time basis from MAF either one of whom might fit the bill if he were fulltime and given a new mandate. At the same time, there should be some downsizing. There is duplication and cost involved in having a DDG responsible for the PICAD program, plus two senior national TAs, plus a (new) DDG responsible for imparting new drive into the livelihood development program. Probably two of these four could be dispensed with.

**The POE recommends:**

- **56/15 That, subject to views expressed at the above workshop, the present management of the livelihood work in WMPA headquarters be restructured to bring in at DDG level an experienced, flexible and active (probably MAF) officer to lead the WMPA's livelihood development program to a more effective level. The level of his annual remuneration, like that of other senior officers, should be performance based. Downsizing of the senior headquarters staff to make room for this additional manager would be required.**

Would all the above be financially prohibitive in the present stretched budgetary situation facing the Authority? Not necessarily so since what is envisaged is not a high-spending program involving high cost inputs but a reorientation toward “thinking small” with cheaper inputs like good seeds and low cost fertilizers rather than four wheel tractors and the like. There is also a case for making the best use of limited resources by, for example, bringing the WMPA and GOL/NTPC programs closer together by drawing on the livelihoods expertise of the Plateau team, further developing the productive and growing relationship with Vientiane-based World Bank technical staff, investigating the role which the International Centre for Tropical Agriculture and NAFRI might play in developing new crops and cultivation techniques and exploring a possible future role for other donors in the watershed and the PIZ.

That said, there is a case for some “front end loading” of the livelihoods program as there is in the case of the conservation work. Putting in place as soon as possible an effective such program as a complement to the conservation work in the NPA and the PIZ is important to the success of the whole exercise so an expanded livelihood provision in the 2009 financial year might well make sense. But this is an issue which might be addressed more authoritatively by the proposed watershed livelihood workshop.

## 5.9 Family planning

The POE has observed over the years an evolution in the thinking of watershed women on family sizes and planning. Ten years ago 4-5 children were planned and many families were larger than this. Now the usual answer to questions asked of young women about family size is that 2-3 children are planned. The POE talked to several women in Ban Navang about this and other issues. They said that they “were afraid that they could not afford to provide for any more than three children”. They were knowledgeable about family planning techniques. They all have regular injections to enable them to regulate conception and said that the health clinic (one km. away) seldom runs out of supplies but that if it did they had their own supply of contraception tablets to take. The POE was impressed at the speed of attitudinal changes and planning practices on this always sensitive subject in one decade.

## 5.10 Backwater impact on the Nam Xot

The POE learned on arrival in Vientiane, perhaps eight months after the event, that a backwater effect following dam closure had inundated approximately 80 ha. of rainfed cropland (though no houses) in three villages on the Nam Xot and that the inhabitants of the Songkone village had been instructed some months later by the District to move a kilometre or so upstream to the village of Nahao. Until a week earlier than the POE, the NTPC had also not heard of these events, which is most surprising. The POE discussed the matter with the Minister of Energy and Mines before going into the field and reported back to him on return.

The POE visited the old and new sites of Songkone, talked to a family still cultivating some non-inundated fields, and talked to other affected villagers now resident in New Songkone. Our conclusions are:

- that the backwater effect was a project impact which might have been mitigated quickly by clearing fresh land for cultivation and providing food supplementation in the interim if the NTPC had been aware of the situation (which they should surely have discovered themselves)
- that the situation was used by the District to implement the physical removal of an un-inundated village into its neighbour
- that there should now be fast action to assess the resettled villagers’ needs, provide food---urgently needed in one case we saw---find comparable land to that lost, clear the land if necessary, provide technical assistance by way of advice, seeds and fertilizer before the forthcoming wet season and provide wells for the resettlers for clean water where this is called for. Around 80 ha. of new land will be required which may necessitate encroaching on forestry land.

### The POE recommends:

- **57/15 That mitigatory and compensatory action be taken by NTPC as a matter of urgency (they have initiated this) in order to help the resettled villagers of Songkone to survive the coming wet season and re-establish their agricultural base.**