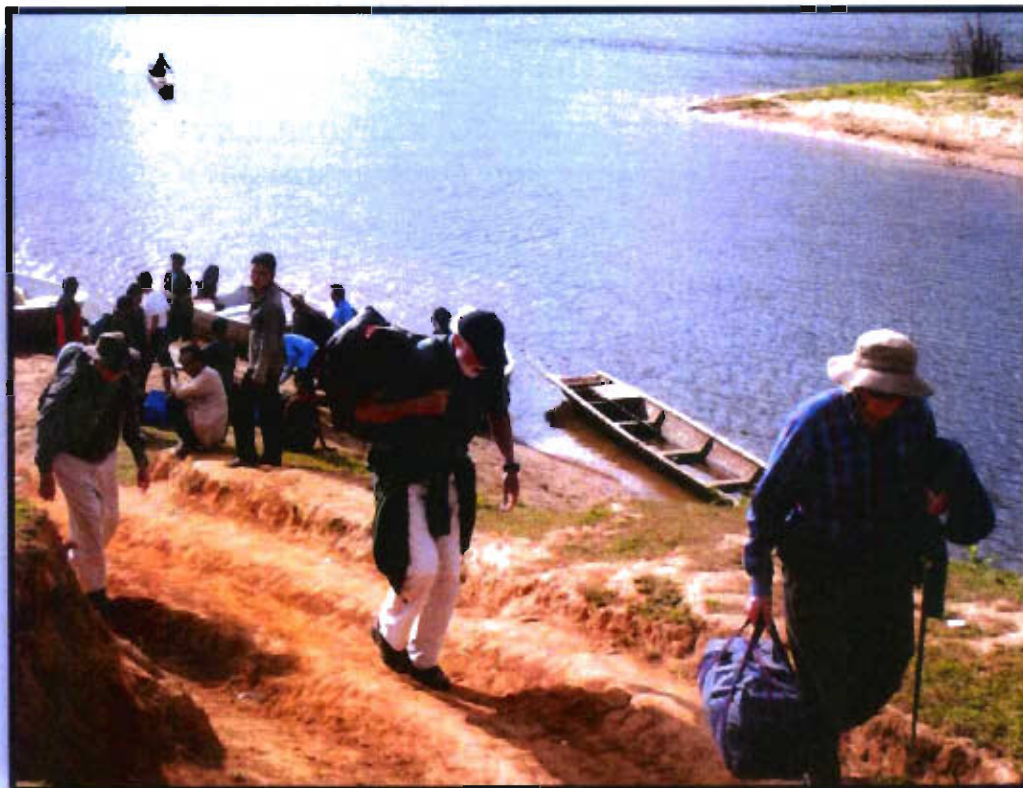


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LAO PEOPLE'S DEMOCRATIC REPUBLIC - GOL Support
NAM THEUN 2 MULTIPURPOSE PROJECT



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

2 February 2013

**DAVID McDOWELL
THAYER SCUDDER
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**Cover photo: POE arriving at Nahao for an overnight stay
(photo courtesy of Xavier Bouan NTPC)**

LIST OF RECOMMENDATIONS

The POE recommends:

- **1/20 That a teleconference be held in mid to late March to prepare for a workshop on indicators in Laos during the POE's May-June visit and that Lee Talbot initiate discussion with GOL, NTPC and the IFIs on this issue during his February visit to Laos.**

That serious consideration be given to delaying the final LSMS survey until 2014 (with the POE assessment to follow in the same year as soon as the survey results are available) and that the timing of other major monitoring surveys also be reconsidered.

- **2/20 That to maintain momentum GOL Ministers and the Provincial Governor oversee the swift transfer of adequate budgetary resources to maintain the coordinating role of the RMU through September 2015 and enable livelihood development services to be provided by the District agencies in the project-affected downstream villages and that they also give consideration to the possibility of a multi-year budget provision.**

That the World Bank and ADB seriously consider the POE's belief that more IFI assistance than currently envisioned will be necessary if restoration of livelihoods is to be achieved.

- **3/20 That future NTPC socio-economic surveys compare living standards between the 92 and 67 XBF project affected villages.**

The POE supports:

- **4/20 The GOL decision to adopt Option 1, involving RDPEO assuming responsibility for managing the VIRF from January 2013 and encouraging shareholders to leave their share capital**

available to the VIRF so that they may continue to draw upon the Fund for fostering livelihood and related activities.

The POE recommends:

- **5/20 That NTPC continues to provide backup support to the Health Program initiators and takes a particular interest in the recording and analysis document being prepared to facilitate replication of this model rural primary health system elsewhere and that the Ministry of Health provide the necessary resources and access to enable the part-time consultant (Dr. Pany) to undertake an effective oversight role.**
- **6/20 That government officials at the central, provincial and district level prioritize discussion on ways in which Nakai District can meet its future budgetary, staff and capacity responsibilities.**

That the next round on the Nakai Socio Economic Survey, and all future monitoring, place equal emphasis on consumption and income and include data on, for example, infrastructure maintenance, depreciation, household debt and access to a range of stable and legal income sources.

That a special effort be made to delete income from Rosewood and other illegal activities from resettler income and that careful surveying of resettler debt continue.

- **7/20 Because current livelihood programs for resettler households may not meet CA requirements, that major development efforts are required in the years ahead. Increased emphasis on agro-pastoral forestry is one such requirement while an increased capacity of Nakai District staff to assist resettlers to meet CA requirements is another. More emphasis on secondary and tertiary education of resettler youth for staffing agricultural programs, schools and health services is also necessary.**
- **8/20 That the closed nature of the Nakai reservoir fishery as stipulated in Decree number 24/PM be extended for another ten years beyond April 2018.**
- **9/20 That an immediate reassessment of the volume and quality**

of the remaining VFA forest resource, perhaps utilizing high resolution satellite imagery with ground-proofing as well as suggested by the World Bank, be authorized by the VFA Board and undertaken urgently by an independent agency as a basis for redirecting the VFA's operations.

- **10/20 That the VFA Board and Village Forestry Committees be briefed urgently on the uncertainties surrounding the wood resource situation, its implications and the options before them as a preparation for early redirection decisions.**

That a search begin now for a new VFA manager with the skills, vigor and leadership qualities required to steer the VFA through a new phase in its evolution.

That in the interim no new timber purchasing contract be signed.

That in order to keep their options for the future open the Board defer until the results of the wood assessment are known a decision on paying a further dividend to resettler shareholders from current revenues and suspend all current logging immediately.

- **11/20 That the new VFA Board take up with the GOL at a high level the matter of the excessive number and scale of fees, levies, charges and taxes being paid by VFA on the basis that this is not a conventional commercial venture but a form of compensation to villagers moved out of their traditional lands in the interests of making way for a project of national significance, all of which should be recognized in the tax structure and levels.**

That with the objective of agreeing on a sensible and equitable regime for benefit sharing from VFA's timber production, and having regard to the restricted resource remaining, consideration be given, for example, to removing the anomalous reforestation and quota fees, retaining the VAT but imposing it only on sales revenues and, in recognition of the compensatory intent of the resettlement exercise, reducing the logging and other fee payments required of purely commercial wood harvest enterprises.

- **12/20 That NTPC take responsibility for a development program that will mitigate the adverse impacts of the reservoir on the agricultural economy of that large majority of Songkhone households whose fields have been flooded by the reservoir. Such a program will require, among other activities, (1) comparison of land and rice yields lost with yields from land received; (2) finding, surveying, clearing, and fencing additional land to replace yields lost; and, especially important, (3) recruiting and financing an expert with the relevant skills to work with Songkhone villagers until a land use system, also intended to benefit the other two villages, has been developed that will replicate yields lost.**

That further consideration be given to drawdown agriculture and gully dam irrigation.

- **13/20 That as a priority, GOL ensures that DAFO and the other local authorities are provided with adequate staff and capacities to handle the handover of watershed responsibilities required by PM Decree 471. We have suggested in an earlier recommendation above that this sort of assurance may well require intervention at the highest Provincial level to be achieved.**
- **14/20 That the WMPA hire the Biodiversity Protection Technical Advisor either on regular staff or as a multi-year Advisor.**
- **15/20 That the recommendations and agreements from the December 20 WMPA meeting on law enforcement be approved and implemented without delay.**
- **16/20 That without delay, the WMPA develop and implement a funding procedure that is based at least in part on verifiable conservation outcomes achieved.**
- **17/20 That the buildings of the Phonesack lumber mill on the Nakai Plateau be removed, and in any event, that the site be monitored .**
- **18/20 That WMPA monitor the eastern section of the NPA up to the border with Vietnam using satellite images interpreted by a**

skilled satellite photo interpreter. This should be done a minimum of twice a year and preferably more, to detect any incursions in the form of roads, trails or logging.

1. INTRODUCTION

This is Report 20 of the International Panel of Environmental and Social 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 (Professor Emeritus, California Institute of Technology, USA) and L.M.Talbot, (Professor, George Mason University, Virginia, USA).

The main focus of this mission was to assess the process and impacts of handing over progressively to the Government of Laos (GOL) the responsibility for execution and eventual completion of the project in all three principal areas; notably downstream of the dam in the Xe Bang Fai (XBF) basin, on the Nakai Plateau, and in the watershed.

The handing over process from project agencies to affected people, villages, government agencies and such civil society agencies as NGOs has seldom been satisfactorily implemented in connection with large dams. In the POE's opinion it remains to be seen if GOL and the Nam Theun Power Company (NTPC) will be able to complete a satisfactory handing over process. We are encouraged by the recent decision by GOL to extend the life and role of the NT2 Steering Committee to 2015 since it brings an enhanced overall coherence to the project.

In the downstream area the NTPC officially handed over its responsibilities to the Government of Laos on 14 December 2012 while on the plateau the resettlement process is scheduled to be completed by April 2016. The Watershed Management and Protection Authority (WMPA) is restructuring and handing over in the months ahead many of the responsibilities for conservation and development to cooperators in other government bodies in accordance with Prime Ministerial Decree #471.

Consistent with this mission's focus, the report is organized into three main sections dealing (1) with the handover process in the Downstream Program (DSP) in the XBF; (2) the handover process in the resettlement villages and ongoing livelihood activities on the Nakai Plateau; and (3) the restructuring and handing over of some responsibilities in the watershed by the WMPA.

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, along with some executive functions, and towards the conclusion of the respective Implementation Periods, to review and report on the status of the Project's environmental and social goals. The POE remains a standing body for the period of the concession. The POE submits its findings to the GOL Minister of Energy and Mines and to Deputy Prime Minister Somsavat Lengsavad, addresses recommendations to the GOL, Nam Theun 2 Power Company (NTPC) and the International Financial Institutions (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 (ADB) on such issues as the environment, indigenous peoples and resettlement with development.

1.2 Panel Activities

All three Panel members (David McDowell, Thayer Scudder and Lee Talbot) arrived in Vientiane on 17 November, 2012. That day and the next informal meetings were held with various individuals involved with the project to obtain further background information. On November 19 and 20 meetings and briefings were held with the Minister of Energy and Mines, Soulivong Daravong, the Department of Energy Business (DEB) of the Ministry of Energy and Mines, the NTPC, the World Bank, the Asian Development Bank (ADB), the Secretariat of the National Project Steering Committee on the XBF and Xe Bang Hieng Basins, and the Lao Holding State Enterprise.

On 21 November the team drove to Thakhek for meetings and subsequent dinner with the District Governor, Khambai Damlath and his staff. The following day was spent in briefings with the Resettlement Management Unit (RMU), the NTPC Downstream Program (DSP) staff, and the Health Program, followed by a visit to the XBF District Center for Seed Production and Capacity Building which also entailed visits to "farmers talking to farmers" model farms for fish culture and cattle raising. Friday 23 November's meetings and briefings involved the ADB Smallholder Project staff and the World Bank Khammouane Development Project staff, followed by travel to the Nakai Plateau. En route the Panel visited one of the 67 villages which received cash compensation rather than

the full package of technical assistance given to 92 other impacted villages and the Gnommalath Irrigation Project.

The following morning was spent with the new Director of the Watershed Management and Protection Authority (WMPA) Phouthone Sophathilath and his staff and in the afternoon the team proceeded by boat to Nahao Village, on the Nam Xot to evaluate the Eco-Lao administered program for compensating the village for land lost to the reservoir and for fostering livelihood development.

The next afternoon the team returned by boat to the main reservoir and visited one of the successful artificial mineral licks and examined one of the NTPC-built artificial wetlands which had been cut by poachers and subsequently repaired by NTPC.

Monday and Tuesday, 26 and 27 November were spent on the Nakai Plateau, with meetings with Nakai Governor Bouma Soutsadavone and his staff, Village Extension workers, the Village Forestry Association (VFA), the NTPC livelihood and environmental teams, and the Village Fisheries Co-Management Group. Tuesday afternoon Lee Talbot met again with the Director of WMPA for further in depth briefings while David McDowell met with senior WMPA staff to discuss monitoring and evaluation issues. Thayer Scudder visited the Southern Cluster office and staff at Phonsavang.

On 28 November the team drove back to Vientiane. En route they visited the Chinese charcoal plant in Oudomsouk and the Phonesack lumber mill. Subsequently they viewed the impacts of the current road work on Route 8B over the ridge between the Nakai Plateau and the Lak Sao plain, then proceeded up the track to the east to examine the former illegal mining site near Nakadok, before returning to Vientiane via Lak Sao.

29 and 30 November were spent in Vientiane with meetings with the Deputy Prime Minister, Somsavat Lengsavad, the Minister of Energy and Mines, Soulivong Daravong, report writing, and a wrap up meeting at the Ministry of Energy and Mines with GOL, the IFIs and NTPC. Thayer Scudder and Lee Talbot left Laos on December 1, and David McDowell left on December 4.

1.3 Acknowledgements – Appreciation

The POE expresses its appreciation to Patrick Dye of NTPC for organizing the very full, worthwhile and productive program for the POE. The Panel is particularly grateful to Deputy Prime Minister Somsavat Lengsavad for a very productive meeting, and to Minister of Energy and Mines, Soulivong Daravong, for taking the time to meet with the Panel twice. We are grateful to Khammouane Governor Khambay Damlath for his time, insights and hospitality, and likewise to Nakai District Governor Bouma Soutsadavone. The Panel is grateful for the time, information and advice from the many individuals we met, including NTPC CEO Michel Robino, NTPC E& S Director Ruedi Luthi, NRO Manager Xavier Bouan, Dr. Pany Sananikhom, World Bank Country Director Keiko Miwa, WB NT2 Manager Ingo Wiederhofer, ADB Country Director Chong Chi Nai and ADB consultant Elizabeth Mann, RMU Manager Sivixay Soukkarath and Deputy Manager Mme. Keoula Souliyadeth, WMPA Director Phouthone Sophathilath and WMPA Deputy Directors Sullyasack Chaiyavong and Soukkhatha Vannalath and many others in the DEB and other GOL units, World Bank, and NTPC . As always, NTPC's Phalim Daravong accompanied the Panel throughout the visit and provided essential assistance. And as always, the Panel is extremely grateful for the warmth and willing help it has received from all the Lao and others it has had the pleasure and privilege of meeting.

2. MONITORING

Complex, large, multipurpose, national development projects like NT2 must necessarily involve a wide range of project-relevant agencies and individuals that have different interests according to their expertise and responsibilities. In assessing NT2's E & S outcomes the POE has both strengths and weaknesses in regard to other involved parties. The main strengths are two. The first is the POE's familiarity with the previous outcomes of a significant number of other large dam projects. It is due to this strength that the POE is particularly concerned with the adequacy of the handing over process. This is especially the case where small countries like Laos have had difficulties in continuing the E & S components of complicated internationally-supported large dams.

The POE's second strength is due to the same three POE members monitoring the E & S components since 1997 (one member, David McDowell, initially was a member of the World Bank's International Advisory Group).

The POE's main weaknesses have been spending less than one month a year in project zones to access developments sustained on the ground and inability to speak or understand Lao. For such reasons the POE must place considerable reliance on the reports of other agencies and individuals that monitor or have on the ground familiarity with E & S components.

The delayed implementation of an improved monitoring process has been a major constraint for the POE and, in the POE's opinion, increases the difficulty of assessing, for example, whether or not Nakai Plateau resettlers will have achieved income targets by 2014 and whether or not the handing over process in the Xe Bang Fai basin is on track. In the light of the POE's view of the present state of the livelihood programs a delay in undertaking final surveys would appear to be prudent. In CA terms the timing relates to when the Nakai RIP began. There is room for debate over this.

How to proceed? The IFIs recently suggested an urgent need to formulate a number of indicators that will deal with the CA's emphasis on the perhaps indefinable concept of sustainability. The POE agrees with the urgent need to identify such indicators and recommends a process for proceeding. The POE also recommends, for the reasons set out in the preceding paragraph, that the advantages (and potential disadvantages) of delaying the final LSMS survey until 2014 be considered at the same time,

if not settled beforehand. Those two recommendations are presented below. Recommendations for improving future NTPC and WMPA monitoring surveys are included in Sections 3, 4 and 5.

The POE recommends:

- **1/20 That a teleconference be held in mid to late March to prepare for a workshop on indicators in Laos during the POE's May-June visit and that Lee Talbot initiate discussion with GOL, NTPC and the IFIs on this issue during his February visit to Laos.**

That serious consideration be given to delaying the final LSMS survey until 2014 (with the POE assessment to follow in the same year as soon as the survey results are available) and that the timing of other major monitoring surveys also be reconsidered.

3. THE XE BANG FAI DOWNSTREAM PROGRAM

3.1 Introduction

The comments on the Downstream Program below should be prefaced by the observation that in the POE's understanding this is the first large multipurpose hydro project globally to have set up a program specifically to address and mitigate the adverse impacts of the operation on those downstream of the reservoir, both below the dam and below the powerhouse. That is freely acknowledged and applauded. And the mitigation of physical impacts has largely been achieved. That is commendable.

But it is also true that the social and environmental programs were initiated very late, were inhibited by limited funds and, in the POE's opinion, are being wound up prematurely without achieving that restoration of livelihoods on a sustainable basis of all Project Affected People which is a basic objective of the exercise.

The adjacent Theun Hinboun Extension Project has learned the lesson about maintaining momentum and will go on providing technical assistance and modest backup in livelihood development - often using NGOs - virtually until the end of the concession period. That is the new precedent.

The timetable now being implemented is not what the CA appears to envisage. The CA states unequivocally that the Mitigation, Compensation and Resettlement Process in the Downstream Areas shall continue until the later of the fifth anniversary of the Commercial Operations Date and exhaustion of the available funds. The latter is occurring now, more than two years before the end of the Resettlement Implementation Process (RIP), so the implementation period will last until the fifth anniversary which is April 2015. The Process continues and its outcome, with no further input from the NTPC planned, will be assessed by the POE six months prior to the RIP. The above should be borne in mind in interpreting the detailed comments which follow.

3.2 The Handover Process

The provision of technical assistance, advice and equipment to livelihood development programs in 92 of the 159 project affected villages along the XBF and its tributaries and hinterlands has achieved considerable

success. Many PAPs have been able to make good use of the advice provided and have drawn on VIRF funds to progress further.

Unfortunately the premature, in the POE's opinion, decision to wind up this most useful program meant that in 67 villages, households were given a sum of money (totaling US\$945,000) by way of compensation and that NTPC will not be providing the accompanying advice and assistance which have provided thus far much of the momentum to the livelihood program in the more fortunate 92 villages.

This is regrettable: the common experience with other large dams is that cash in hand, though well used on occasion by the prudent and those with assessed business plans, tends not to be invested in productive activities but to be used for consumer items and routine living expenses. And with the handing over of all the cash compensation there are no funds to transfer into the village level micro finance mechanism (VIRF). It is difficult to see how this move will help produce the CA objective of restoring livelihoods in a sustainable way though the GOL agencies now addressing the work, with help from IFI programs, will doubtless endeavor to maintain the momentum.

Although, based on a careful inventory, NTPC decided that the 67 villages would be the least affected by the NT2 project, the only way to check such a conclusion is to compare livelihood in future socio-economic surveys between the 92 and the 67 villages. The POE makes such a recommendation below.

As for the use of cash compensation, the POE has reiterated in a number of reports its opposition to the use of cash as a livelihood compensation and development mechanism at the village level. In the XBF downstream area we believe in connection with the 67 villages that the welfare of households and villages in which fishing is a major source of protein and income may be especially at risk. In the lower portion of the XBF Basin approximately 20 of the 67 villages are close to a XBF tributary and hence may be adversely affected by the project (see map on page 98 of NTPC's July – September, 2012 Quarterly Progress Report).

The tenor of the Concession Agreement, with its emphasis on “fish for fish” we believe supports our concern about the use of cash compensation for livelihood restoration in those of the 67 villages in which fishing is important as does information in the Final Report of the NTPC 2012 Socio-Economic report.

In the CA section on loss of fish and aquatic produce (item 6.1 on page 19) no mention is made of cash compensation. Rather “PAPs are entitled to participate in livelihood restoration programs so as to ensure that their level of fish, protein and fisheries income lost, are at least restored to pre-Project levels” and “that PAPS are entitled to receive the full benefit of the technical assistance and extension services to be provided by the Company.”

According to the 2012 Socio-Economic Survey, “Fishing was the largest source of income for the majority of households in the study area” (page 133). As for the importance of fisheries in areas that include some of the 67 villages, between 2009 and 2012 “Greatest loss of income occurs on the lower Xe Bangfai (riparian and hinterland households recording a reduction of approximately 50%).”

It is not too late to take corrective action. Recently, the RMU with ongoing GOL finance has overseen district level efforts to coordinate activities between District Working Groups, DAFO, the World Bank’s KDP and the Asian Development Bank’s SHDP. The RMU is playing a similar role in Savannakhet’s Xaibouli District.

Anticipating handover needs, both the World Bank and ADB have expanded their respective KDP and SHDP. That said (and welcomed), the POE believes that further expansion, including more finance, scope and duration, may be necessary if handing over is to succeed. The POE recommends below that the KDP and SHDP should consider playing more active roles in helping GOL agencies to bring technical assistance and training to some of the 67 villages. In the case of the SHDP a more active role might involve working in DSP villages in Xaibouli District and further extension of the current program for “promoting sustainable commercial smallholder agriculture and associated agribusiness” along with market access; a program that relates directly to the Prime Minister’s emphasis, during his January 2013 visit to Khammouane Province, on the need to provide more technical assistance to farmers and to increase commercial agricultural production. While the ADB project has been expanded to include Xe Bang Fai and Mahaxai Districts, to accomplish project goals in only two years in those less developed districts (plus Xaibouli, if agreed) both of which include significant numbers of ethnic minorities, appears unrealistic to the POE.

Additional district livelihood development activities should be coordinated with EDL, NGO and other agencies to ensure that each of the 67 villages receives relevant technical assistance and extension such as

already has occurred in Nakock-Nai (one of the 67 villages) where EDL is installing electricity and DAFO and World Vision are providing assistance.

The POE recommends:

- **2/20 That to maintain momentum GOL Ministers and the Provincial Governor oversee the swift transfer of adequate budgetary resources to maintain the coordinating role of the RMU through September 2015 and enable livelihood development services to be provided by the District agencies in the project-affected downstream villages and that they also give consideration to the possibility of a multi-year budget provision.**

That the World Bank and ADB seriously consider the POE's belief that more IFI assistance than currently envisioned will be necessary if restoration of livelihoods is to be achieved.

The POE recommends:

- **3/20 That future NTPC socio-economic surveys compare living standards between the 92 and 67 XBF project affected villages.**

3.3 Irrigation along the XBF

Initial hopes and plans for gravity fed irrigation along the 29 km irrigation channel and the Nam Kathang below the holding reservoir have been undercut by events and initial studies. Though initially NTPC proposed 15 turnouts to provide irrigation for 4,120 ha, only three (Outlets 3, 4 and 5) were finally provided along the channel with two more outlets (1 and 2) built into the regulating dam to serve the Nam Kathang.

The latest study available to the POE is Richard Brown's December 2011 Strategic Plan for [XBF] Downstream Irrigation Development. In his concluding section on "possible feasibility recommendations," Brown writes that irrigating 1,860 ha from Outlet 1 "could well be economically feasible" though some pumping will be necessary. Brown doubts irrigation from Outlet 2 will be economically feasible although irrigating 800 ha may be socially justified because of various negative NT2 project impacts in Gnommalath District.

As for Outlets 4 and 5 along the 29 km channel Brown recommends no further studies because of flooding and other problems; he also implies that neither outlet should have been constructed in the first place. Outlet 3 is intended to irrigate 3,445 ha.

Ways in which the Development Project on Water Resources at the Nam Theun 2 Regulating Dam, Xe Bang Fai and Xe Bang Hieng Basins (overseen by DPM Somsavat Lengsavad) could help in the more distant future deserve serious attention. The POE suggests, however, that the EIA required by the Chinese include an adaptive management approach which, as suggested by Peter Rogers in his Appendix to the POE's 20 March 2012 report, also considers use of ground water for irrigation, further options for living with floods, and how village farmers can commercialize other crops now that national rice self-sufficiency is being achieved.

3.4 VIRF (Village Restoration Fund)

An effective micro finance credit system has come to be recognized as a key feature of successful village development schemes in many developing countries. Having such funds available in all villages across the country is the firm policy of the GOL. The VIRF is meeting the requirement in 92 villages in the downstream zone where, in the words of the DSP Manager, "most of the VIRF loans have been used productively". The POE is concerned that the system not become a casualty of NTPC's withdrawal from the DSP.

VIRF's survival as an effective stimulant to income-producing activities in the 92 villages is far from guaranteed. When it became clear that NTPC was determined to withdraw from the DSP by the end of 2012 the GOL switched from designating the Lao Women's Union as the replacement management agency, naming the Rural Development and Poverty Eradication Office (RDPEO) in its place. This is a recently created agency which is still finding its role. It has emerged as a coordinating body rather than an implementing one. It has no track record as a micro finance system manager. Its staff are apparently young and enthusiastic but have no expertise in credit management and little in fostering rural development.

The field staff of the DSP have scrambled – in this sector as in others - to make up for the NTPC'S withdrawal. They have had less than six months, starting from scratch, to try to build some capacity in RDPEO to assume responsibility for VIRF, running two-week basic level courses for 24 RDPEO staff on how VIRF works and a one-week course for the same



Farmer to farmer livestock specialist and trainer explaining education techniques to POE at his XBF/DSP farm.



POE talking with Minister of Energy and Mines Soulivong Daravong.



POE consulting villagers near Mahaxay.



Successful cultivators of NTFPs (notably rattan) on the XBF.



Gnommalath woman describing activities of their rice production group crop.



Proud father with lively child on the XBF.

staff on computer operations involved in VIRF management. NTPC itself admits that the institutional and overall technical capacity of RDPEO to handle the large task thrown in its lap remains severely limited. The transition period is simply unrealistic.

So what is to be done? The NTPC and the World Bank had proposed four options. All carry a relatively high risk factor in the POE's view and all represent compromises. They are:

- Option 1: to continue VIRF under Khammouane's RDPEO, laying stress on the agency's capacity building, at least until later in 2013 when a reassessment of progress would be made.
- Option 2: to terminate VIRF and permit all HHs to withdraw their share.
- Option 3: to permit HHs to withdraw 80% of their share and continue VIRF with the funds from the remaining 20% of shares.
- Option 4: to maintain VIRF in the villages where it is successful and terminate it where it is not.

GOL favors Option 1 and has now decided firmly to adopt this course of action not least because it would set an unfortunate precedent were the VIRF be seen to fail

On reflection, the POE also supports Option 1. If VIRF shareholders are to have further access to technical assistance, extension advice and low cost loans, then a viable VIRF remains a vital source for them in the endeavor to restore sustainable livelihoods. At the same time the POE is concerned that, since their shares in the VIRF capital come from the compensation due to HHs from the loss of fisheries, HHs should retain and be able to exercise their right to access a proportion of their share if they so wish (although they do not seem to be aware of this, VIRF shareholders have the undoubted right under Article 18 of the VIRF regulations to voluntarily withdraw from the Fund). Option 1, consistent with GOL policy on village funds, would presumably meet IFI reputational concerns and would be consistent with the CA.

The POE accordingly supports:

- **4/20 The GOL decision to adopt Option 1 involving RDPEO assuming responsibility for managing the VIRF from January 2013 and encouraging shareholders to leave their share capital available to the VIRF so that they may be able to continue to**

draw upon the Fund for fostering livelihood and related activities.

For Option 1 to have a chance of working successfully several steps would have to be taken as a matter of urgency, with NTPC needing to redouble its efforts before RDPEO takes over full direction of the VIRF to further train its staff in the techniques of VIRF management. It is proposed that:

- To avoid the reputational risk to the Company of VIRF failing, NTPC needs to find a way, however informal, of continued backstopping of the exercise on the technical level into 2013. Monitoring is too passive a contribution on its own.
- A survey of how households in the five districts have used the VIRF, and amounts used, be carried out in order to have more reliable information on what percent of shares might be withdrawn, and whether or not that percentage would vary between districts.
- The World Bank expand its existing capacity building support for the RDPEO through its extended Khammouane Development Program (KDP) and provide technical support to RDPEO through the same Program.
- At Provincial and District level continuing provision be made for oversight of VIRF at a high level to ensure that the necessary resources for budgetary and trained personnel are made available quickly to RDPEO and to oversee the operation in the testing first months. POE understands that the Khammouane Governor has already convened a senior level meeting to these ends.
- RDPEO itself set up a dedicated Village Fund Management Section and appoint immediately one of its most able staff to head the Section and provide leadership.
- Consideration be given to bringing in an NGO with experience in micro credit work at village level.
- Later in 2013 (now set down for June) there be an assessment of how the VIRF is faring and decisions taken accordingly on the medium term future of the operation.

3.5 In the Field

In the field the NTPC itself and the IFIs have undertaken some most innovative work. The POE visited a number of projects sponsored by one

or another of the agencies. The research on flood tolerant rice is a recognized success; both the Banks provide support for the XBF District Seed Production Center, which is to be upgraded.

We also saw, for example, a most impressive project-sponsored fish fingerling production farm. Covering extensive aquaculture ponds it is a sophisticated operation based on NTPC's "farmers talking to farmers" program. The entrepreneur heading it has trained 850 other farmers from 35 villages in his fingerling raising techniques and is himself producing nearly 1.5m. fingerlings without fully meeting the demand. Another but more modest farmer training operation is run on a small livestock calf producing farm and has run training sessions for 150 farmers on livestock raising using pen feeding techniques.

The POE checked up on a small village in Mahaxai District which we had called on in an earlier mission. Villagers are well off the road and last February were keen to get electricity laid on, the access road upgraded, an improved water supply and a school built. Some progress had been made: EDL has agreed to put in electricity lines at no expense to the village (though supply costs to households seem high). This was one of the 67 impacted villages which had received cash compensation of Kip 700,000 per family (around US\$88).

What had they done with the money? On their own decision with no guidance villagers claimed to have put it largely into livestock – goats, chickens, cattle. They had received some help from NTPC in building and stocking a small concrete tank for raising catfish. There is no school or improved access road and water supply. While we went away reassured that at least some households in one of the 67 villages had not wasted their cash handout, the villagers' fundamental problem of long-term livelihood sustainability remains and ambitions for improved infrastructure beyond electricity connection have not been met as yet.

3.6 NT2 Health Program: The Jewel in the Crown

The above heading is appropriate. The Health Program devised and put into operation by Dr. Surinder Kaul and Dr. Pany Sananikhom has attained icon status and is now being seen as a primary health care model for rural areas for Laos as a whole and perhaps beyond. It has arguably made a greater difference to the quality of life of the NT2 populace than any other facet of the project.

The DSP health statistics, largely matched by statistics from the plateau villages, speak for themselves:

- The child death rate in the Downstream zone between 2009 and 2012 dropped from 120 per thousand to 76 per thousand – in four years.
- Where interventions took place, the prevalence of stunting among children under 5 reduced from 51.2 % in 2009 to 37% in 2012.
- The prevalence of underweight children reduced from 28.7% to 20.2% over the same period.
- The incidence of no intestinal parasitic infections rose from 51.8% to 70.3%.
- No malaria cases were detected during the two surveys due in part to a very high rate of anti-mosquito bed net use.

Though there is still work to be done, especially among the Under-5s, these are stunning figures achieved over a very short time – four years only. Even more stunning is the average cost of providing health services to the villages: the average running cost per year is US\$600. That includes in the case of a small village the salaries of a resident medical assistant and a local trained midwife (but not transport, computer or specialist visits). We have tried constantly to keep costs down, reports Dr. Pany, in order to ensure that the services are sustainable.

The handover of the Health Program to the Ministry of Health has been delayed by restructuring within the Ministry. It takes over this month and strongly supports the NT2 model. Dr. Pany will remain available to the Program through 2013 at least, on a part-time basis. This is a welcome and sensible measure. She should be given the necessary resources and access to enable her to maintain an effective oversight role. LaoLux will be involved in helping assess the feasibility of replicating the model elsewhere in Laos.

It is important in the view of POE that this model system of rural primary health care be carefully recorded, analyzed and the lessons learned so that it may be replicated widely. The initiators of the system will be working on this in the weeks ahead. It is to be hoped that NTPC will see its way clear to providing whatever assistance is required to facilitate this exercise, including having the final document printed for distribution. The company will thereby enhance its reputation and the project as a whole will benefit through international recognition.

The POE recommends:

- **5/20 That NTPC continues to provide backup support to the Health Program initiators and takes a particular interest in the recording and analysis document being prepared to facilitate replication of this model rural primary health system elsewhere and that the Ministry of Health provide the necessary resources and access to enable the part-time consultant (Dr. Pany) to undertake an effective Program oversight role.**

4. THE NAKAI RESETTLEMENT PROCESS, AND NAHAO

4.1 The Handing Over Process

The handing over process on the Nakai Plateau is well under way. That said and commended, the POE has two major concerns. One relates to staffing while the other concerns monitoring. PM Decree 471 requires that Nakai District Staff take over WMPA development obligations for the 32 NPA villages. The necessary agricultural, education and health staff do not exist; indeed Nakai District does not have the permanent staff to implement NRO's current agricultural program or to staff schools and clinics once handing over occurs. The POE, seeing no clear solution to this issue, is very concerned about the implications for meeting CA requirements for improving resettler livelihood by 2015 and for implementing SEMFOP II.

Round 6 (May 2011) of the Nakai Socio Economic Survey is an impressive monitoring document. The POE is concerned, however, that the balance between consumption and income favors consumption too much. The POE questions whether "consumption is generally considered to be a better indicator of household wellbeing than income" nor do we believe that opinion warrants a "one fits all" conclusion. Indeed, the POE questions whether or not it fits development contexts, including large dams, in which early emphasis is placed on significantly improved infrastructure such as roads, schools, clinics, electrification, houses, household furnishings and other purchases and where initial sources of income from construction activities cannot be maintained. In such situations the POE believes not only that equal emphasis be placed on consumption and income, but also that monitoring place more emphasis on maintenance, depreciation and debt.

The POE will seek to help clarify such issues with stakeholders and to reach agreement on other livelihood development indicators during the next six months.

The POE recommends:

- **6/20 That government officials at the central, provincial and district level prioritize discussion on ways in which Nakai District can meet its future budgetary, staff and capacity responsibilities.**

That the next round on the Nakai Socio Economic Survey, and all future monitoring, place equal emphasis on

consumption and income and include data on, for example, infrastructure maintenance, depreciation, household debt and access to a range of stable and legal income sources.

That a special effort be made to delete income from Rosewood and other illegal activities from resettler income and that careful surveying of resettler debt continue.

4.2 Rainfed Agriculture and Irrigation

The NT2 Social Development Plan decreed that agriculture, along with the Village Forest Association's activities, was to provide resettlers with their major source of income. According to the report of Round 6 (May 2011, page 92) of the Nakai Socio Economic Survey only 13 percent of resettler income comes from agriculture and livestock. As for irrigation activities, during the 2011-12 dry season less than 4 per cent of households were using irrigation.

During the POE's November 21 meeting with Khammouane Provincial Governor Khambai, the Governor mentioned a recent meeting with NTPC and the IFIs to discuss a possible project that would provide 0.5 ha to a maximum of 800 Nakai resettler families, all volunteers, to grow two crops annually of irrigated rice on 400 ha to be developed in Gnommalath and Maxahai Districts. Already, the Governor noted, some Nakai resettlers, acquiring use of irrigated land from relatives, come to those two districts to grow rice which they take back to their Nakai villages.

The issuance of the first Village Land Certificates this month is one of several developments that could begin to re-orient agriculture. Village land titling will complement previous home plot and 0.66 ha field titling by subdividing VFA land between the 16 resettlement villages; hence providing resettlers with the security of ownership needed for making long term agricultural investments. One such investment under discussion in the VFA and at the village level, and with increasing district and NRO support, involves agro-pastoral forestry. More villagers are beginning to form cattle producer groups, while Nakai District and NRO experiments are continuing with various Non Timber Forest Products. One villager in Phonsavang has converted indigenous tea into a potential cash crop.

Expanding the scope of work of agricultural extension workers to include community development is another recent development with potential. The POE understands that one village extension / community

development worker has been assigned to each resettlement village and that all have received two to three years of post-secondary school training in fields relevant to agricultural development. The large majority are volunteers but, granted quota restrictions on recruiting more district staff, relying on volunteers may be the only option provided that the best volunteers become DAFO staff whenever the Nakai District Quota is increased.

The current system of supervision of village activities needs to be strengthened. Senior district and NRO staff should spend more time in the field supervising the volunteers. Though the POE has seen no evaluation of the activities of provincial staff who were assigned during 2011 to work in Nakai District, their activities apparently did not emphasize supervising village activities. Another problem, the POE was told, is that only one of the 16 extension workers actually sleeps in a village and in that case the worker has a family there. The other workers apparently either return nightly to Oudomsouk or to the Thalang Cluster office. The logical solution to this problem is to implement a program that encourages, with bursaries and other inducements, the further education of Nakai Plateau children to return to work in their own villages as teachers, nurses, and extension / community development workers. Only on the Nakai plateau or in the NPA will the majority have a comparative advantage over other Lao in the national job market.

The POE recommends:

- **7/20 Because current livelihood programs for resettler households may not meet CA requirements that major development efforts are required in the years ahead. Increased emphasis on agro-pastoral forestry is one such requirement while an increased capacity of Nakai District staff to assist resettlers to meet CA requirements is another. More emphasis on secondary and tertiary education of resettler youth for staffing agricultural programs, schools and health services is also necessary.**

4.3 The Nakai Resettlement Villages Fishery

In its thirteenth report (8 February 2008), the POE recommended “That a Decree of the Prime Minister be drawn up that ... requires implementation and enforcement of the CA requirement that exploitation of the fishery resource, fish processing and fish trading be restricted to resettlers for a period of at least ten years.” Decree No. 24/PM was forthcoming on 13 February 2008 that, among other requirements, stipulated in Article 7 “that the rights of fishing , fish processing and fish trading are reserved for the resettlers for the period of ten years from the date of dam closure.”

Nearly five years have passed since reservoir impoundment began in April 2008. As the POE expected, the resettlers responded quickly to the new opportunity to the extent that fishing the reservoir is currently the number one activity and source of income for the majority, a situation that may continue indefinitely. The POE, after considering a NTPC suggestion that the ten year period of be extended, is convinced that the fishery should remain closed to outsiders for another ten years beyond April 2018. Our reasoning for making such a recommendation is based on several factors.

First, the current fishery is a critical, indeed the most critical, livelihood component for the resettlers. Second, the international experience with fishery development in connection with large dams is that once a fishery becomes an open national resource, outsiders with more fishing experience, capital and marketing access can be expected to dominate the fishery at the expense of the resettlers.

Third, while local progress during the past five years has been good, much remains to be done. Supportive infrastructure such as access roads to the new fish landing areas have yet to be completed. A complex program of fishery co-management involving village fishery groups, the northern, central and southern clusters, and the Reservoir Fishery Association is just getting started. Only in the Northern Cluster has important progress been made with patrolling activities intended to control illegal fishers, illegal entry into special breeding and conservation areas and use of illegal techniques, while responsibilities at the district level, including between DAFO, the Reservoir Management Committee and Secretariat, WMPA and village militia, the police and the military require further clarification and coordination.

Fourth, good information under the present fishing is required on which to base effective long term management of the fishery. There are

reservoirs throughout the world where studies have shown what to expect in terms of fish productivity over time. However, the NT2 reservoir is considered unique because of its geographic location, elevation, shallow depth, and its water management regime with large annual and substantial weekly drawdowns. Therefore information from other reservoirs does not apply to the NT2 and the information needed for effective sustainable management must come from experience with this reservoir. After five years the status of the reservoir fish and fishery is still very much in flux and it is unknown how long it will take for the fishery to stabilize. If outsiders are allowed in they will likely bring a different and more efficient fishing regime that would destabilize the fishery. Consequently very substantial additional time under the present fishing regime is needed in order to gain the information necessary to establish sustainable long-term management of the fishery.

The POE discussed the need for a ten year extension with Deputy Prime Minister Somsavat Lengsavad, the Khammouane Provincial Governor and the Nakai District Governor, all of whom supported such an extension.

The POE recommends:

- **8/20 That the closed nature of the Nakai reservoir fishery as stipulated in Decree number 24/PM be extended for another ten years beyond April 2018.**

4.4 Resettlement Village Forestry Issues

The forestry element of the resettlement plans was to have been a flagship of the operation, providing a substantial and ongoing income for all households from cut timber sales and NTFPs gathered from their reserves, generating many jobs and further earnings for the resettlers as the sector branched out into agro-pastoral forestry and value-added activities like furniture making and, most important, becoming sustainable over the long term by engaging in extensive reforestation and accelerated regeneration as the existing tree stocks were harvested.

To understate, the outcome has been disappointing, not least to the resettlers. It has been a saga of conflicting philosophies and interests, foot dragging by agencies which felt threatened by the new institution, mediocre planning, excessive taxing of what is a compensation exercise for

the resettlers, a lack of dynamism and transparency in management, a consequential loss of trust in the sector among villagers and plundering of the resource by unchecked outside interests and sometimes the resettlers themselves.

The harvesting of the resource has produced three dividends totalling US\$551,000 or an average of US\$460 for a resettled household of five people. A fourth dividend is being considered. The number of resettler jobs to be created in the forestry sector forecast in the Resettlement Action Plan (planned to bring in an annual return to the resettlers of about US\$240,000 and to be one of the two substantial elements in the new livelihood incomes) did not materialize to any significant degree. The VFA did help the project at a crucial time when suitable timber supplies were limited in the area by providing sawn hardwood timber for many of the resettlement houses. It ventured in a small way into both furniture making and handicrafts and its nursery supplied 135,000 seedlings and saplings when the rehabilitation of project lands and construction sites was underway. These were useful contributions in themselves but fell short of expectations – and the new ventures into agro-pastoral forestry and reforestation originally planned never got off the ground.

It is ironic that at a time when the VFA has secured for the first time assurances regarding an ongoing harvesting quota of 6,000 cubic meters a year and is poised, as a limited liability company, to go on milling at this rate there are now serious doubts about the volume and quality of the remaining resource of accessible and millable timber. No reliable up-to-date data on the size of the remaining resource are apparently available. This should be remedied quickly – and authoritatively, through an independent agency – for there has from the beginning been uncertainty about the actual volume and quality of the wood available, a situation made worse by the plundering of the resource by outsiders and resettlers over the last several years.

The POE recommends:

- **9/20 That an immediate reassessment of the volume and quality of the remaining VFA forest resource, perhaps utilizing high resolution satellite imagery with ground-proofing as well as suggested by the World Bank, be authorized by the VFA Board and undertaken urgently by an independent agency as a basis for redirecting the VFA's operations.**

Final decisions on the way forward should not be taken until the reassessment results are known. There seems little doubt, however, that were the quota for this year (swollen to 9,000 cubic meters by a carryover from the last cutting year) to be harvested in full this Dry Season there would not be sufficient timber remaining to enable the annual quota of 6,000 m³ to be attained in following years. The VFA management has forecast that if current cutting rates are maintained the prospect is that by mid-2015 the resource of millable timber would be close to exhaustion.

This is a crisis situation. If VFA management's forecasts are accurate and if harvesting were to be maintained at the rate envisaged in the new but unsigned contract with the existing buyer, the total cut envisaged for the next three years would not be able to be met. All dividends would cease as from 2015. There would be no revenues to enable a start to be made on agro-pastoral forestry and value-added activities or reforestation and accelerated regeneration. This would inter alia severely dent the prospect of resettler households achieving through legitimate means the income targets set out in the Concession Agreement.

4.5 Solutions?

On the assumption that management's meager resource forecasts are confirmed, there seem to be two options:

- go ahead with the as yet unsigned contract and run the millable resource down to virtual extinction with no more dividends and few forest-related activities after 2015, or
- do not sign the contract but reduce the cut to say 2,000 m³ a year and either sell the wood to the existing buyer without a contract or sell it on the local market (there are now no other timber mills on the Plateau), paying only a minimal dividend to the resettlers in the short term and using the bulk of the revenue to fund agro-pastoral forestry, value-added and restoration / regeneration activities with the objective of achieving a degree of sustainability.

Where lies the advantage to the resettlers? It seems to the POE that there is little choice but to go for the second option or a variation on it. It will cut dividends heavily in the short term but will string out the resource so that there will still be some revenue in the years ahead to get other forest activities, some of them being revenue earners themselves in the medium term, under way. The VFA's own mill could process a cut of 2,000cu.m.

and vigorous promotion and marketing should succeed in selling the cut timber locally – or through the existing buyer.

Some fast rethinking is called for by the new VFA Board. They should not simply await the results of the reassessment of the volume and quality of the resource but begin planning and provisional decision-making now. It is clear that a new set of skills will be called for at senior management level in the VFA, for example. The present manager has had to find his way through a morass of conflicting interests and cannot be held solely accountable for the slow progress thus far. But what is needed now is a vigorous manager with experience in livelihood and community development, agro-pastoral forestry and preferably marketing as well, who can get alongside the villagers and convince them, for example, of the advantages in using the new strips set aside in the PLUP process for agro-pastoral forestry activities and the long term security to be attained by growing tree crops on or reforesting their worked over land, perhaps including some of the less fertile parts of the 0.66 ha. and irrigated plots. The appointee would need to be able to work closely with DAFO/PAFO and have access to their advice and experience.

The POE recommends:

- **10/20 That the VFA Board and Village Forestry Committees be briefed urgently on the uncertainties surrounding the wood resource situation, its implications and the options before them as a preparation for early redirection decisions.**

That a search begin now for a new VFA manager with the skills, vigor and leadership qualities required to steer the VFA through a new phase in its evolution.

That in the interim no new timber purchasing contract be signed.

That in order to keep their options for the future open the Board defer until the results of the wood assessment are known a decision on paying a further dividend to resettler shareholders from current revenues and suspend all current logging immediately.

4.6 Fees and Taxes

While it was always envisaged in the NT2 Social Development Plan that conventional Government log taxes and some other charges would be payable from VFA revenue it was not expected that the full raft of fees, taxes, charges and expenses payable by a frankly commercial forest company would be faced by VFA. No provision was made in the SDP, for example, for the payment of the GOL reforestation levy as it was planned that the VFA itself would be meeting the costs of forest rehabilitation and regeneration. But the reforestation levy in all its forms (surveys, forest plantation, reforestation and forest management activities) is charged to VFA by the provincial forest agency when, as far as the POE could determine, few of these services have been provided to VFA by the agency.

The system is highly opaque. In perusing Audit documents POE came across references to a VAT charge of 10% (apparently on all transactions, not just on sale of processed timber from the contractor's factory to buyers), a profit tax (though, as the SDP points out, the VFA was seen as a non-profit organization), a tax on removal of logs, a tax on transportation of logs – all in addition to the GOL logging and other fees. The end result is that in 2011, for example, when \$200,000 was paid out as dividends to resettlers, a total of \$240,000 was paid out in logging fees and an additional \$371,500 in other taxes and fees. In short, of the revenues from the VFA resource last year the Government took three quarters and the resettlers received one quarter.

That is inequitable. As the SDP points out, the transfer of the forests was designed as a compensatory exercise for people resettled from their traditional lands in the interests of a national project. They were moved to less fertile soils where entirely new and more labor intensive forms of cultivation had to be learned. The plan was to provide villagers through forestry activities with a sustainable and guaranteed source of income. Taxation concessions were expected. None were forthcoming. Partly as a consequence there have been few resources available to engage in the activities planned to ensure sustainability like agroforestry and reforestation.

Unless there is some respite from the burden of fees and taxation, thus freeing up funds for sustainable activities, the prospect is that the contribution of the forestry sector both to resettler incomes and Government revenue streams will dry up in the years ahead. It is in the interest of all stakeholders to avoid this outcome.

The POE recommends:

- **11/20 That the new VFA Board take up with the GOL at a high level the matter of the excessive number and scale of fees, levies, charges and taxes being paid by VFA on the basis that this is not a conventional commercial venture but a form of compensation to villagers moved out of their traditional lands in the interests of making way for a project of national significance, all of which should be recognized in the tax structure and levels.**

That with the objective of agreeing on a sensible and equitable regime for benefit sharing from VFA's timber production, and having regard to the restricted resource remaining, consideration be given, for example, to removing the anomalous reforestation and quota fees, retaining the VAT but imposing it only on sales revenues and, in recognition of the compensatory intent of the resettlement exercise, reducing the logging and other fee payments required of purely commercial wood harvest enterprises.

Whether the above recommendations might involve a reconsideration of VFA's only recently acquired status as a limited liability company remains a matter for speculation as far as the POE is concerned. If the new status means that the VFA has to pay at full commercial rates, plus whatever additional costs are not recorded in Audit reports, it would seem unlikely that the apparently slender VFA timber resource would last more than two or three more years – and the resettlers would be the losers.

4.7 The Nahao Consolidated Village

Nahao illustrates the negative impacts that involuntary community resettlement, as a village consolidation policy, can have on swidden cultivators and foragers. The POE first visited the Nahao complex on a rainy day in July 1997 when a helicopter took us to Thamuang village on the opposite bank of the Nam Xot from Songkhone and Nahao villages. The poorest Thamuang inhabitants were a number of Vietic families who had been involuntarily relocated there from their spirit territories in the upper Nam Xot basin. While their consolidation in Thamuang supposedly was for development purposes, we were told that, having received no arable land, not only had they become hired labor for non-Vietic villagers but that mortality rates, especially among the elderly, had increased. Indeed

the death rates among the elderly were so high that valuable indigenous knowledge had been lost.

During another visit to the Nahao cluster in April 2009, the POE found that the downstream village of Songkhone had been involuntarily consolidated with Nahao village earlier that year contrary to GOL – IFI agreements. Unexpected flooding of Songkhone fields by the Nakai reservoir had been one justification for shifting the village upstream.

Recognizing that loss of gardens and fields was a project cost, NTPC subsequently agreed to fund and supervise a relatively expensive (in money and staff) mitigation/intervention program which was completed during the third quarter in 2012 and handed over to the WMPA “to continue interventions and support development activities” (3rd E & S quarterly report July-September 2012).

The mitigation / intervention program was implemented by Eco-Lao during two inadequately monitored contracts, with WMPA approving the final Eco-Lao report in November 2012. Taken together, the 2010 and 2011 contracts had two goals. One was to produce a “sustainable future land-use zonation map of the Nahao Village Cluster” while the other was to make recommendations for changing the existing livelihood system to “intensive sedentary agricultural cultivation, orcharding and animal husbandry.”

The POE traveled to the Nahao cluster to assess results of the Eco-Lao program during a two day period in November 2012. Our hope was that the resulting recommendations might have broader relevance for other NPA villages including those recently, and again contrary to GOL-IFI agreements in the case of at least one village, consolidated around Navong. Unfortunately, the results of Eco-Lao and GOL joint activities neither terminate NTPC responsibilities nor do they provide a model for other NPA villages. This is because they do not mitigate NT2 project costs to the most affected village (Songkhone) nor were efforts initiated to show in the new fields how productivity could be intensified.

120 hectares of gardens and fields were adversely affected when the reservoir filled. This should have been anticipated by NTPC before the reservoir began to fill in 2008. While careful hydrological surveying was completed on the Oudomsoek side of the reservoir where two saddle dams were built, such surveys apparently were not replicated along the NPA side. Two adverse effects followed that had serious negative impacts on affected villagers.



Pounding rice in Nahao.



New WMPA Director Phouthone Sophatilath with poachers' confiscated boat engines, snares, rosewood etc.



Poor yielding new fields at Songkhone and former swidden in background which farmers will have to revert to if current yields in new fields do not improve significantly.



Nahao fisherman with the product of his skills.



POE and NTPC's Xavier Bouan taking part in a bacci ceremony at Nahao.



Newly installed electricity lines and temporarily unoccupied Phonesack buildings up the Nakadok valley adjacent to the NPA.

The first and most serious impact was to underestimate flood risks associated with the backwater effect of the coffer dam on low lying villages and village fields close to the Nam Theun. During 2005, for example, “a significant number of households lost crops to flooding ... on five to ten occasions between August and October” (POE Ninth Report: February 16, 2006). Once recognized, such risks led to a rushed physical relocation of affected villages in temporary housing so as not to delay the planned filling of the reservoir in 2008.

The second adverse impact affected the Nahao cluster in 2008. While households in each of the three villages lost some river side gardens, loss of swidden fields was restricted to Songkhone where the POE was told that all but three of the 48 households lost their fields. The Eco-Lao program did not mitigate that loss when a decision was made to allocate one hectare of surveyed and fenced land to every household in the three villages. The POE suspects that decision would not have occurred if Songkhone had not been the weakest of the three villages and if those villages had not been consolidated. After the POE arrived, the first meeting, organized at the cluster level, illustrated Songkhone’s weakness. Of the 11 men present, the majority were from Nahao. Only one was from Songkhone.

Further away from the Nam Xot, on higher slopes, much of the 120 ha of Songkhone replacement land was not as fertile as the land lost. While some of the new land near the river was flat and fertile, most was hilly and of varying fertility. Total nitrogen in soil sampled from the 120 ha varied from 0.39 percent to 0.01 percent, while organic matter varied from 6.24 percent to 0.79 percent.

At a POE meeting with Songkhone men, they estimated that about a third of the new land received was of good quality. That estimate did not seem unreasonable when the POE subsequently walked through the main area of Songkhone fields. Yields in the flat low lands during the 2012 wet season were estimated as being as high as 2 tons per hectare. In adjacent lower portion of higher, less fertile land, the landowner with us harvested only four to five 30-35 kg bags of rice while in the uppermost portion his loss was 100%. When we asked him what he planned to do during the next rainy season, he replied that he hoped finally to receive technical advice on how to get higher yields on the new lands. And if such advice was not forthcoming or not able to increase yields, what did he plan to do? Pointing to the protective forest higher up the hillside he replied that he, as with 15 other households in the same predicament (one-third of Songkhone

households), would have no option but to return to swidden cultivation of forested land.

There is another option which NTPC mentioned in its 12 June 2009 memo on “Nahao Village, Nam Xot River.” In Section 6, Future Milestones 12 and 14 dealt with drawdown agriculture implementation including seed provision and harvest between January and May/June 2010 with a second year mentioned for 2011 in milestones 16 and 17. That option, along with the possibility of combining it with a gully dam, received no further mention in Nahao documentation available to the POE. It should be considered since the POE noted a significant area that would be amenable to drawdown cultivation and to irrigation.

The POE recommends:

- **12/20 That NTPC take responsibility for a development program that will mitigate the adverse impacts of the reservoir on the agricultural economy of that large majority of Songkhone households whose fields have been flooded by the reservoir. Such a program will require, among other activities, (1) comparison of land and rice yields lost with yields from land received; (2) finding, surveying, clearing, and fencing additional land to replace yields lost; and, especially important, (3) recruiting and financing an expert with the relevant skills to work with Songkhone villagers until a land use system, also intended to benefit the other two villages, has been developed that will replicate yields lost.**

That further consideration be given to drawdown agriculture and gully dam irrigation.

The POE is encouraged in this regard to learn that NTPC is “open to discuss with the District and WMPA a support approach to the Nahao cluster in which NTPC continues to play a limited role towards a sustainable and equitable development of the Nahao cluster which does not undermine WMPA’s responsibility defined in the CA and the SEMFOPs”

5. THE WATERSHED AND THE WMPA

From the start the management of the watershed for the linked objectives of conservation and development has been a key part of the NT2 project. Since this was a new activity for GOL, WMPA was created to accomplish it. For a variety of reasons WMPA has not been particularly successful in the past, most especially in terms of conservation of biodiversity. Part of the problem was that WMPA was seen by some in GOL as a regular GOL agency subject to regular GOL policies. However, while WMPA is a GOL body, it is subject to the CA and other agreements. Some GOL policies, like the consolidation of villages, are intended to be specifically precluded by these agreements.

So the challenges to WMPA now are two fold: (1) Overcome past failures and be successful, especially in biodiversity conservation; and (2) meet the hand-over requirements of the PM Decree 471. As we detailed in Report #19, this Decree presents a major challenge to WMPA to restructure itself and to provide leadership, coordination and training, and to DAFO and the other local authorities to provide good people. It appears that at present DAFO and the other authorities do not have the staff and capacities to handle this handover.

The POE recommends:

- **13/20 That as a priority, GOL ensures that DAFO and the other local authorities are provided with adequate staff and capacities to handle the handover of watershed responsibilities required by PM Decree 471. We have suggested in an earlier recommendation above that this sort of assurance may well require intervention at the highest Provincial level to be achieved.**

5.1 The Challenge of Biodiversity Conservation

The national and global importance of the Nakai-Nam Theun National Protected Area (NPA) have been described and emphasized in previous reports by the POE, as have the very serious threats to its biological diversity. In the northwest the threats are from the Hmong ethnic group who live in the peripheral impact zone (PIZ), plus other poachers and traders who come from Khamkeut District. On the reservoir side a major threat comes from Lao from the resettlement villages who simply cross the reservoir in their fishing boats and enter the NPA. All

and judicial procedures, allowing WMPA patrols to be armed, giving WMPA authority to patrol along the roads in all five districts, and assigning WMPA to receive a high percent of the proceeds when government sells Rosewood and equipment that WMPA has confiscated from violators and apply it to relevant staff and individuals as incentives. At least some of the recommendations and agreements from the meeting require approval by the WMPA Board. These agreements meet a number of POE's past recommendations and their implementation should greatly improve WMPA's law enforcement potential. The Panel considers that the meeting and its follow up can be an extremely positive development.

The POE recommends:

- **15/20 That the recommendations and agreements from the December 20 WMPA meeting on law enforcement be approved and implemented without delay.**

5.4 Provide Incentives for Success by Linking Payment with Results

As we emphasized in our last report, we believe that one important solution to low performance is to provide pay, or incentive funding, for achieving results – as opposed to merely providing a budget on the basis of a plan, regardless of whether or not it is implemented. On this visit we discussed the principles and practice of providing pay for outcomes – not output – and developing indicators to judge whether or not the outcomes have been accomplished. Clear accountability is required. This was also discussed in our last report, #19. While the leadership of WMPA is in agreement with this approach, it has not yet been implemented and although it is mentioned, its implementation is not included in the Annual Work Plan and Budget for 2012-2013.

The POE recommends:

- **16 /20 That without delay, the WMPA develop and implement a funding procedure that is based at least in part on verifiable conservation outcomes achieved.**

5. THE WATERSHED AND THE WMPA

From the start the management of the watershed for the linked objectives of conservation and development has been a key part of the NT2 project. Since this was a new activity for GOL, WMPA was created to accomplish it. For a variety of reasons WMPA has not been particularly successful in the past, most especially in terms of conservation of biodiversity. Part of the problem was that WMPA was seen by some in GOL as a regular GOL agency subject to regular GOL policies. However, while WMPA is a GOL body, it is subject to the CA and other agreements. Some GOL policies, like the consolidation of villages, are intended to be specifically precluded by these agreements.

So the challenges to WMPA now are two fold: (1) Overcome past failures and be successful, especially in biodiversity conservation; and (2) meet the hand-over requirements of the PM Decree 471. As we detailed in Report #19, this Decree presents a major challenge to WMPA to restructure itself and to provide leadership, coordination and training, and to DAFO and the other local authorities to provide good people. It appears that at present DAFO and the other authorities do not have the staff and capacities to handle this handover.

The POE recommends:

- **13/20 That as a priority, GOL ensures that DAFO and the other local authorities are provided with adequate staff and capacities to handle the handover of watershed responsibilities required by PM Decree 471. We have suggested in an earlier recommendation above that this sort of assurance may well require intervention at the highest Provincial level to be achieved.**

5.1 The Challenge of Biodiversity Conservation

The national and global importance of the Nakai-Nam Theun National Protected Area (NPA) have been described and emphasized in previous reports by the POE, as have the very serious threats to its biological diversity. In the northwest the threats are from the Hmong ethnic group who live in the peripheral impact zone (PIZ), plus other poachers and traders who come from Khamkeut District. On the reservoir side a major threat comes from Lao from the resettlement villages who simply cross the reservoir in their fishing boats and enter the NPA. All

along the eastern border with Vietnam a major threat is Vietnamese poachers. In each case there appear to be at least some of the Lao in the enclave villages who cooperate with the poachers, and who do considerable poaching themselves.

The poaching, or illegal removal of biodiversity products from the NPA, involves both plants and animals. Fifteen to twenty years ago Eaglewood trees were so heavily poached, even to digging up the root systems, that that species is virtually extinct in the NPA. More recently Rosewood has been a staple of the illegal trade. Facilitated by the improved track system constructed by the WMPA, Rosewood trade is probably the basis of the evident newfound wealth of most enclave villages and it apparently has significantly augmented the incomes of the resettlers on the Nakai Plateau. Rosewood is now so rare that the trade is shifting to somewhat less valuable red woods.

While the tree poaching is very serious, the poaching for animals has caused an even more significant degradation of the NPA's biodiversity. Some birds and mammals are shot but the greatest losses come from wire snares. The poachers, especially those from Vietnam, enter the NPA and establish camps for varying periods and lay out hundreds of snares. When they return home they often – or usually – leave the snare lines in place. The poachers may or may not return to them when they reenter the NPA, but the snare lines remain. The result is that they kill birds and animals for years. Depending on the size of the wire and the trap setting, the snares kill everything from birds to large mammals. The paucity of large, terrestrial mammals that has been shown by all recent research and surveys testifies to the effectiveness of the poaching. There is real danger that much of the NPA will become an “empty forest” without wildlife under the trees that remain.

As previous POE reports have emphasized, the past law enforcement efforts of the WMPA were “virtually wholly ineffective,” and the WMPA needs to totally revise its law enforcement activities. Consequently the Panel was very pleased to see that a number of changes have been or are being made. The new Director has made many changes in staff and intends to make more. He has restructured the organization with the law enforcement division reporting directly to the Director, and has appointed the most highly qualified individual on his staff as head of law enforcement. This is most encouraging since the success of any organization is dependent upon having really good people, especially in key positions. It remains to be seen how the new structure and staff work out, but these changes appear very positive.

Although the conservation situation in the watershed is very poor and much remains to be done (e.g. the MIST system to facilitate and monitor patrolling remains to be implemented on the ground), the Panel is cautiously encouraged by the changes in leadership and staff, and by the apparent changes in attitude of the leadership and its willingness to try new approaches.

5.2 Biodiversity Protection Technical Advisor

As recommended by POE (#13/19) an externally-funded Biodiversity Protection Technical Advisor was engaged by WMPA. The Panel is very impressed with his work to date, but there is much more to do. With the windfall funds that WMPA was provided recently by NTPC the WMPA now has more than adequate funding to hire the advisor.

The POE recommends:

- **14/20 That the WMPA hire the Biodiversity Protection Technical Advisor either on regular staff or as a multi-year Advisor.**

5.3 Agreements on Law Enforcement Measures

WMPA held a meeting on November 20th on law enforcement issues in the NPA, pursuant to a WMPA Board of Directors' Decision of 20 November, 2012. The meeting was chaired by Uday Soudaphone, Vice Chair of the WMPA Board, and there were 54 participants from the five districts and two provinces involved, including governors and representatives of the relevant sectors. There was agreement that the illegal activities are increasing. There was clear agreement that law enforcement must be improved, and that if the present illegal activities, especially involving timber and wildlife including fish, continue it will have very significant negative consequences on the national and international values of the NPA, implementation of the Concession Agreement, and the commitment between GOL and international organizations.

The meeting produced 12 significant agreements and recommendations to accomplish that objective. They included, among others, significantly revising the check point locations and procedures, banning chain saws from the NPA and Corridors, tightening up the arrest

and judicial procedures, allowing WMPA patrols to be armed, giving WMPA authority to patrol along the roads in all five districts, and assigning WMPA to receive a high percent of the proceeds when government sells Rosewood and equipment that WMPA has confiscated from violators and apply it to relevant staff and individuals as incentives. At least some of the recommendations and agreements from the meeting require approval by the WMPA Board. These agreements meet a number of POE's past recommendations and their implementation should greatly improve WMPA's law enforcement potential. The Panel considers that the meeting and its follow up can be an extremely positive development.

The POE recommends:

- **15/20 That the recommendations and agreements from the December 20 WMPA meeting on law enforcement be approved and implemented without delay.**

5.4 Provide Incentives for Success by Linking Payment with Results

As we emphasized in our last report, we believe that one important solution to low performance is to provide pay, or incentive funding, for achieving results – as opposed to merely providing a budget on the basis of a plan, regardless of whether or not it is implemented. On this visit we discussed the principles and practice of providing pay for outcomes – not output – and developing indicators to judge whether or not the outcomes have been accomplished. Clear accountability is required. This was also discussed in our last report, #19. While the leadership of WMPA is in agreement with this approach, it has not yet been implemented and although it is mentioned, its implementation is not included in the Annual Work Plan and Budget for 2012-2013.

The POE recommends:

- **16 /20 That without delay, the WMPA develop and implement a funding procedure that is based at least in part on verifiable conservation outcomes achieved.**



Lonely rooster at the largely dismantled Phonesack sawmill on the Nakai Plateau.



Deprived of offcuts from the mill a charcoal maker struggles on by using whatever wood she can find elsewhere along the roads.



Industrial-level charcoal making is still practiced on the Nakai Plateau by outsiders.



A family chugs up the Nam Xot which is lined with trees killed by the reservoir.



The bare earth on the right marks a new plug in the earth dam of an artificial wetland blown open by poachers seeking fish and perhaps turtles.



Stationary WMPA checkpoints like this one on the Nam Xot have proved largely ineffective in intercepting poachers accessing timber and wildlife in the NPA.

5.5 Remaining Issues with Phonesack Activities

5.5.1 The Phonesack Lumber Mill on the Nakai Plateau

On November 28 the Panel visited the Phonesack lumber mill site. The milling operation finally has been stopped and most of the equipment has been moved out, although the large buildings still remain. It is not clear to the Panel whether or not the mill is truly permanently shut down. As long as the buildings remain it would be a simple matter for Phonesack to bring the milling equipment back. Apparently the site is still involved with illegal Rosewood. In a corner of the building there was a pile of Rosewood logs, ranging from around 15 to 30 cm. in diameter and cut the length of a pickup truck bed.

The POE recommends:

- **17/20 That the buildings of the Phonesack lumber mill on the Nakai Plateau be removed, and in any event, that the site be monitored .**

5.5.2 The Nakadok Mining Site

In 2010 Phonesack had started extensive mining prospecting activities up a valley above the Nakadok village within the NPA. This activity was halted following the POE's report #16 of that year; the exploratory mining within the NPA was stopped and the extensive facilities (barracks, offices and equipment sheds/buildings) were shut down leaving a few guards. Reportedly no further commercial activities had been undertaken there. However, while the POE studies a large volume of reports and other documentation relating to the NT2, it insists on seeing conditions with its own eyes. Consequently on November 28 the Panel visited the area to assess the current situation.

There is substantial artisanal mining in the valley bottom with miners from two local villages. Families have pooled their resources to buy diesel generated pumps to facilitate mining and the Panel counted over 20 such pumps in action. Mining the POE observed is outside the NPA borders and artisanal mining activity has been allowed. However, it appears that the "artisanal" mining is becoming mechanized. We also saw two villagers with guns. One was walking out of the area carrying a village-made rifle and the other riding into the area on a motor cycle carrying what looked like a small bore commercially made rifle.

There appears to be no further commercial mining activity within the NPA borders. The buildings constructed in the valley by Phonesack remain with apparently the same small guard force. However, there are now electric lines that have been constructed from the main valley beyond Nakadok to the buildings. We were told they were installed several months before our visit. In addition, nearby there has been substantial earthmoving, reportedly to create settling pools for the mining process. So while there is no commercial activity within or immediately adjacent to the NPA right now, it appears that the stage is being set for such mining to resume as soon as the opportunity arises.

The Panel understands that staff from the WMPA based in Lak Sao monitor the Nakadok area. This should be continued and any new activity should be reported immediately.

5.6 New Cross-border Activities

The Panel has been informed of a new, reportedly U.S.\$50 million lumber mill that Phonesack has constructed near the Vietnam Coast east of the NT2. This mill will require a large volume of logs, and of course there is speculation that some will come from Laos, in spite of the Lao law which prohibits export of raw logs.

In February of this year members of the Panel observed at least three roads that extend from inside Vietnam westward to the border of the NPA. On this present visit we were informed of a road that is being constructed along the border, just inside of Vietnam. It starts north of the Route 8 crossing from Laos into Vietnam. Though probably not built for this purpose the fact remains that this road will provide easy motorized access from Vietnam to the edge of the NPA. It clearly represents a potential major threat to the NPA's biodiversity. There needs to be some effective way to monitor what is happening along that border. While WMPA patrols with, hopefully, cooperation from the army, offer one essential approach, satellite photos may provide another. Periodic review of such photos by a skilled photo interpreter (such as the World Bank obtained for the 2000 illegal logging survey of the reservoir area and NPA) would provide early warning of illegal logging and road use on the Lao side of the border.

The POE recommends:

- **18 /20 That WMPA monitor the eastern section of the NBA up to the border with Vietnam using satellite images interpreted by a skilled satellite photo interpreter. This should be done a minimum of twice a year and preferably more, to detect incursions in the form of roads, trails or logging.**