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**LAO PEOPLE'S DEMOCRATIC REPUBLIC**

**NAM THEUN 2 HYDRO PROJECT**

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

  
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**Ministry of Industry and Handicraft  
Vientiane, Lao PDR  
July 26, 1997**



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**INTRODUCTION**

**The Panel and Its Role**

This is the second report of the International Panel of Environmental and Social Experts (POE or the Panel)<sup>1</sup> for the Nam Theun 2 (NT2) Project in the Lao People's Democratic Republic.

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<sup>1</sup> The Members of the Panel of Experts are

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As discussed in the Panel's first report, the Panel's Terms of Reference cite its primary responsibility as "to provide independent review of and guidance on the treatment of environmental and social issues associated with a project under preparation," and the POE's findings and recommendations are to be submitted directly to the Ministry of Industry and Handicraft and to the World Bank. The Panel is free to make its own determination on which environmental and social issues it should focus. In the Nam Theun 2 (NT2) case, the POE interprets its purview to include the entire Nam Theun River basin from the border of Vietnam to the Mekong River, the Nakai-Nam Theun National Biodiversity Conservation Area (NNT-NBCA) which is a portion of the NT2 project catchment area, proposed extensions to the NBCA, interbasin transfers from the Nam Theun to the Xe Bangfai and Nam Hinboun rivers, the NT2 transmission line, and whatever enhancement and other projects are impacted upon by water releases from the Nam Theun reservoir. The Panel is also obligated to assess the extent to which planning for the NT2 project meets World Bank environmental, indigenous people, resettlement with development and other guidelines.

### **Summary of Panel Activities and Organization of this Report**

Panel members Talbot and Whitmore arrived in Vientiane on July 19 and 20 respectively. Following meetings, briefings, and review of documentation in Vientiane they proceeded with Dr. Robert Goodland of the World Bank and Mr Vorodeth of NTEC to Pakse for two days of visits to the Xe Set, Houay Ho, and Xe Pian, Xe Namnoy, and Houay Makchan hydroelectric projects. Dr. Scudder arrived in Vientiane the 22nd and the panel spent the remainder of the visit in meetings, consultations and review of reference information in Vientiane, and in preparing this report and briefing GOL officials.

This is the second of a projected series of visits to Laos by the Panel under its Terms of Reference. As agreed with the representatives of the GOL and World Bank on the initial meeting of the panel, this was a very brief visit timed to coincide with the completion of many of the preliminary studies<sup>2</sup>. The primary objective was to hold consultations with those involved on key points arising from these reports and from the new information and insights which they provide.

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<sup>2</sup> The Panel has carefully reviewed the NT2 Project-related documents which have been completed in draft or final form since our first visit, including but not limited to the *Environmental and Social Action Plan for Nakai-Nam Theun Catchment and Corridor Areas: Management Strategy, Resettlement Action Plan, Environmental Assessment and Management Plan, Study of Alternatives, Social Action Plan, Socio-Economic Technical Report, Report of the Botanist - Plant Ecologist, Saola Conservation Action Plan, Report of the Wildlife Survey, Development of Stakeholder Relationships, Reservoir Sedimentation Risk Analysis, NTEC Position Statement on Comments Received on the EAMP, and Distribution of the fishes previously considered endemic to the Nam Theun and Xe Bangfai basins.*



A secondary objective was to visit other hydro projects in Lao PDR to provide the Panel with additional perspective on its work with the NT2 Project.

Because the decision is imminent on whether or not to implement Nam Theun 2 as a GOL-World Bank-Private Sector project, the Panel felt that this report would be most useful if focused only on a limited number of issues which bear on the suitability of the project for implementation. The Panel's first report (February, 1997) should be consulted for a more comprehensive overview and description of the Nam Theun 2 Project and broader perspective on the environmental and social issues involved.

### **Acknowledgments - Appreciation**

The Panel's activities are summarized above. The Panel met with Government officials, project staff, and representatives of private sector firms and nongovernmental organizations (NGOs). We wish to acknowledge with gratitude the information, advice and assistance, as well as the warm welcome that we received from everyone to whom we talked. Special thanks are due to the Minister of the Ministry of Industry and Handicraft, the Nam Theun 2 GOL Representative, the President, Vice President and Director of Environmental Assessment of STENO, the Chairman of BPKP, and to those in the World Bank, NTEC and IUCN who gave us the benefit of their knowledge and insights.

### **1. POE Endorsement of the Project with World Bank Participation**

For the reasons laid out in Section 2 below, and with some provisions and considerations, including but not limited to those listed in Section 3 below, the Panel places on record its considered and unanimous opinion that the Nam Theun 2 Project should be undertaken with the participation of the World Bank. We recognize that many details still have to be worked out and that the development of management and action plans for environmental and social aspects of the project are still in an evolving stage. However, we support in general the *Management Strategy* prepared by the IUCN and the *Resettlement Action Plan* prepared by NTEC, recognizing that the versions of both documents which we have seen are still in draft form. We endorse the concept of the Nakai Nam Theun Conservation Area (NNT Conservation Area) as presented in the IUCN *Management Strategy* which includes the proposed extensions to NNT-NBCA, and our comments below refer to this enlarged area.

In particular, as we emphasized in our first report, we believe that sustainable management of the NNT-NBCA for the conservation of its unique biodiversity, maintenance of its watershed values, and equitable treatment of the people at present resident within it, is crucial to the success of the NT2 project as a whole, and represents the most difficult and problematical aspect of the whole project. These three objectives are intimately and inextricably linked.





## 2. Rationale for POE Endorsement of World Bank Participation in the Project.

The Panel shares the concern of environmentalists, human rights advocates and development agencies about the extent to which the adverse effects of innumerable large dam projects have impoverished project-affected people and degraded environments. We are also well aware that the complexity of such projects not only creates uncertainty but also leads to an underestimation of future disadvantages. In the case of the NT2 project, however, three considerations have influenced the POE to take a strong proactive stance in favor of World Bank involvement in the various construction and development activities. The first concerns the current state of both environment and inhabitants on the Nakai Plateau and within the NNT Conservation Area. The second is the clearly demonstrated commitment of the private sector consortium not just to follow World Bank guidelines relating to environmental and resettlement issues, but to improve upon them -- combined with the fact that the private sector consortium's participation in this project is dependent upon that of the World Bank. Our third concern is the commitment of the LAO PDR to develop its hydropower potential with or without World Bank assistance, and the probable future losses to the people and environment of the area if the NT2 Project is not undertaken with World Bank participation. These three points are briefly presented in the following paragraphs:

Deteriorating Environment and Human Living Standards: The Panel is particularly concerned with the significantly deteriorating living standard of the inhabitants of both the Nakai Plateau and the NNT Conservation Area, and the deteriorating quality of their environment and the biodiversity of the area as a whole. Numbering approximately 10,000, all project-affected people in the two areas are classified as indigenous. On the Nakai Plateau their current living standards are estimated to be some 50 percent below Lao PDR's poverty datum line. While living standards of the approximately 5,000 inholders within the NBCA are somewhat better, not only do they have no access to medical facilities but they have also become increasingly dependent on food relief due to crop failure in recent years. Their problems are compounded by an annual population growth rate of over three percent providing a population doubling time of under twenty years.

While exceptional flooding during the 1996 season was one of the recent factors in the villagers' food deficits, more alarming have been plagues of insects and rodents that appear to be correlated with a decrease in their natural predators apparently caused by intensive hunting. In both the plateau and the NNT NBCA the intensive hunting of villagers, along with that of the Hmong and Vietnamese intruders, has dramatically reduced wildlife. For example, one can travel on the plateau throughout a day without hearing a single bird. Other natural products are also under extreme pressure.

Furthermore, if present trends continue, it is probable that four indigenous cultures will become extinct by early in the next century. In the NNT NBCA these are the Atel, the Themarou and the Mlengbrou; on the Nakai Plateau they are the Ahoe. While the relatively small numbers of



people involved puts each culture at risk, the Panel believes that their chances for survival with the project are better than without it. That is due not just to the "state of the art" nature of the various project-associated management plans but also to a much wider range of economic opportunities that their implementation will provide and to the option that members of all four cultures will have to leave previously consolidated villages to return to their old habitat and life style if they so wish.

The Commitment of the Consortium: Not only is the NT2 consortium (NTEC) committed in writing to improving living standards, rather than merely restoring them as required by the World Bank, but it has taken the initiative in facilitating the drafting of a national resettlement policy for development projects. At the same time the consortium has agreed to make available one million dollars annually for a thirty year period to protect the NBCA.

The Dam Will Be Built Regardless of the World Bank's Participation: Land-locked Lao PDR has two major resources where export demand is high enough to generate the revenue needed for raising living standards in one of the world's poorest countries. One is lumber from its tropical forests. This resource currently is estimated to provide approximately 40 percent of foreign exchange for Laos. The resource, however, is limited, present use is not sustainable, and the forests are being rapidly reduced both by commercial harvest and conversion to agriculture. The other resource is hydropower. With or without World Bank assistance, the Government believes it has no option but to continue developing its hydropower resources. Unfortunately, its record with such development during the 1990s in regard to environmental and resettlement issues has been very unsatisfactory, as evidenced by the history of projects in the Bolevan Plateau in the southern portion of the country, several of which were visited by the Panel. World Bank involvement in the NT2 project assures that at a minimum, its environmental and cultural guidelines will be followed, and further, that essential conservation and resettlement activities will be financed in a number of ways including through a unique fifteen year Nan Theun Social and Environmental Project (NTSEP) to be initiated during 1998.

The area of the NT2 project is of truly outstanding global importance from both environmental and cultural standpoints. In the past five years at least five larger vertebrate mammals new to science have been found in this area. It is the largest contiguous such forest area in Laos, and probably in south east Asia, and the botanical richness must be extraordinary. From all other aspects of biodiversity it is truly outstanding. In addition, it is of unique importance from a cultural standpoint, with at least four seriously threatened indigenous groups and a rich diversity of others, all of whom are threatened in some significant degree. The NT2 Project with World Bank involvement offers the opportunity to conserve both the area with its wild biodiversity and with the probability of maintaining its unique cultural resources.

On the other hand, if the project is not implemented with World Bank participation, most if not all of these resources probably will be lost. Logging, temporarily halted because of the project, will almost certainly be resumed. Road building, a priority for local administrations, will be continued through the area, with the globally-experienced attendant negative environmental



impacts. There will be less political and administrative capacity and motivation to reduce the current devastating impacts of Vietnamese and Hmong hunters and traders who have played such a major role in reducing the area's biodiversity. The very substantial, indeed, unique sources of financial assistance to effective management (e.g., the NTEC commitment of one million dollars US a year for thirty years, plus the World Bank NTSEC project) will not be available.

Consequently, it is the Panel's conviction that if the NT2 Project is not implemented as presently proposed with World Bank and the NTEC consortium participation, the unique human and environmental values of this globally important area will most probably be lost. Further, also lost will be the opportunity to establish a model -- virtually unique -- of truly best practices in preparation for a major project of this sort: and of environmentally and culturally sound and effective cooperation between a government, the World Bank, and the private sector. Outstanding plans and good intentions now exist. The Panel believes that the World Bank as well as GOL and the NTEC consortium have a joint obligation to insure that they are implemented. Failure to implement the project may represent a particularly significant blow to sustainable development, and a major and justified source of criticism of the parties involved.

### **3. Key Considerations and Conditions on POE Endorsement**

The following are key conditions on POE endorsement of the project as described above. They do not represent a comprehensive listing, but focus on what the Panel believes -- on the basis of present information -- to be of particular importance.

#### **3.1 Extensions**

The NNT Conservation Area includes the Northern Extension, Nam Theun Corridor and the Southern Corridor. The Panel believes that the case for these extensions has been very well made in many of the NT2 documents, and we strongly support these extensions. We would emphasize, however, that the Northern Extension and Southern Corridor should in no way interfere with the existing transportation routes into Vietnam via highway 8 and 12, nor with their future improvements (including possible railways), nor with the existing type of roadside commerce which currently exists, for example, along route 8 at the border.

#### **3.2 Additional Funding Needs**

Management of these additional areas will require some additional funds. In particular, the Northern Extension, being outside of the watershed of the NT2 reservoir, will probably require an additional source of support. The Panel notes that the Northern Extension is a key area for the catchment of the Nam Hinboun Dam, and would recommend that funding from the funders of that project be sought actively. Other proposed hydroelectric projects in the area will also rely on the Northern Extension for water catchment, and they, too, should provide funding for its conservation.



### **3.3 Integrity of the Protected Area**

To conserve the NNT Conservation Area's globally important biodiversity the present exploitation must be eliminated or strictly controlled. This means that zoning as envisioned by the IUCN *Management Strategy* must be established and enforced, with no hunting or other biodiversity exploitation in core areas. There should be no commercial lumbering and of course, no hydroelectric projects. Agricultural areas need to be strictly demarcated, with no additions to the areas under swidden agriculture and at least a gradual reduction of the existing areas. The commercial hunting must be eliminated, which means that Vietmanese incursions for hunting, collecting non timber forest products, and trading or purchasing biodiversity products must be stopped, as must Hmong incursions for both agriculture and hunting.

The present human population within the NBCA is, as noted previously, in a depleted and steadily worsening status, and the NT2 documentation attests to most of it being in an unsustainable relationship with its environment, which apparently cannot be rectified easily with the population in its present locations within the NBCA. At the same time the human population is steadily and very rapidly increasing. It is clear that the interests of both the human and non-human environmental considerations will best be served by a significant reduction of the numbers of humans within the NBCA. Therefore, the Panel strongly recommends that, as a high priority, incentives be developed to encourage the voluntary movement of population out of the NBCA.

### **3.4 Roads Within the NNT Conservation Area**

The current access road within the NBCA is from Laksao to the Nam Sot and on to the sub-district center at Ban Navang. The Panel recommends that road extend no further. Rather the Panel recommends that the Ban Thaphaiban and Ban Teung sub-district centers be served by feeder roads that extend up the Nam Theun and Nam Noy/Nam Pheo rivers from the Nam Theun Reservoir.

International experience with roads and the views of the IUCN team and other local experts with whom the Panel has discussed the issue, all indicate that extension of the Laksao-Nam Sot/Nam Mon road throughout the NBCA will not only seriously threaten the integrity of the area, but also increase sedimentation risks within the reservoir. There are, however, other important reasons for using tributary feeder roads to serve the two remaining sub-district centers. One is to connect them more closely administratively and economically to their Nakai district headquarters. Another is to give NBCA inholders greater access to the fishing potential of the reservoir as well as to improved social services and other economic opportunities on the Nakai Plateau – options that may increase the current spontaneous outmigration from the more densely settled valleys within the NBCA. A third is to allow better control of population movements and trade in wildlife and non timber forest products. The Panel endorses the importance of the infrastructure study recommended by the IUCN team to define the nature of roads and trails within the area.





### **3.5 World Heritage Status**

As noted in our previous report, the NNT Conservation Area and adjacent areas on the Vietnam side, including the Vu Quang protected area, have been nominated as a World Heritage Site. The Panel believes that action should be taken without delay to establish the area under this international status. The degree of international recognition accorded by World Heritage status can help provide stability in international border areas. It can assist with additional protection through possible international financial support, both through the World Heritage Fund and from other donors, and it can provide additional pressure for protection on both sides of the border.

At the same time, discussions about transborder conservation with the Vietnamese authorities should be continued, and the possibilities for an international national park straddling the frontier, or contiguous national parks should be pursued vigorously. Such border parks are being increasingly established throughout the world, and national park status would be compatible with and complementary to World Heritage status. Clearly, all such discussions require considerations of adequate protection along the border.

### **3.6 Bussing of Labor for Dam Construction**

Because of the importance and narrowness of the Nam Theun Corridor, between the NNT- NBCA and the Khammoune Limestone NBCA, the Panel recommends that laborers be bussed into the dam construction site rather than housed there. Such bussing has proved to be a very successful innovation associated with the 'Muela dam and hydropower component of the large scale Lesotho Highlands Water Project. Proper siting and construction of the laborers' camp and facilities for the still larger number of dependents, traders and others attracted by the project will also provide an important opportunity for eventually converting those facilities to serve the relocated population and other Nakai Plateau residents. Generally speaking, planning of construction sites has all too often ignored their potential for contributing to regional development after the end of the construction phase. Thus, in addition to pioneering "best practice" procedures concerning the project's resettlement and environment components, the NT2 project should also plan its construction facilities with future regional development needs in mind.

### **3.7 The Lower (Southern) Boundary of the Nakai-Nam Theun Conservation Area.**

While the higher boundary of the Conservation Area is the international boundary between Lao PDR and Vietnam, the Panel was presented with various options for where the southern boundary should be drawn. The two extremes were, on the one hand, excising the entire reservoir from the Conservation Area, and, on the other hand, extending the Conservation Area to the plateau escarpment so as to include not just the resettlement villages on the south shore of the reservoir but also Nakai District Headquarters and the plateau portions of the rerouted route 8A.

The Panel believes that the integrity of the Conservation Area requires the inclusion of the reservoir. Especially important would be the inclusion of the islands at the reservoir's western



end. The Panel is of the opinion that on the basis of current knowledge, the best option for the location of the southern boundary is to follow the receding reservoir -- hence coinciding with the lowest portion of the drawdown area at any particular time. That option would clarify the decision to allow the resettled villagers to use the south shore drawdown area for the various agricultural, grazing and fish ponding activities in the Resettlement Action Plan.

Resettlers and NBCA villagers should also have exclusive rights to fishing the reservoir which, after all, has inundated their former fishing grounds as well as dryland areas used for agriculture, livestock grazing, and gathering and hunting of forest products. Furthermore, should fishing be open to all comers from the start, the experience elsewhere is that skilled fishers from other areas, e.g., from Nan Ngum and the Mekong, would have such a competitive advantage over local villagers as to shut them out of the fishery almost entirely.

As to whether resettlers and NBCA inholders should be allowed to utilize the north shore drawdown area, as opposed to north shore fishing areas, the Panel agrees that is the type of issue which should be dealt with in connection with the reservoir management plan.

### **3.8 Xe Bangfai and other Project impacts below the Power Station**

The Panel endorses the recommendations contained within the 11 July 1997 Draft Xe Bangfai Socio-economic Survey. Because that survey covers only part of the project-affected area, extending from just above the Nam Phit/Xe Bangfai junction downstream to Ban Thatat-Xe, the report's authors recommend that similar studies be undertaken among communities further downstream with the intention of identifying the nature and thrust of current production systems and options for facilitating further development.

More specifically, the Panel recommends that the same sort of imaginative planning done for the Nakai Plateau and the NNT Conservation Area be more systematically pursued for project-affected areas and peoples between the power station and the Mekong River. Currently considerable attention has been paid to how best mitigate the impacts of increased Xe Bangfai flows by developing new irrigation areas, shifting current rainfed paddy activities to irrigated dry season paddy, intensifying fish production in ponds and tanks, and furthering livestock activities. The Panel also recommends that more attention be paid to ways in which increased flooding itself can actually contribute to future development.

### **3.9 Management of the Protected Area**

The management arrangements for the NNT Conservation Area and for the rest of the project will be the key to its overall success. These are considered in depth in the documentation, especially (for the NNT Conservation Area) in the IUCN *Management Strategy*. In view of the attention being given to these issues the Panel only wishes to emphasize two points. The first is the critical importance and urgency of capacity building. Our concern with this issue stems in part from our experience with other projects throughout the world, where adequate capacity has



proven a key to success or the converse. And our concern has been heightened by the examples of other hydro projects in Laos where capacity clearly was in short supply. The NT2 project is very much more complicated and demanding than these other projects, in large part because of the exemplary attention which is being given to its environmental and social aspects. And as a consequence the demands for trained and capable personnel will be substantially greater. There is real urgency in initiating needed training and other capacity building efforts.

The other issue involves funding for the NNT Conservation Area. At present there appears to be a disparity between the funds promised by NTEC for conservation (\$30 million over 30 years, which is approximately \$14 million at 1997 prices), and the preliminary budgets which have been prepared. There is also the question of the sources and actual amounts of funding which will be available from NTEC, the NTSEP Project, and elsewhere. We have no specific recommendations at this point, other than to register our concern with the issue.

#### **4. Provisional 1997/98 Timetable**

July, 97      Following POE Visit, Drs. Goodland and Talbot to meet with International Advisory Group and others at World Bank to provide current information on status of POE deliberations as input to World Bank decision making.

August – December, 97

Panel is available for consultation with World Bank in connection with its pre-appraisal and appraisal missions.

December, 28, 1997-

-January 18, 1998    Approximate dates of next proposed visit of the Panel to Lao PDR.