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## 1. INTRODUCTION

### 1.1 The proposal: Construction of Nam Theun 2, hydropower project in Lao PDR.

The Nam Theun Electricity Consortium (NTEC) proposes to build a hydropower dam on the Nakai Plateau in the Khammouane Province in Laos.

A primary objective of the proposed project is to produce electricity for export to Thailand. The proposal includes a 325 m long and 45 m high dam in the Nam Theun river, creating a reservoir of 450 km<sup>2</sup>, an underground power house of either 908 MW or 681 MW (both configurations will be assessed) located by the Nam Kathang, a minor tributary of the Xe Bang Fai, a downstream partly constructed and partly natural waterway of 38 km and the upgrading, re-routing and construction of some 165 km of rural roads, power transmission systems of a total length of 140 km, connecting the power house to the transfer point on the Thai-Lao border near Savannakhet.

The Nam Theun catchment area contains biodiversity of recognized global significance. The project would have major impacts on the environment and on the natural values in the inundation area and downstream. The direct and indirect impacts on the catchment area's local population of considerable ethnic variability and on their complex social fabric would be substantial, while approximately 4500 people now living in the inundation or plateau area would be resettled.

### 1.2 Involvement of the World Bank

Amongst other sources of finance, World Bank (WB) assistance for the project is sought. The WB is considering support for Nam Theun 2 through two separate operations: an IBRD partial risk guarantee and an IDA Social and Environmental Project (SEP)<sup>1</sup>. The WB Group's International Finance Corporation (IFC) may also be involved on the lending side. To help the WB reach a decision on whether or not to support Nam Theun 2, the WB sought further technical advice. This includes three studies arranged by the Government of Laos (GoL): a Study of Alternatives, an Environmental and Social Management Plan for Nakai - Nam Theun Catchment and Conservation Areas and an Economic Impact Study. Two further studies have been conducted by NTEC: an Environmental Assessment and Management Plan (EAMP) and a Resettlement Action Plan (RAP). These studies and programmes are planned to be finished by August/September 1997.

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1 If the project goes ahead, the project developers have agreed to count the costs of project related SEP-interventions as in-kind equity of the Government of Laos in the project.

### 1.3 The International Advisory Group

In order to facilitate the decision making process and provide a different perspective, the WB established an International Advisory Group (IAG). In the words of the WB's mandate to the members of the IAG the objective in establishing the Group was to obtain guidance 'on how it (the WB) can improve its handling of environmental and social issues in the hydropower projects it supports worldwide'. As an initial phase of this activity, the IAG was to provide an evaluation of the WB's handling of these issues in the proposed Nam Theun 2 project in the People's Democratic Republic of Laos and to make specific recommendations on addressing these issues.

The composition of the IAG is presented in Appendix 1. The Terms of Reference for the IAG as set out by the WB are given in Appendix 2. The initial IAG mission took place from May 28 until June 7 1997. Appendix 3 gives an overview of the working programme of the IAG. Appendix 4 lists the reference documents used.

### 1.4 Mandate, scope and interim nature of the report

The scope of the work required to be undertaken by the Group may be summarized as follows:

- provide an independent assessment of the WB's handling of environmental and social issues in the proposed Nam Theun 2 project;
- provide, as part of the above, an assessment of risks to the WB posed by involvement in Nam Theun 2 and advice on what measures the WB should take to address these risks;
- as part of the overall process, advise the WB on the project's compliance with the WB's environmental and social Operational Directives in both letter and spirit;
- advise the WB on steps to be taken to build international consensus on the proposed Nam Theun 2 project;
- provide recommendations covering the above areas.

In undertaking its task the IAG was to take on board and 'incorporate' the concerns and expectations of key Bank stakeholders.

As will be gathered from the above, the Terms of Reference of the Group were limited to the social and environmental areas of the proposed project. This was a large enough mandate to address in the very limited time available without attempting a wider assessment of the developmental, economic, financial and political issues involved in a project of this magnitude and nature in a country like Laos. It should be made clear that the IAG was inserted into an evolutionary process, still not completed, in order to provide a "snapshot" of the Bank's handling of two sensitive areas of a controversial project. The overall "bankability" of the proposals is not addressed in this report. Nevertheless the IAG felt that it could not do its work without appraising the broader context of the hydropower project and will venture to express a view on some aspects of these wider issues where it feels that this might be helpful to the WB and to the Government and people of Laos.

### 1.5 International context

The mission took place against the backdrop of an active and ongoing global debate about the results of investments in large dams around the world.

Many governments -but not all- and the private sector continue to be interested in the building of large scale hydroelectric generation dams. Scores more large dams are planned on most of the major river systems around the world. There remain widespread concerns about the overall developmental, economic, social and environmental consequences of such schemes. There are differing views on the subject within multilateral institutions including the WB itself.

The IAG was of course well aware of the widely divergent views in the world community on large dams and on the Nam Theun 2 project. These divergent views were reflected in the IAG itself to a certain extent. The IAG's members agreed to take part in this present exercise on the basis that a

broad cross-sectoral look at one current project in a poor developing country might help to illuminate to a degree the wider debate about the impacts, benefits and costs of large dams worldwide.

One element of the consensus reached in the Group was the importance of international transparency on Nam Theun 2, not only at the formulation stage but for a considerable period of time to come if it is to attract support internationally. Approaches to enhancing transparency will need to be elaborated.

The IAG notes also two regional contexts of some significance: the wider plans for development of the Mekong River ecosystem and the entry of Lao PDR into the Association of South-East Asian Nations (ASEAN).

## **2. THE LAO CONTEXT: BROAD CONSIDERATIONS**

### **2.1 Special features of the Lao context**

The Lao PDR is a poor country with limited resources. At US\$ 350 p.a. per capita income is one of the lowest in the world. The incidence of poverty is high (46.1%), especially in the rural areas (53%). Integration of 68 ethnic groups is a considerable challenge. The Lao "economy in transition" has been going through a difficult period as it opens itself to the world community, especially since 1988. Against the background of these multiple challenges, investment in the social and environmental sectors, while not neglected, has not been a high priority activity. Health, incomes, education and housing conditions in the rural communities, particularly in remote villages, call for early attention.

The macro-economic performance of the transition economy of Laos has been remarkable with 6-7% annual growth (from a low base) in recent years and with relatively low inflation rates. The good growth performance is expected to continue in the coming period, while there are already some danger signals on the inflation front. However, Laos has not thus far been able to translate these achievements into substantial progress on the ground in alleviating rural poverty in particular.

Limited trained manpower is a factor holding back the achievement of policy objectives. Increasing gaps in income and life styles between urban and rural areas is a major obstacle in allocating the scarce trained human resources to where the needs are the greatest, since many trained Laotians are reluctant to spend long periods in rural areas. Laos may have something to learn from its southern neighbours, notably perhaps Malaysia, in "bringing bright lights to the bush". Training in such areas as rural development and nature conservation are priority requirements and Laos needs a cadre of competent cross-sectoral managers.

A key problem, linked to the human capacity one, is the weakness of institutional arrangements, nationally, regionally and at village levels. It is of particular importance to strengthen local and village level institutions if the poverty alleviation strategies agreed at the Party Congress in March 1996 are to be pursued effectively.

A further burden is the country's level of external debt. Resulting in part from past debt to the former Soviet Union but also from ongoing current account deficits (US\$ 308.4 million in 1996, excluding official transfers), the situation calls for imaginative approaches to debt relief and removal.

Despite the list of constraints set out above, Laos is not without resources and opportunities. If fresh water is seen as the oil of the twenty-first century and rich biodiversity is seen as the diamonds of

the future, then Laos has two commodities of great price. It might now be seeking to add value in these sectors, looking to such possibilities as electricity intense industry, further processing of its timber in-country, eco-tourism and cultural tourism and eventually to using its low wage structure to seek comparative advantage in manufacturing inside ASEAN, not least in silk and other textiles.

## 2.2 Conclusions and recommendations on broad development and project-related issues

While it is highly presumptuous of the IAG on the basis of one short visit to be offering any solutions to the development problems of Laos, we offer the following passing thoughts as a contribution to an on-going debate.

### 2.2.1 Broad development issues

- 1) Participation in ASEAN, and perhaps eventual participation in the APEC, will offer Laos an opportunity to pursue wider options if the Laotian economy and its public and private sectors gear up for these developments with vigour. There are risks involved. So it is probably not too soon for Laos to be addressing these new options and to be developing a broad based strategy for its national development, building in the ASEAN dimension.
- 2) A renewed effort for capacity building will involve clear identification of priority areas. Primary education, including eradication of illiteracy with an emphasis on girls and women, is one. Vocational training in agriculture and in basic engineering also appears to be important. Model farms and centres of appropriate technology might be useful. UNDP should desirably lift its game in this area, becoming more proactive than it appears to be at present.
- 3) Decentralisation of the government structure by providing local communities not only with more authority, but also with more financial independence would contribute to rural development in Laos. Signs of ingenuity and entrepreneurial skills in the local communities are evident. By providing opportunities for communities to take their own initiatives, a new landscape for the Laotian economy will open up.
- 4) It is important for Laos to build up credibility in the world financial community through its concrete actions. For this purpose, it seems essential for Laos to establish that henceforth contracts for feasibility studies, planning and implementation will be pursued through open and competitive bidding processes. This does not appear to have been the case in relation to this project. Additional credibility would come from the introduction of a comprehensive national auditing system, preferably with an external auditor involved.
- 5) It might be useful for Laos to establish an institute of applied economic, social and environmental sciences, oriented to problem solving, in Vientiane. Outside help from bilateral sources would doubtless be available. It might become a focal point for Laos' international contacts, needs that will increase rapidly with its opening to the international community. It may be useful initially for this institute to include international experts for the purposes of strengthening the institute's capacity. Involvement in international networks of research institutions might also help strengthen its capacity.

### 2.2.2 Project related issues

- 1) The time is fast approaching when two key negotiations on the project will be initiated. It is of vital importance for the Laotian government to put together a competent negotiations advisory team on Nam Theun 2 answerable only to the Laos side. The GoL needs to be able to match the negotiating experience and information of those on the other side of the table. This will in the end be advantageous to both sides. A start has been made on accessing such advice but independent experts in finance, law and energy negotiations need to be moulded into a team capable of providing a coherent cross-sectoral brief for the Lao negotiators. Such a team should

spend substantial periods of time together in Vientiane rather than simply flying in for short one-off visits.

- 2) Whether or not this project proceeds, there is a requirement for the WB to strengthen its office in Vientiane. Competent resident experts will be particularly useful in the coming ten years as Laos goes through a further difficult period of transition. The newly introduced system of having WB Country Directors resident on the ground will benefit Laos.
- 3) Equity participation of the Laotian government in the project should include a realistic valuation of the affected areas, not least the inundated area. It is recommended that proposed compensatory contributions towards watershed management costs be compared with other examples around the world, e.g. the Sinú hydropower dam in Colombia managed by Empresa Urrá, which is required to pay 3% of its income p.a. for watershed management and 3% for local development schemes.
- 4) The so-called BOOT (build-own-operate-transfer) arrangement covering this project is an unusual one in WB history. The justification is that the arrangement reduces the equity requirement of the GoL and provides a mechanism for the Government (which does not have the capacity to take over the installation in the short term) to postpone assuming full responsibility. Respective responsibilities of GoL and NTEC will be set out in the concession agreement yet to be negotiated. It is not clear at this point how adequately externalities such as unmitigated or residual impacts will be captured in the final document. This reinforces the case made above by the IAG for the GoL to have available a competent team, loyal to the GoL only and well versed in international energy negotiations, to provide advice to the GoL negotiators during the BOOT negotiation and the accompanying tariff negotiations with Thailand. Acquaintance with modern 'green accounting' methodologies (propounded by the WB) would be one qualification for the advisory team.
- 5) The livelihood proposals for the project focus on the agricultural and forestry sectors. But the infusion of new funds and a migrant labour force will open up opportunities for Laotian entrepreneurs. Whilst some business openings may occur during the construction period (e.g. earthmoving, catering, supplying of vegetables), the challenge will be to establish enterprises. NTEC can facilitate in these areas by arranging access to credit, providing training in entrepreneurial skills and access to technology, and seeking joint venture partners for local enterprises. This will help ensure that local communities have an opportunity to benefit further from the project.

### **3. ASSESSMENT OF HANDLING OF SOCIAL ISSUES**

#### **3.1 Linked nature of social and environmental issues**

If this complex and many-faceted project goes ahead- a decision well beyond the IAG's mandate or powers- then it may well come to be regarded as in many respects innovatory in the handling of social aspects. Curiously enough, the WB has no consolidated set of rules on how to handle the social aspects of its projects where these impact on other than indigenous peoples. A number of Operational Directives (ODs) touch on social issues but these are not brought together except in the case of indigenous people. The latter OD covers many of those affected by the Nam Theun 2 project but not all - the downstream lowland Lao people are not covered for example.

That said, the range of project proposals which collectively make up the social strategy represent an impressive attempt to try and integrate social factors from the outset into a massive infrastructure project and to turn a historically weak facet of such WB projects into a positive developmental contribution. The intent not simply to maintain living standards of those to be resettled, but to lift those standards is entirely appropriate since the present baseline is low.

There will be flow-on effects if this policy is successfully achieved. Thus, there is considerable potential for the Resettlement Action Plan (RAP) resettlement activities (including upgraded houses, greater income, and social facilities) and other induced activities around the reservoir to produce a disturbing effect on internal migration patterns. Will this bring people from other provinces to Khammouane? Will it stimulate movement even within the project area? Might it, for example, tempt Brou families from the watershed to move in with relatives around the reservoir or with relatives in the area downstream of the projected powerhouse, where the potential for irrigation will increase considerably? (So long as this was a completely voluntary process it might have conservation benefits). Little of this is able to be forecast at this point but a degree of flexibility may have to be injected into social strategy with the passage of time to cope with unforeseen internal migrations.

The Group was not able to observe the degree of public participation in project planning except in Vientiane itself. There, given the nature of Laotian society at this time, there was little involvement of 'the public' as such. There were (intermittently) representatives of expatriate NGOs, many Lao officials and some representatives of the people affected by the project but few others. The process was open enough but stilted in tone. From what we were able to gather, the process outside the capital and particularly in the villages facing resettlement was more participatory and substantive. From the Group's own contacts, however, it is apparent that there were deficiencies in this process (see Appendix 5). There is a clear need for stepped up public education work among the people in the plateau and particularly in the watershed area.

It must be repeated that in this project the three areas of social development, economic development and conservation of the environment are closely linked. Put baldly, if the people's basic social and economic needs are not met, they will go on with their present sometimes destructive practices and the watershed and its biodiversity and eventually the reservoir will be damaged. On a more positive note, the indigenous knowledge systems of the people in the NBCA can be drawn upon in due course to help manage biodiversity of the watershed and those involved will acquire a cash income from other than the exploitation of wildlife.

### 3.2 What are the large social issues?

The scope for developing alternative models for social development in the region is not great given funding and other constraints. Issues requiring attention include:

- 1) Alleviation of poverty which calls for:
  - negotiating a concession agreement that will provide an equitable and secure revenue package to GoL;
  - the GoL making a firm commitment to direct these revenues into the delivery of practical poverty reducing programmes especially in areas like health, education and agriculture;
  - institutional mechanisms for channelling funds from both bi- and multilateral sources to the regional and local level in the wider region, including the lower Xe Bang Fai (e.g. dry season irrigation);
  - a programme to deliver services and develop alternative livelihoods for local communities within the NBCA as well as the Plateau.
- 2) Achieving a successful resettlement with expanded incomes for those directly affected. (See Section 3.3 below.)
- 3) Not neglecting those people affected who are not to be resettled. Detailed plans for compensation in the case of other affected people have yet to be developed (e.g. those affected by building of the transmission line to Savannakhet) and by expanded water flows in the Xe Bang Fai). This area needs further attention.
- 4) Handling migrant worker problems adequately. The social impact of an influx of around 4000 construction workers and camp followers (one estimate is as high as 6000 in total) is considerable, bringing social stresses in its train. Therefore, for example:

- close supervision and reporting by sub-contractors on movements of construction workers into the catchment area would be desirable, especially after the reservoir is filled;
  - all construction workers and camp followers should be screened for Sexually Transmittable Diseases and HIV and should have access to basic health services.
- 5) A proactive programme for expanding the proportion of workers of Lao nationality on the project. The project might develop mechanisms to recruit and train Lao workers for construction and other work and apply special arrangements for Lao nationals such as affirmative action on training, margin of preference in bidding, housing or boarding facilities etc.
  - 6) Striking a balance between social services delivery and inducing adverse environmental impacts. Infrastructure development to facilitate delivery of services to communities in the catchment area needs to be negotiated further with GoL (including the Bolisat Phathana Khet Phoudoi Group -BPKP). Education and health services (particularly women and the young) are a key priority for long term social and institutional development in the plateau and catchment area. Funding may be sourced from the NTEC annual contribution, which will almost certainly require substantial augmentation.
  - 7) Investigating alternatives to consolidation of communities in the catchment area. Research findings suggest that the disruptive social effects of this may outweigh the logistic advantages. But methods of delivery need further thought (see environmental section below).

### 3.3 Assessment of Social Action Plans

The history of resettlements is a sorry one, so caution (and learning from past mistakes) are necessary. The resettlement areas in this case are not far removed - almost all lie within the existing village boundaries.

The Resettlement Action Plan appears to provide a sound basis for achieving a successful resettlement. Field visits suggest that further evolution of the livelihood model may be necessary and that the process requires a clearly defined and more appropriate communication strategy (e.g. community exchanges with Nam Ngum reservoir area people, use of models of the dam and reservoir, and video presentations).

As a general observation, it might be noted that the RAP calls for considerable adaptation of livelihood skills by those to be resettled and for field proving of new production techniques. What this and other factors suggest is that a five year timeframe for implementation of the RAP may well prove insufficient. A longer timeframe period by NTEC may prove necessary to assure sustainable results, for social engineering is more complex than construction engineering. Managing the very high expectations of those to be resettled will be necessary (Refer field notes Appendix 5).

It should be noted that the RAP, comprehensive and imaginative though it is, does not cover the social implications of enhanced internal migration brought about by a successful resettlement. Immigration of non-Lao is not covered either.

What this highlights is that the Bank's project managers, in consultation with their GoL counterparts, need to address a range of social issues lying outside the TOR of the RAP and other social action plans. The spontaneous immigration issues aside, there appears to be a gap in relation to affected people in the lower Xe Bang Fai and Savannakhet plain areas.

The draft of the NNTCA Environmental and Social Management Plan made available in late July 1997 is comprehensive in its reach and has the elements of a useful basis for planning. At the same time it clearly needs further work to pull the various components together. While the IAG wondered whether setting conservation of biodiversity and ecosystem functions as "the highest management priorities" for the area was appropriate it decided that on balance this is true for this part of the project area, provided that sufficient weight is given also to the principle that communities should be the "net beneficiaries" of management interventions. The Group also felt that more substantial involvement in discussion and decision-making by stakeholders was needed than through their "wide representation ..... at meetings and report distribution". There is a need for inclusion of community

representatives at all levels of the management structures if there is a serious intention to involve the villagers in a co-management system.

The GoL and Bank should consider further the timing and funding implications of the Catchment Management Plan. The processes envisaged in the Plan have the potential for lifting living standards but will require the communities to change substantively their daily behaviour patterns not least if they are to adopt some of the livelihood options now presented. This will call for a sustained investment of resources in terms of achieving social change. In the IAG's view, NTEC's financial commitment to development in the catchment area will need to be stepped up considerably if the plan's objectives are to be achieved and the Bank's own NTSEP provisions will also have to expand. Additional donor funds will also have to be sought. A commitment stretching over perhaps two decades will be involved. We trust that both NTEC and the Bank are prepared to make this long term investment.

The Bank still has much to do in stitching together and reconciling the social development aspects of the RAP, the NNTCA Management Plan and its own NTSEP. None can be implemented in isolation from the others.

The Bank's own NT Social and Environmental Project (NTSEP) has not yet been finalised, for in a sense it is a backstop and a supplement to the other management plans, plugging gaps and meeting additional needs. One result is that in late July 1997 the NTSEP had coherent sets of proposals only in relation to three sectors - resettlement, public health and education and training. Each of these is important (as communities said to the IAG) but the Project as it stands at present appears somewhat fragmentary. The IAG will be interested in seeing the final version of this useful Bank initiative, for the Group has stressed the need to pull the various plans together and this project provides one mechanism to help achieve this.

### 3.4 Compliance with WB's Operational Directives on social and indigenous peoples' issues

As noted above, a number of the Bank's Operational Directives (ODs) touch on social issues but these are not brought together except in the case of indigenous peoples. This latter OD (4.20) in fact covers most of those affected by NT2 but not all, the downstream lowland Lao people not being included. But the lack of a more widely applicable OD on social impacts is a serious deficiency which should be addressed, perhaps in the context of the planned Bank/IUCN Large Dams Commission. One way forward would be to adapt, update and widen the scope of the Bank's Social Assessment Guidelines, converting them into an OD. The three ODs surveyed related to Environmental Assessment (4.01), Involuntary Settlement (4.30) and Indigenous Peoples (4.20). A paper on Natural Habitats (O.P.4.04) was also reviewed. The Group would not claim to have made a comprehensive assessment of the application of all of these papers in the case of NT2 (this is a technical process which would have required more time than the Group had available). Nevertheless, a brief survey was undertaken, the detailed results of which appear in Appendix 6. While it may be said that those (NTEC) drawing up the RAP were clearly well aware of the requirements of the OD's, this is not as apparent in the case of those (IUCN team) who drew up the NNT Environment and Social Management Plan (ESMP).

There are several technical deficiencies in the ESMP in compliance terms, not least in respect of OD 4.20 although the social analysis work is excellent. Since the indigenous peoples in the watershed area are vulnerable, the deficiencies need remedying. As noted in Appendix 6, much of what is missing relates to baseline data, information on the legal status of the indigenous groups and land, and (most important), provision for pulling together, monitoring and evaluating a consolidated development plan relating to indigenous people. It is necessary at the moment to read the ESMP and the NNT Social Action Plans together to get the full picture in terms of a development plan. Editing is called for.

In the case of the Resettlement Action Plan, the ODs have been applied in most cases but the IAG has doubts about the effectiveness of consultations on the ground with the most vulnerable

populations, particularly women and ethnic minorities (as required under OD's 4.20 and 4.30). Its own direct contacts with these groups, though not extensive, suggest that the level of comprehension of project proposals and their impacts is low. A stepped up programme of public consultation is important, not least to encourage "ownership" of the proposals by those affected. Other areas which need addressing are more intensive consultation with and assistance to the affected communities on the upper Xe Bang Fai and the absence of any poverty alleviation measures for people on the Savannakhet Plain. The issue of population growth is not specifically addressed in terms of paragraph 18 of OD 4.20.

Once criticism of the RAP process is that it seems doubtful that the range of resettlement options and alternatives envisaged in OD 4.30 were put to the communities though some were.

A second point is that the methodology of holding large collective meetings in the villages may have precluded less powerful groups, notably woman, from always being heard.

IUCN's consultative approaches took place over a six-month period only. Nevertheless, its more anthropological approach in watershed villages was more flexible and probably "empowered" communities in their interaction with researchers more than was true of the NTEC approach in the plateau and other downstream villages. The responses were thus more spontaneous.

It goes without saying that final judgements on compliance with the Bank's ODs await the outcome of negotiations yet to occur and implementation procedures and practices yet to be put in place.

### 3.5 Risks and opportunities involved for the WB on the social side

Risks on the social side will arise if:

- 1) The RAP is not fully implemented, proves deficient in practice, is not adaptable to new circumstances or is terminated prematurely.
- 2) The RAP in practice does not result in an increase in incomes of directly affected communities. The concession agreement should clearly indicate income targets.
- 3) The Catchment Social Management Plan's proposals for additional livelihood options prove impractical on the ground.
- 4) Consultation processes at the local level are not sufficiently thorough and meaningful to bring in the community stakeholders.
- 5) Spontaneous migration of people from the catchment area occurs without an adaptation of social strategies.
- 6) Negative impacts on livelihoods (including loss of access to protein sources) of downstream communities occur.
- 7) Weak institutions fail to implement management and mitigation plans.
- 8) Adequate WB oversight resources on the ground in Laos are lacking.
- 9) WB and NTEC involvement is of short duration: this is a complex and many-faceted operation, which will not be concluded in a five year time-frame.

The opportunities on the social side are:

- 1) To illustrate that it is feasible in planning and implementing a large dam project to produce positive social and environmental impacts on the situation of affected communities including indigenous people.
- 2) To foster the habit of joint cooperation between the private sector, government, NGOs and civil society at community level in large infrastructure projects.
- 3) To foster social cohesion rather than social disintegration of communities on the Plateau, the NBCA and downstream communities.
- 4) To strengthen GoL overall social delivery capacity as a model for other areas in Laos.
- 5) To promote recognition of the traditional knowledge of indigenous peoples and the substantive contribution it has to make to conservation of biological diversity.

### 3.6

## Conclusions and recommendations on the handling of social issues

This is a complex cross-sectoral project on the social side. It will therefore be very difficult to manage. It is innovatory in approach and is an impressive, if thus far not entirely integrated, attempt to incorporate social factors from the outset into a large infrastructure project. There will be flow-on effects in terms of promoting internal migration as a result of a successful endeavour to raise incomes and living standards among the resettled.

Success is not guaranteed, being dependent not only on a stepped up and sustained delivery of social services by the Lao government and a vigorous response by the leadership of the affected communities, but a long-term input from both the World Bank and NTEC which needs to extend beyond the present timeframe. In the end, the resettlement element of the project and the amelioration of the situation of the downstream people may prove simpler to achieve than improving the lot of the people in the watershed. Getting the latter aspect right, but without further damaging the watershed and its rich biodiversity, is the fundamental challenge and will be a final determinant of the technical, environmental and social success of the project as such. There is the potential here for making a real, measurable and lasting impact on the basic needs of the Lao people as a whole if the many loose threads are woven into one of those harmonious fabrics produced by the many ethnic groups in Laos.

Some interim recommendations by the IAG are to be found in the section above on the large social issues (para. 3.2.). Others are:

- 1) Pay enhanced attention to integrating the planned social activities across the whole scope of the project area (there is occasional evidence of a fragmentary approach; what is becoming clear is the interaction and impact of social activities undertaken in one part of the province on people elsewhere).
- 2) Capacity building in human terms is a crucial element of all aspects of the proposals and should desirably engage both the WB and UNDP, in addition to NTEC, in helping GoL establish decentralised training systems and networks.
- 3) Address poverty alleviation through more direct means than lifting national revenue flows and implementing the RAP (e.g. step up overall resource mobilization activities nationally, expand job opportunities for Lao nationals in the construction and related phases of the project, interest UNDP or a bilateral donor in bringing dry season irrigation to the lower Xe Bang Fai, etc.).
- 4) Address the impacts on such other affected communities as those affected by the transmission line to Savannakhet.
- 5) In looking to improve the living standards of those in the NBCA, research and employ appropriate or intermediate technologies which are low impact (e.g. viewing the reservoir as a road, consider the use of aluminium jetboats, (found elsewhere on the Mekong) to provide wet season access to the NBCA villages, expand the existing use of micro/micro hydro devices to bring electricity lights to the villages, build a series of small weirs employing gravity feed mechanisms rather than large weirs and pumps to expand paddy rice areas).
- 6) Impress on both expatriate and Lao participants that the social and livelihood programmes are not an add-on but a quite crucial element of the whole project -and in the final analysis one of the ultimate justifications for it.

## 4.

### **ASSESSMENT OF HANDLING OF ENVIRONMENTAL ISSUES**

The studies on environmental impacts and activities relevant to the proposed Nam Theun 2 project are the Environmental Assessment and Management Plan, the Resettlement Action Plan, the project outline for the Bank's own NT Social and Environmental Project, the reports of the International Environmental and Social Panel of Experts and NNTCA Environmental and Social Management Plan. The IAG also had a range of material available to it which were contributions to the above

studies including internal WB reports, a range of publications on the biodiversity of all affected areas by field biologists of the Wildlife Conservation Society and a number of field reports by specialists of IUCN-the World Conservation Union.

It should be underlined once again that there are very close links between the environmental issues raised by the project proposal and the social and developmental issues. Experience elsewhere suggests that to ensure sustainable use of natural resources let alone a high level of conservation of a region's biodiversity the human factor has to be kept firmly in mind from the beginning. Reduced to a simplified form, the balancing act required to protect the project watershed and its world class flora and fauna involves finding viable and sustainable alternative sources of food and income to the human inhabitants' present cultivation methods, hunting and overfishing, and devising efficient ways of bringing much needed social and economic services to the watershed's human inhabitants without building a network of all-weather roads. In the case of Laos it should be noted that an added dimension is the need to reach an understanding with neighbours, notably the Government of Vietnam, on cross-border incursions by traders seeking nature products. A transboundary reserve with World Heritage status might be a constructive approach.

#### 4.1 Environmental impacts

The Nam Theun 2 proposals represent in sum a drastic intervention in the Nam Theun and Xe Bang Fai aquatic and terrestrial ecosystems. This is a reality. So are there less drastic ways of achieving the conservation of biodiversity in the region which the Bank or the GoL have endeavoured to put in place? There is a surprising consensus of view among the environmentalists who have studied the situation on the ground that the Nam Theun 2 proposals, to the degree they have been agreed thus far, represent the single most realistic prospect of preserving as extensive a proportion as possible of the unique biodiversity of the project and contiguous areas. The IAG does not dissent from this finding.

There are some large environmental offsets involved. There will be considerable environmental impacts if the Nam Theun 2 scheme goes ahead. The cumulative aquatic impacts will doubtless be severe at several levels. Inundation of the Nakai Plateau, originally rich in biodiversity, will reduce the remaining biodiversity. How serious is this? One study<sup>2]</sup> comments that: 'other than a few patches of pine, of mixed broadleaf forest and possibly some riverine strips, most of the terrestrial area of the plateau is considered to be substantially modified by human activity and from a biodiversity standpoint substantially degraded from its original status'. A second field observer<sup>3]</sup> states: 'Today... much of the Plateau is heavily degraded due to clear cutting operations and human settlements. While the remaining forest patches on the plateau contain a bird and mammal diversity that, for the most part, equals some areas inside the NBCA itself, the abundance of most bird and mammal species observed on the plateau is very low'.

It is clear that riverine bird and fish species in the Plateau will be affected, the latter more seriously perhaps than the former. The river is reported to provide a haven for some rare species of birds, notably the threatened white winged duck. Such species may be lost to this particular area if it is inundated. There are several significant species of fish in the plateau rivers. Further studies are progressing on how unique these are to the area. Only when these studies are completed will a forecast of the full gravity of the biodiversity impact be feasible.

Downstream of the proposed dam the river flow will be heavily cut, while the additional flow is diverted to a separate river system in the Xe Bang Fai. The impact on fish life in the lower Nam Theun will be severe. The impact on the Xe Bang Fai has not yet been calculated, but is likely to be considerable, although the canal designers are building in aeration buffers and a very wide bed to accelerate oxygenation and to attempt to equate water temperatures. Further information is needed

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2 First Report of the International Environmental and Social Panel of Experts.

3 Rabinowitz, Alan: Wildlife Conservation Society paper.

here. The effects of the introduction of exotic fish species are likely to be as disastrous in this ecosystem as elsewhere and should be strictly avoided.

A total of five construction camps will be temporarily constructed to house the 2000 workers needed during construction works. Experiences with the construction of the Theun Hinboun dam show that an additional 4000 people could enter the area as merchants, temporary and informal workers. This could result, amongst others, in illegal logging, intensive hunting and non-timber forest products collection.

## 4.2 Some mitigation approaches

As noted, most of the environmental reports from field scientists appear to accept and endorse a quite explicit trade-off through offsetting biodiversity losses in the plateau and downstream areas against net biodiversity gains sought by conserving both aquatic and terrestrial biodiversity in the extremely rich upstream NNT-NBCA area and its extensions. Why do the field people who are advising the Bank accept what they see as the inevitability of this offsetting project, unusual as it is? The answer appears to be the pragmatic one that the Nam Theun 2 project proposals, designed to preserve the catchment from logging and erosion, and hence from siltation of the very shallow reservoir and loss of power production, appear to offer 'the best available chance to save at least key parts of this (NBCA and extensions) truly important area and its biodiversity'<sup>4</sup>. They point to undertakings from the developers to allocate substantial funds for catchment protection and the ongoing negotiations with the GoL regarding legal and other undertakings to exclude logging and hunting from the catchment area as evidence of a resolve to conserve the NBCA.

How valid are the expectations of the Bank's advisors of a successful offsetting operation, what risks are there in it and what are the alternatives? A final judgement cannot be made on this key equation at this point. More information on the overall biodiversity impacts and on the nature and sustainability of the undertakings by the GoL is needed. Perhaps most important in the end, an answer will depend on an assessment of the capacity of the Lao side to undertake successfully an unprecedented (for Laos) series of complex programmes to get the people in the catchment area onside, to help them develop alternative livelihoods to sometimes destructive swidden cultivation practices and hunting, to bring them better social services- and at the same time to effectively preclude logging and other damaging harvesting activities in the catchment and contiguous areas, to undertake the training and institution building required to put in place an efficient protected area regime and to achieve socio-economic progress without building a network of all-weather roads into the catchment. These are all demanding, costly and time-consuming processes which will be very difficult to manage given the present development phase of the country.

So is the game worth the candle in environmental terms? Is it worth losing much of the limited but still significant biodiversity value of the inundation zone and downstream areas in order to try and preserve the NBCA and linked areas? The eventual answer may well be a qualified yes, for there is unanimity of view that the NBCA and its proposed extensions are extremely significant from a global biodiversity perspective. It is 'probably the most richest and largest wild area remaining in Lao PDR and one of the largest in South East Asia'<sup>5</sup>. Little botanical research has been done but there are at least 14 globally endangered large mammals, 8 globally endangered birds and 20 bird species considered globally rare or endangered in the region. This is an unusually valuable site, its worth being virtually incalculable and certainly an order of magnitude beyond the value ascribed to it using the methods employed in economic impact studies or in the calculations thus far of the opportunity cost of not logging the area, for example.

At a more detailed level, mitigation measures might include:

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4 First Report of the International Environmental and Social Panel of Experts.

5 First Report of the International Environmental and Social Panel of Experts.

- promoting a public debate on the alternatives to all-weather roads into NBCA eg. see the reservoir as a road from the Nakai administrative centre to the NBCA area, with access tracks for motorcycles or small four-wheel drive vehicles from the reservoir via the river gorges to individual settlements or use of jet boats in wet season (as on Mekong);
- taking active steps, desirably in cooperation with Vietnam, to enhance the biodiversity protection level of the NBCA and 'Northern extension' area through seeking World Heritage Status for the site (extending over the border into related Vietnam reserve). There may be long term potential spin-offs in eco-tourism terms though experience elsewhere suggests that expanded incomes for local people are hard to achieve through this means. Potential for eco-tourism on a national scale could well be a way to raise income for NBCA's but infrastructure costs would be high;
- investigating the potential for further enhancing the biodiversity protection level of the NBCA and the 'Northern extension' through 'carbon sequestration' or 'debt for nature' swaps with donors/debt holders. Funds thus acquired would inter alia facilitate the establishment of the proposed Sai Phou Lovang National Park. The Northern extension is a catchment area for the Theun Hinboun project, so the same technique could be adopted by the project developers here (amongst others, the Asian Development Bank);
- promoting (for social and environmental reasons) the use of appropriate technology in the NBCA villages eg. provision of low cost micro/micro hydro devices, solar energy, fuel efficient woodburning stoves;
- investigating the feasibility of very small weirs rather than larger ones for paddy rice irrigation where this is planned.

In Khammouane province a study is needed to compare potential sustainable timber production in production forests with the currently installed processing capacity. Capacity will have to be adapted eventually to available sustainable produced timber.

Construction phase mitigation measures -especially around the dam site which is located near the so-called Corridor Protected Area- could be improved by learning from comparable experiences in protected areas elsewhere in the world (e.g. the Maxus oil-drilling concession in Yasuni National Park in Ecuador). Measures occasionally found effective elsewhere include:

- bussing of workers to and from the dam site from a camp outside the construction area;
- access to the (road to the) construction sites by permit only;
- security and policing by an agency under contract to the main contractor(s);
- provision of complete food supply to construction workers, accompanied by a ban on fishing, hunting or wildlife purchases;
- the exercise by government of some control over spontaneous resettlement.

#### 4.3

#### Assessment of NNTCA Environmental and Social Management Plan and NTSEP

In terms of its environment aspects, the draft Catchment Management Plan displays sensitivity to development/people/conservation links and interdependencies. The emphasis on priority to be given in management terms to conservation of biodiversity and watershed protection, balanced by a commitment to making communities within the NBCA net beneficiaries of management interventions, is an equitable approach. Aspects that need special attention are: more comprehensive resource use planning, preparations for possible voluntary resettlement, disaggregation of social issues by ethnic minority/group, establishment of low impact irrigation schemes in the NBCA and demarcation of agricultural zones around villages (monitoring by aerial photography?).

That said, it would appear that the draft Catchment Area Management Plan has not been put together with the level of involvement by communities or GoL officials which is desirable. This became apparent during public consultations in July when officials appeared to contest some aspects of the Plan, particularly as it applied to roading plans. More effort is clearly needed to bring all parties on-side.

Remaining requirements include:

- some complex new legislation and administrative/communication plans;

- a strategy for fund raising for the new expanded budget;
- the proposed NT Watershed Authority and associated institutions to be more inclusive in form. The more collaborative the management structure, the better;
- donor assistance for Environmental Impact Assessment (EIA) regulation and capacity building, including the introduction of an independent reviewing body for this and other projects;
- the Bank's NT Social and Environment Project (NTSEP) is, as already noted, not yet in its final form and concentrates for the most part on mitigating social impacts. Some of the mitigation measures suggested in 4.2 above, not least in relation to the introduction of appropriate technologies in the NBCA villages, should desirably be included in the final version of the NTSEP. The project should be planned to extend over two decades.

#### 4.4 How well does the overall handling of environmental issues comply with the Bank's ODs?

Measuring the handling of environmental issues against the Operational Directive on Environmental Assessment (4.01) the following conclusions may be arrived at:

- early recognition of most environmental consequences: achieved;
- mitigation proposals, especially in protecting the watershed: a breakthrough in terms of past practice;
- intended WB coordination: only coming together now: cross-sectoral work should have been pulled together earlier on, particularly in the case of the social action plans;
- environmental management capacity building: in Laos an uphill struggle but the WB is gradually engaged;
- environmental assessments: should be an ongoing aspect of this project i.e. need constant monitoring (perhaps by an independent agency);
- independent environmental advisory panel of experts: already engaged (the Panel of Experts plus the IAG itself);
- involvement of NGOs: OD 4.01 para 19 and 20 discuss the involvement of affected groups and NGOs. Laos does not have 'local' NGOs, only branches of international NGOs that implement development projects in Laos. These NGOs have been invited to participate in the public consultation events. Their participation suffered a setback when the GoL decided in early 1997 to dissolve the NGO forum. However, it has to be observed that a public consultation process is something new in Laotian society and that the efforts that have been invested to make it a success have been considerable;
- affected groups: consulted but not yet fully aware of the consequences for them (especially in NBCA);
- information disclosure: still slow and not spontaneous but overall an open process;
- provision for conservation of biodiversity and habitats: made an integral part of the overall proposal;
- supervision arrangements: not yet apparent (need bigger resident WB mission);
- compliance with natural habitat OD: is adequate if it is accepted that degradation of the Nakai Plateau by flooding and hence the loss of biodiversity there is offset adequately by serious conservation action in NBCA and other more valuable areas;
- capacity building measures: remains to be proved that these will be adequate and able to be implemented effectively in this case;
- compliance with OD on Environmental Policy for Dams and Reservoirs: is not possible to assess until final versions of all reports and management plans are available.

## 4.5

### Risks and opportunities on the environmental side

There are big risks involved on the environment side in proceeding with this project as at present spelled out. These are summarised below:

Macro level risks would include:

- the project's complex and ambitious objectives not being met because of mismanagement on WB's part including a failure to invest sufficient human resources in ensuring coherence and compliance on the ground in Laos (need larger and more technical resident WB mission in Vientiane);
- the project's objectives not being met because of a lack of GoL commitment, capacity and longterm resolve to meet especially the watershed conservation requirements (biggest potential risk);
- as a consequence of one or several of the above, the WB's overall reputation suffers damage, its future involvement in hydropower projects is jeopardized and confidence in the institution by inter alia the private sector is undermined;
- as a result of the above, hydropower projects undertaken by the private sector only in future with few projects meeting WB Operational Directives on the social and environmental sides- a disastrous outcome, with huge risks for those countries not able to protect their own interests adequately.

Project level risks:

- inability to secure attractive tariffs for electricity from EGAT (Electricity Generating Authority of Thailand) and/or to negotiate a configuration with return commensurate to interest and risks results in diminution of interest in social and environmental aspects (a risk enhanced to a degree by the current economic downturn in Thailand);
- ineffective conservation of the NBCA and associated areas or insidious encroachment and logging results in a breakdown of the basic offset arrangement;
- possible unplanned and unfunded migration of people in and from the NBCA area promotes international criticism which undermines commitment of stakeholders to the project.

Opportunities:

- this is a chance to conserve a series of natural sites of high global value and to enshrine them as the jewel in the Laotian crown, preferably with World Heritage Status conferred;
- managed effectively (not guaranteed) the NT Biodiversity Conservation Area could become a model for the entire Laotian protected area network and form the basis for a string of NBCA's along the Annamite chain leading on to a spectacular border-long national park of global importance.

## Recommendations on environmental issues

Additional to recommendations in the paragraphs above, some thoughts are:

- since handling the human factor is so vital to ensuring that conservation objectives are met, project implementers will need to concentrate on this factor over the initial phases;
- the capacity building (institutions, people) aspect of the project is so vital to achieving the environmental objectives that a consolidated capacity building work plan might be advantageous;
- further research is called for on aspects of the hydrology and particularly the aquatic biodiversity of the riverine systems, with a clear picture sought on the numbers of endemic fish;
- there should be no introduction of exotic fish into the reservoir and a public education campaign should be undertaken to guard against accidental or unplanned introduction;
- some of the WB's emerging "green accounting" concepts might usefully be injected into the overall financial equation of the project;
- while all-season roads into, across or through the watershed beyond Ban Navang would destroy the basis for the present biodiversity offset arrangement and should be explicitly precluded in the negotiated documents, an open debate on the alternatives (using the reservoir as a road, utilizing shallow draft jetboats to go up the rivers in the wet season, cutting access tracks for motorcycles and small four-wheel drive vehicles?) should be urgently undertaken to facilitate access for introducing social and economic programmes;
- a World Heritage site nomination for the NBCA and its contiguous northern extension, possibly linked with equally valuable biodiversity sites in Vietnam, should be prepared at an early date;
- investigation should be undertaken of the potential for negotiating carbon sequestration and/or debt for nature deals to help protect the NBCA further, to provide further incentives for GoL to conserve the area on a longterm basis and to help fund the national network of NBCAs;
- the concept of the NNT NBCA being linked up to other NBCA's and thus forming the basis for a national park along the Annamite chain should be further developed;
- appropriate technology techniques should be investigated to provide solutions to service needs in the NBCA communities (eg micro/micro hydro devices, fuel efficient stoves);
- donor assistance should be sought to build a permanent EIA-capacity in the GoL system.

## 5. BUILDING INTERNATIONAL CONSENSUS ON THE PROJECT

The WB sought advice from the IAG on 'steps to be taken to build international consensus' on the proposed project. The IAG notes the WB's implicit assumptions here that the project should and will go forward and that it should desirably do so with the greatest possible international support. We would comment that in the light of the wide spectrum of opinion globally on the desirability or otherwise of constructing large dams, a comprehensive consensus on proceeding with this or any other large dam project is unlikely. As in the case of seeking a wide consensus among environmentalists on the sustainable use of wildlife, the endeavour is doomed to failure. However, an open, transparent and intensive debate on the big issues will at least have the merit of illuminating the dark corners of the controversy and may even bring those at opposite ends of the spectrum to a degree of understanding of the position of others.

The WB has recently taken an innovative step on this front in co-convening with IUCN a representative workshop on the future of large dams in general.

This meeting of dam builders, funders, environmental scientists and environmental economists, and NGO activists opposed to large dams, proposed that an independent team of experts should be commissioned to study the impacts of large dams on economies, the environment and communities and come up with some new guidelines and standards for the WB and developers. This has been agreed to by the WB President.

Some illuminating findings should emerge, which will be a contribution to the wider debate on the future of large dams.

In the specific case of the Nam Theun 2 proposal, the putting together by the WB of the present International Advisory Group itself represents an opportunity to begin to create in a minor way a consensus among a representative grouping of people from around the world. The Group would simply note that there is little doubt that the WB has a credibility gap on large dams, that this is based on past performance and that the most frequent criticism has been that the WB and its associated private sector developers have seldom adhered to the WB's own criteria and Operational Directives in implementing projects.

The IAG would also point out, however, that the most likely alternative to the WB being associated with planning and implementing large dam projects is the undertaking of such work by developers with little or no international monitoring and few guidelines or restrictions. The preferred option even for fervid opponents of dams seems obvious.

That said, the WB remains on occasion more opaque in its activities than it needs to be. It should endeavour to lift its game further in terms of achieving generic public education and participation (both are difficult to achieve in Laos). If the proposal goes ahead, then a vigorous public education campaign both internally in Laos and in influential world capitals would be worthwhile. At the same time the WB should not expect to achieve a comprehensive consensus on the desirability of building a large dam such as this one in a country like Laos.