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MULTILATERAL DEVELOPMENT BANKS' ASSISTANCE PROPOSALS

Likely to Have Adverse Impacts on
the Environment, Natural Resources,
Public Health, and Indigenous Peoples

October 2012

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This report does not prejudice the U.S. Government’s position where final versions of projects or policies have not yet been considered by the Multilateral Development Bank (MDB) Executive Boards; rather, it serves as a record of USAID’s environmental and social review and monitoring of MDB projects and policies.

Multilateral Development Banks' Assistance Proposals Likely to Have Adverse Impacts on the Environment

Introduction

The U.S. Agency for International Development (USAID) submits this report entitled, "Multilateral Development Banks' Assistance Proposals Likely to Have Adverse Impacts on the Environment, Natural Resources, Public Health, and Indigenous Peoples," in compliance with Title XIII of the International Financial Institutions (IFI) Act, as enacted in Section 537 of Public Law 100-202. These provisions instruct USAID to report to Congress on proposed and current Multilateral Development Bank (MDB) projects, and other assistance proposals likely to have adverse impacts on the environment, natural resources, public health, or indigenous peoples.

This report covers a six-month period (February 2012 through July 2012) and provides information regarding USAID's performance of its tasks as assigned by Title XIII of the IFI Act to the Committee on Appropriations, the Committee on Foreign Affairs, and the Committee on Financial Services of the U.S. House of Representatives, as well as the Committee on Appropriations, the Committee on Banking, Housing and Urban Affairs, and the Committee on Foreign Relations of the U.S. Senate.

Title XIII directs USAID to collaborate with other U.S. Government (USG) agencies to review MDB assistance proposals to determine whether the proposals will contribute to the borrowing/project country's sustainable development. The reviews address the potential adverse effects of proposed projects on the environment, natural resources, public health, and indigenous peoples. USAID and partner reviewing agencies have the responsibility for making recommendations, including proposing alternative measures, which could eliminate or mitigate adverse impacts. After evaluating MDB proposals, USAID undertakes an affirmative investigation of selected projects that may have substantial adverse impacts, and the resulting information is made available to interested members of the public. USAID provides its findings from this process to the U.S. Department of Treasury and to Congress.

USAID/Washington continues to work with its regional bureaus and field missions, as well as other USG agencies, including the Department of Treasury, the Department of State, the Environmental Protection Agency, and the U.S. Executive Directors' Offices at the MDBs to complete the following tasks:

- Provide adequate attention to priority MDB projects;
- Engage with project sponsors, MDB staff, civil society, and communities affected by MDB projects; and
- Engage early in the proposal process with project countries, sponsors, and MDB staff.

MDB Project Review

MDB projects with the potential for adverse environmental and social impacts are initially identified by USAID field missions, USG agencies, and/or nongovernmental organizations (NGOs). The criteria for selecting identified MDB projects for review include consideration of the following project characteristics:

- Potential adverse impacts on the environment, natural resources, public health, and/or indigenous peoples;
- Ability to serve as a model within a sector for similar projects;
- Potential adverse environmental and social cumulative impacts; and
- Potential to undermine USAID's sustainable development activities.

The MDB projects selected by USAID, in consultation with other USG agencies, for review during the period covered in this report are either candidates for financing or have been approved for financing by the African Development Bank (AfDB); the International Bank for Reconstruction and Development (IBRD), the Multilateral Investment Guarantee Agency (MIGA) and/or the International Finance Corporation (IFC)—collectively, the World Bank Group (WBG); the Asian Development Bank (ADB); and/or the European Bank for Reconstruction and Development (EBRD). Projects reviewed in this report fall into one of the three following categories:

1. MDB Public Disclosure Projects. Projects for which respective MDB institution(s) have publicly released final Environmental Impact Assessments (EIAs) prior to Board¹ vote, and/or Board vote is expected within the next six to nine months and/or whose potential adverse environmental and social impacts have been identified by USAID/Washington, USAID field missions, other USG agencies, and/or NGOs. This report includes the following projects in this category:

- Tanzania – Road Sector Support Project II
- Nepal – Kabeli A Hydropower Project
- Laos – Nam Ngiep I Hydropower Project

2. MDB Post-finance Monitoring Projects. Project(s) previously reviewed by USAID with potentially significant environmental and social impacts, or projects discussed during Tuesday Group.² These projects are referred to in this report as Post-finance Monitoring Projects. This report describes the following project in this category:

- Vietnam – Song Bung 4 Hydropower Project

3. MDB Watch List. This list includes: 1) technical assistance or studies that have the potential to lead to additional MDB or private sector financing for project development and/or 2) projects under discussion with various MDBs, but where a management decision has not

¹ The Board of Executive Directors (the Board) is made up of representatives of the Bank's member countries that appoint them or elect them.

² Tuesday Group is a monthly meeting of NGOs and USG agencies, co-chaired by USAID and the Bank Information Center, to address MDB project loans and policies.

been made to bring these projects into the MDB formal appraisal process and/or 3) the Board date is pending. Projects in this category include the following:

- Multinational: Study on the Ouessou-Bangui-N'djamena Road and Inland Navigation on the Congo, Oubangui, and Sangha Rivers
- Mozambique – Regional Transmission Project
- Nepal – Tanahu Hydropower Project

USAID's experience has shown that waiting for MDBs to release final project EIAs can reduce the opportunity for identifying, reporting on, or recommending mitigations of potentially negative environmental and social impacts. Therefore, to increase the effectiveness of the oversight process, USAID continues to pursue earlier engagement in the MDB project proposal process. However, earlier engagement does not preclude the need to interact with relevant stakeholders during the later stages of the project proposal process when all of the environmental and social documentation is available.

MDB Policies, Guidelines, Strategies, and Action Plans. In addition to reviewing MDB projects, USAID takes part in the Department of Treasury-led interagency process of reviewing MDB policies, guidelines, strategies, and action plans. Since these MDB Policies, Guidelines, Strategies, and Action Plans ultimately provide the framework for MDB-supported projects, it is important that they contain adequate provisions to ensure environmentally and socially sound projects. This report provides information on the following safeguard review:

- World Bank – Performance Standards

Report structure: This report is divided into the following sections:

Section 1: MDB Public Disclosure Projects

Section 2: MDB Post-finance Monitoring Projects

Section 3: MDB Watch List

Section 4: MDB Policies, Guidelines, Strategies, and Action Plans

Annex: Laos – Nam Ngiep I Hydropower Project (May-June 2012)

Vietnam – Song Bung 4 Hydropower Project (April 2012)

wildlife crossings), the project should have also included an **alternative route and an alternative design to avoid or minimize elephant movement impacts**.

Improvement of the road will increase traffic (per objective of the proposal) with resulting impacts (direct, indirect, and cumulative) which need to be analyzed to be able to determine whether using the same road track will actually result in environmental and social impacts or if there is a better alternative track. Without this baseline data, an assessment of alternatives and the impacts cannot be sufficiently analyzed.

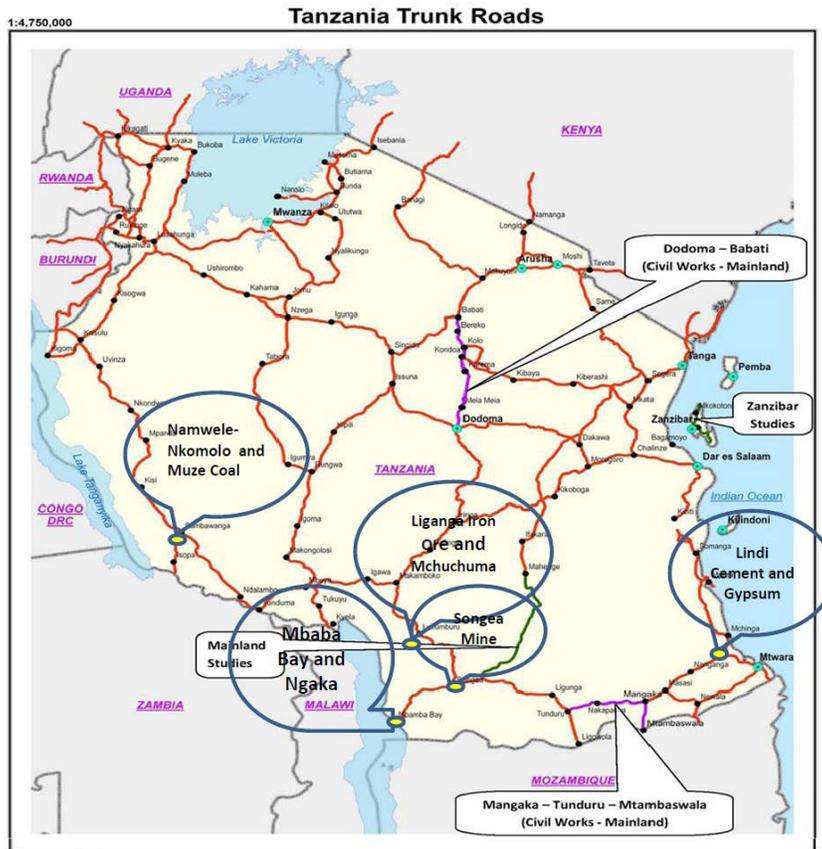
Baseline data and impact analysis

- Some studies in Africa have shown that elephant populations decrease in the presence of roads due to highly effective poaching networks that utilize these roads. Negomano is often mentioned as the transit point of ivory going to China, so further opening of this area could significantly increase the conduit of illegal trafficking. Additionally, the majority of ivory coming out of central Africa (e.g. DRC) is transited through Tanzania and Mozambique to either Malaysia or Thailand, with China as the final destination. The increased ability to transport via an improved road will facilitate the movement of ivory out of the country. An assessment of this potential increase in illegal trafficking is an important potential impact to be analyzed and considered.
- Increased settlement, as an indirect impact of road improvement, can also negatively impact the important ecological resource as well as introduce significant social issues such as land use, land tenure, water, security, sewage and health issues. These factors must be considered during an impact analysis. According to AfDB the route was designed to avoid impacts to cultural resources, residences, and public facilities.
- Limited baseline data on wildlife and wildlife movement limited the analysis of the impacts of the project. The ESIA stated that the road traverses (and therefore increases access to), “three wildlife protected areas: Lukwika/ Lumesule/ Msanjesi game reserve, Namiungo – Muhuwesi and Muhuwesi forest area and game reserves, but also crosses an important animal migration corridor between Lukwika - Lumesule - Selous Game Reserves in Tanzania and Niassa National park in Mozambique.” The project’s Board document continues to state “In addition speed limit sign posts coupled with a series of rumble strips and humps shall be constructed across the road where the migration route crosses the project road as well as across the game reserves.” Because the Selous Niassa Wildlife Corridor facilitates wildlife movement between the two countries, an analysis of trans-boundary impacts was expected. However, AfDB staff indicated that the road is 8-30Km from the wildlife corridor and therefore would not drive trans-boundary or migratory corridors therefore an inconsistency in baseline data exists. Additional baseline data is necessary to document if trans-boundary impacts should have been assessed.

Cumulative Impacts Analysis (CIA)

- The project did not have an overall cumulative impact assessment of reasonably foreseeable actions that analyzed the impact of the whole road.

- The project documentation states that “In addition, upgrading the road will compliment: (i) The development plans of Mtwara Development Corridor (MtDC) including extraction of huge coal reserves in the area, which is endowed with energy generation, particular thermal (coal), and development of export oriented investments in forestry including agro processing”. Therefore, the continued development of the corridor is a foreseeable given the push and the reasoning for the road being increased economic development. The AfDB provided a map of the mining areas in Tanzania that shows that there is no mining near the road (see below) and there are other roads that could be used for coal mining traffic. Nevertheless, the MtDC and the potential coal extraction, as stated above, are reasonably foreseeable activities within the zone of influence and should be assessed with other project impacts. Based on these plans a more expansive, receptor-specific, cumulative impacts analysis of temporal and spatial boundaries should be completed to fully estimate environmental impacts and to design appropriate mitigation measures.



Mitigation Measures

- The project’s Board document states that a number of project-related impacts were not “mitigated at the project level” (e.g., increased poaching, abuse of road corridor, increased crime rate, increased pressure on natural resources). The AfDB indicated that the Tanzanian government is taking measures to ensure surveillance and enforcement to prevent poaching and illegal trading of ivory, skin and bush meat and that it is providing capacity building assistance for government officials on monitoring the

environmental impacts of this project, changes in land use and wildlife issues that arise from the project. Finally, there are ongoing efforts to increase awareness of income generating activities for communities to reduce dependence on wildlife and to increase wildlife personnel to ensure proper management of forest resources. Given the likelihood that greater poaching will occur as a result of the proposed action, greater government and AfDB actions will be required and should be identified as a mitigation measure and budgeted commensurately.

- Resettlement contributes to additional pressures on wildlife and forest resources. The increased settlement and commensurate demand for timber, food, agricultural land clearing, and general development should be mitigated to avoid and minimize the increased habitat loss expected by this resettlement.
- Some mitigation measures to slow speed such as speed bumps and speed limits are included to avoid collisions with wildlife, and wildlife-friendly measures are being used during construction (e.g., banning pits). The Worldwide Wildlife Fund (WWF) and Selous – Niassa Wildlife Protection Corridor (SNWPC) are involved in monitoring wildlife and enforcing safety measures, with involvement of local communities. However, these measures do not address inhibition of elephant movement during the day and night over the more substantial road. Those impacts should be mitigated and documented in the ESIA.

Current Status

The Treasury and the Office of the United States Executive Director (OUSED) raised these issues with the AfDB and subsequently followed up with technical discussions. USAID did not participate in these discussions, however, Treasury reports that the AfDB clarified that they did not believe a separate cumulative impact assessment was necessary because the development plans for the corridor are unlikely to proceed and there are no mines or other extractive industries near the roads. Staff also explained that mitigation measures are in place to minimize harm on wildlife and to address increased poaching, abuse of the road corridor, increased rate of crimes, and increased pressure on natural resources. Treasury received assurances that bank staff would closely monitor the project's environmental and social impacts directly through their field staff and also fund an independent consultant to supplement the environmental monitoring and mitigation work to be done by the local agency. Based on AfDB responses, Treasury directed the Office of the United States Executive Director to support the operation and asked staff to closely monitor the project's environmental and social impacts and pay specific attention to implementation of the environmental mitigation measures and resettlement, as well efforts to help minimize trafficking and promote safe use of roads.

Nepal

◆ Kabeli 'A' Hydropower Project

Project Description

The Kabeli 'A' Hydropower Project (KAHEP), in addition to seven other hydropower projects, was identified for future development by the Government of Nepal (GoN) following a screening and ranking process of 138 candidate hydropower projects during the period of 1996-1997. On January 31, 2010, the GoN and the project company, Kabeli Energy Limited (KEL—majority-owned by Butwal Power Company of Nepal), signed the Project Development Agreement. Other partners in the project include SCPHI (Canada) and APP (China).



The KAHEP will be developed in the Kabeli River Basin in Panchthar and Taplejung districts in eastern Nepal. The Kabeli River Basin is 870 km², and the Kabeli River is about 57 km in length. The Kabeli River is one of the tributaries of the Tamor River, a major river of the Sapta Koshi Basin which drains into the Ganges River.

The Hydropower project is designed as a peaking run-of-river power plant, with a dam that has a proposed installed capacity of 37.6 MW for domestic use. The dam site is about 5.6 km upstream of the confluence with the Tamor River, and within the jurisdiction of the Amarpur Village Development Committee. The dam will consist of a 14.3 m high and 60 m long gated barrage with an intake, settling basin, and an underground settling basin on the left bank of the Kabeli River near Dhuseni village. At the full supply water level of 575.3 m, the pondage area will cover a surface area of 10.6 ha. The length of the pond at full supply level will be 1.385 km, with an average width of 78.44 m. The plant has been designed as a six-hour peaking plant, but at reduced capacity of 26.5 MW during the month of the lowest mean monthly flow. The peaking is planned for twice a day with two hours in the morning and four hours in the evening.

The power from the proposed project will be transmitted via the Kabeli Corridor 132 kV Transmission Line, which is under implementation by the Nepal Electricity Authority with financing from the World Bank (WB) International Development Association (IDA). This transmission line also will provide transmission capacity for the power generated by other hydropower projects in the Kabeli corridor that are being developed by other independent power producers. These generation and transmission projects represent a linking of eastern Nepal to the national power grid.

Depending on the availability of funds (approximately \$10 million) and the need (still to be determined), the project could include provision of access to electricity for residents in the project area who presently do not have access. However, per-household connection costs are

likely to be very high due to the sparse population and the likely low demand of households in the area. Project documents indicate that these factors will limit the scope of the electrification that can be carried out with IDA funding.

The proposed WB IDA financing package also includes technical assistance funds to the Ministry of Energy (MOE) to allow it to perform its technical due diligence on behalf of the GoN. This will include MOE engaging supervisory engineers and other experts, as required, to carry out oversight of the implementation of the hydropower project. Funds may also be used for technical assistance related to the Kabela River strategic basin level planning studies, or cumulative impact assessments, in areas consistent with the Department of Electricity Development responsibilities.

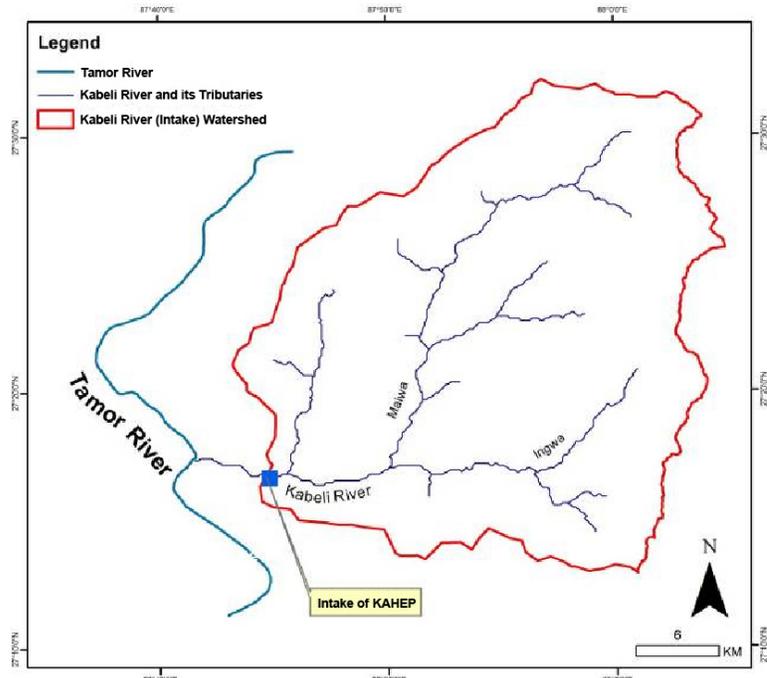


Figure 1 Map of Project Area and Watershed

Financing

Total project costs: approximately \$86 million. This project is proposed for co-financing by the WB and IFC. The proposed WB IDA financing is \$40 million for the hydropower plant and \$2 million for the Ministry of Energy component. If approved, the IDA funds are expected to finance the civil works contracts implemented by Kabeli Energy Limited. IDA funds are unlikely to be used for land acquisition or to finance the Social Action Plan or Environmental Management Plan. The proposed IFC investment is expected to about \$20 million.

USAID Review

USAID’s review of the ESIA is based on Title XIII, Section 1307 provision regarding the adequacy of the EIA. The following concerns were noted:

Alternatives Analysis

A substantive, no action alternative, used as a benchmark for impact analysis against other alternatives, was not available. The EIA did consider alternatives to hydropower such as thermal, atomic, wind and solar power as well as different types of hydropower technology. However, because of the lack of a no action alternative, impact analysis lacked a benchmark by which options could have been compared.

Baseline Data/Environmental Assessment

Environmental Flows

The baseline data appears to be sufficient to determine the required environmental flows needed to maintain ecosystem services and other downstream functions. For example:

- Based on the information provided, it appears that during dry periods the flow of the Tamor River below the powerhouse will approximately double for a few hours and then recede and then double again. Some data is presented on natural water flow at the intake site and dewater point, but it is not clear if this reflects Tamor River flows.
- The EIA states that the extreme minimum flow release (10% of the minimum mean monthly flow from November to May) will “maintain the shallow water ecological requirement for the fish species of the Kabeli” and points to other rivers where extreme minimum flows have been sufficient to maintain river fauna. Thus, they state that the extremely low e-flow release is sufficient to maintain the needs of the river. This is accurate if the fish leave the river during the period of the e-flow release and in fact the EIA states that the low flow in the dry season serves as a “potential trap to adult fish” and that existing fish species of the dewatered area will have “little area to hide and are easily trapped by fisherman” which would significantly affect the fish population and ultimately those that survive on sustainably fishing for their livelihoods. A prohibition on fishing in low flow months was the recommended mitigation measure again, potentially affecting fisheries and down-river livelihoods.
- The EIA describes the concepts of environmental flows and some potential methods for managing flow. For example, based on the Tenant Method, a minimum flow of 5.17 m³/s is derived, but the document states that this level of flow would make the project economically infeasible; instead, “as a trade-off” they recommend 10 percent of the lowest monthly flow (0.86) because this would optimize power generation to make the project commercially viable, comply with the Hydropower Development Policy 2001 provisions while also maintain the shallow water ecological requirement for fish species of the Kabeli Khola. There is no analysis of what is being traded to optimize economic goals. The EIA goes on to state that “there is a need of detailed assessment of the environmental flow requirements taking into consideration the water requirements for 1) recreations, cremation, and religious bath 2) aquatic ecology, particularly fish and 3) river morphology”. Given the minimal data available, it is difficult to conclude that the ecological requirements for fish species are maintained at the 10% flow and that the 10% flow is sufficient for sustained fisheries.
- More information about the fish resources, and the extent to which people below the power plant depend on the Tamor River for their livelihoods would be required to directly assess both environmental and socio-economic impacts of the change in flow.

Fisheries

- The EIA states that “some of the water above the barrage will be stagnant” and some fish may be “driven away from the reservoir stretch to upstream sections which will constrain feeding, rearing and spawning grounds. As very little is known about the aquatic life of Kabeli, it is very difficult to predict the extent of impact.” This lack of data impedes the ability to predict the environmental impact and makes assessing the proposed tradeoff of

10% of the lowest monthly flow (the level of flow required to make the project economically feasible) uncertain.

- There is inconsistent information and insufficient data on migratory fish to determine whether proposed mitigation measures will be effective (e.g., the proposal of fish ladders for migratory species and impacts of fish movement once they are in the reservoir area); there is no mention of larval fish entrainment into the tunnel, likely a significant mortality issue. The EIA acknowledges that there is no information on whether the fish ladder will work (e.g., they do not have any information on whether important migratory fish have the physiological capacity to use fish ladders) and provides information for other alternatives, e.g., fish trapping, and trucking, fish lock alternatives and open water stocking alternatives which are relatively cheap and do not require high investment costs compared to the fish ladder but the effective and efficient management of this alternative is unknown.
- The EIA acknowledges future upstream dams would result in an almost continuous sequence of dam-reservoir-dam configuration, therefore raising the question of whether a fish passage (if appropriate studies show it will be successful) could even be effective, given the sequence of proposed upstream dams.

Kanchenjunga Conservation Area

- The EIA states that the Conservation Area is 25 km outside of the project influence area. However, there appears to be no analysis to determine whether the potential exists for indirect and cumulative impacts to the Conservation Area.

Cumulative Impacts Analysis (CIA)

There are seven other hydropower projects in various stages of consideration to be developed in the Kabeli River Basin. Three projects will be on the Kabeli River with the remaining on tributaries. All of these projects are located upstream of the KAHEP. In total, it is anticipated that these projects will eventually make possible the transmission of approximately 170 MW.

- The project's CIA cannot adequately assess impacts because of the lack of baseline data for both the proposed action and the nearby actions. (e.g., regarding fisheries) and as such does not provide adequate information for decision makers. To understand the significance of the impacts from the project to the Kabeli River an analysis of the Kabeli River's role and importance in the overall river basin and watershed is required.
- The CIA is based on the Valued Environmental/Ecological (VEC) components of the project development site and states that the exercise was limited to the project development site only and did not have coverage expanding to the Kabeli basin. As such, it is unclear whether the geographic and temporal scope of the assessment was appropriately defined particularly if baseline data used to define the zone of influence was not available.
- The assessment states that the impacts of the increased numbers of hydropower projects in the basin will have a long term cumulative effect on the VEC components of the basin as a whole. Although several of these projects are under construction, the assessment states that there are eight potential hydropower projects in the Kabeli Basin, including Kabeli, but that detailed status reports on the other seven projects were not available. Information on various project layouts, land requirements, etc., for the other potential hydropower projects in the CIA should have been available and used in the CIA.

- There is no substantive discussion concerning past, present, and future actions (e.g., agriculture, deforestation, roads) other than hydropower that could impact the same VEC components as hydropower facilities other than stating these interactions are very complex.

Associated facilities

There is a nearby transmission line, financed by World Bank that ensures successful transmission of power from the Kabeli A and other hydropower plants in the region. This transmission line is therefore an associated facility and impacts from the line should be assessed.

Current Status

The WB Board is expected to consider this project in late 2012. The USG is waiting for Bank staff's response on the initial questions and comments, and will follow up on with an interagency meeting with World Bank staff to discuss them.

Nepal

Bridges Improvement and Maintenance Program

This is one of the first two projects to be supported under the Program-for-Results (PforR). PforR is a new World Bank financing instrument that was approved by the WB's Board of Executive Directors on January 24, 2012. PforR is designed for the World Bank's client countries to link the disbursement of funds directly to the delivery of defined results. The goal of PforR is to improve the design and implementation of their development programs and achieve lasting results by strengthening institutions and building capacity. The project is not Category A.

Though this project has been awarded, subprojects are being designed so it bears watching with an eventual affirmative investigation because the focus of this project is on (i) planning, technical design, and quality control of bridges; (ii) major and minor maintenance of existing bridge assets; and (iii) new bridge construction. Specific activities with potential significant environmental impact include:

- major maintenance of 233 bridges, totaling 10,900 meters in length
- minor maintenance of 95 bridges, totaling 3,500 meters in length
- construction of approximately 121 new bridges, totaling 6,000 meters, which includes 95 bridges (5,000 meters) in existing Department of Roads backlog of bridge construction and 26 new bridges (1,000 meters)

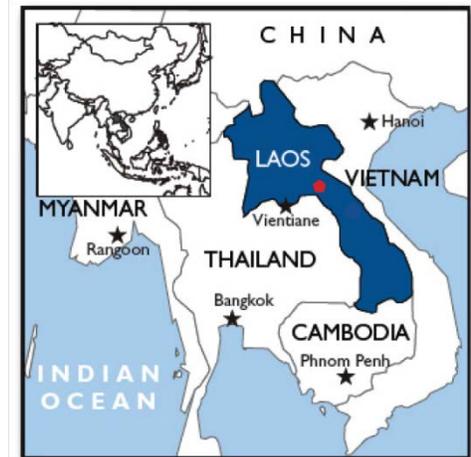
The total project cost is \$147 million, with the GoN financing \$87.6 million and the WB financing \$60 million. ADB, JICA, China, and India are financing Nepal's remaining bridge program. The World Bank approved financing for this in June 2012.

LAOS

◆ Nam Ngiep I Hydropower Project

Project Description

The Nam Ngiep I Hydropower Project (NNI) is located on the Nam Ngiep at the confluence with the Mekong, about 7 km upstream of Pakxan (Bolikhamsay province) and approximately 145 km from Vientiane. The Build-Operate-Transfer (BOT) project will sell electricity to both the Electricity Generating Authority of Thailand (EGAT) and EDL (Electricite du Laos) under a concession agreement provided by the GoL and a Power Purchase Agreement with EGAT and EDL. NNI Power Co. Ltd. will be established under a shareholder agreement in order to sign loan agreements with lenders and develop the project. This consortium will consist of Kansai Electric Power Co. (Japan), EGAT International (Thailand), and Lao Holding State Enterprise (LHSE, Lao PDR).



The main dam will produce 272 MW for export with the re-regulating dam producing 18 MW for domestic use. The reservoir will be approximately 70 km in length and 148 m in height. The project will connect to the Nabong substation and share the transmission lines with Nam Ngum 3. EDL will install one transmission line to connect to the grid in Pakxan. Construction is expected to begin in 2012 and commencement of operations in 2018.

It is estimated that the project will directly affect approximately 4,350 villagers and indirectly affect 13,000 villagers upstream and downstream of the dam site. Four Hmong villages will need to be resettled from the reservoir area. The four villages will be consolidated into two villages on both right and left banks of the river downstream from the re-regulating dam.

Financing

Total project costs are estimated at approximately \$180 million.

USAID Review

Although project construction has yet to start, USAID and Vientiane Embassy staff conducted a site visit to the downstream villages that will be affected by the Nam Ngiep I Hydropower Project to gain a better understanding of the environmental and social aspects of the project. This site visit was carried out as part of USAID's due diligence responsibilities under the International Financial Institutions Act, Title XIII, Section 1303(a)(3). In preparation for the site visit, USAID also reviewed the draft EIA (released January 2012). The review was based on Title XIII, Section 1307 provision for adequacy of EIAs. The following points were raised with the project sponsor and ADB management so the issues could be addressed before the ESIA is determined as the final draft. Based on conversations with ADB in Laos, ADB responded positively that USAID provided this information to staff early on in the process and planned to follow up with the project sponsor.

Alternatives Analysis

- The analysis of the “no-project” alternative provides a baseline that enables decision makers to compare the magnitude of environmental effects. This no action alternative included a small-scale hydropower plant which would not constitute a viable “no project” analysis nor an accurate baseline, as it exists prior to project initiation.

Baseline Data/Environmental Assessment

- The EIA does not present sufficient baseline data to thoroughly assess the direct, indirect and cumulative impacts of the project. Appropriate baseline data, gathered over a sufficient period of time, is required to assess the scope of impacts and to identify prevention and/or mitigation measures. Examples of inadequate baseline data include:
 - No systematic collection of data on erosion patterns and sediment discharge in the river for any of the preliminary studies. This makes it difficult to estimate accurately how the dam will affect erosion and sedimentation.
 - The terrestrial ecology/wildlife survey data used is five years old (from October and March, 2007). The EIA states that these surveys will be updated during the biodiversity surveys to identify the species that will be directly, though not indirectly or cumulatively, impacted by the project. As the data is aged and new data was not available for consideration in this EIA, the accuracy of the assessment is diminished.
 - The methodology for these wildlife/ecological surveys is not provided and it is not clear if there will be any surveys conducted downstream of the dam site.
 - There does not appear to be data to support the conclusion that the areas of the reservoir, dam, and regulation dam are not significant for wildlife migration, breeding, or feeding.

Cumulative Impacts Analysis (CIA)

- Nam Ngiep watershed has at least six planned dams that are reasonably foreseeable activities and should be considered in the CIA. Rather than analyse CI in the EIA, section 10.3 states “Cumulative and Transboundary Impacts: Given that there will also be the Nam Ngiep 2 Hydropower Project and likely other projects within the Nam Ngiep River watershed that can have impacts on the environment of the watershed, the NNHP-I Project should encourage the GOL to establish a Nam Ngiep Watershed Management Committee to coordinate all efforts that relate to the protection and management of the watershed.” While a watershed management plan would assist in the successful management of a watershed, it does not negate that fact that a temporal, spatial, geographical and resource receptor specific CIA is needed. USAID is guided by NEPA which indicates a CIA be conducted to accurately assess like adverse impacts. These standards require that projects must “take into account current and proposed development activities within the project area but not directly connected to the project.”

The USAID site visit comprised of meetings with stakeholders (e.g., government and CSOs) in Vientiane and provincial government and project-affected villagers downstream of the dam site in Bolikhamxay Province. In brief, the villagers that were interviewed were aware of the project. Villagers' perceptions of potential impacts of the project were related to the proximity and dependency of the village on the Nam Ngiep resources. Figure 2 shows the river for transport, riverbank gardens and fisheries activity on the Nam Ngiep from Ban Somseun to Ban Thaheua. A complete cumulative impacts analysis would indicate factors affecting these livelihoods. The trip report with complete findings is attached in the Annex of this report.

Current Status

The final revised ESIA and the Resettlement Action Plan are still under preparation. USAID will review the updated documents when they are released to the public. As of September 11, 2012, a Board date had not been scheduled³; however the USG interagency is waiting for responses from AsDB staff on these issues, particularly on the question of the Cumulative Impacts Analysis.

³ As of September 11, 2012 a Board date has not been scheduled.

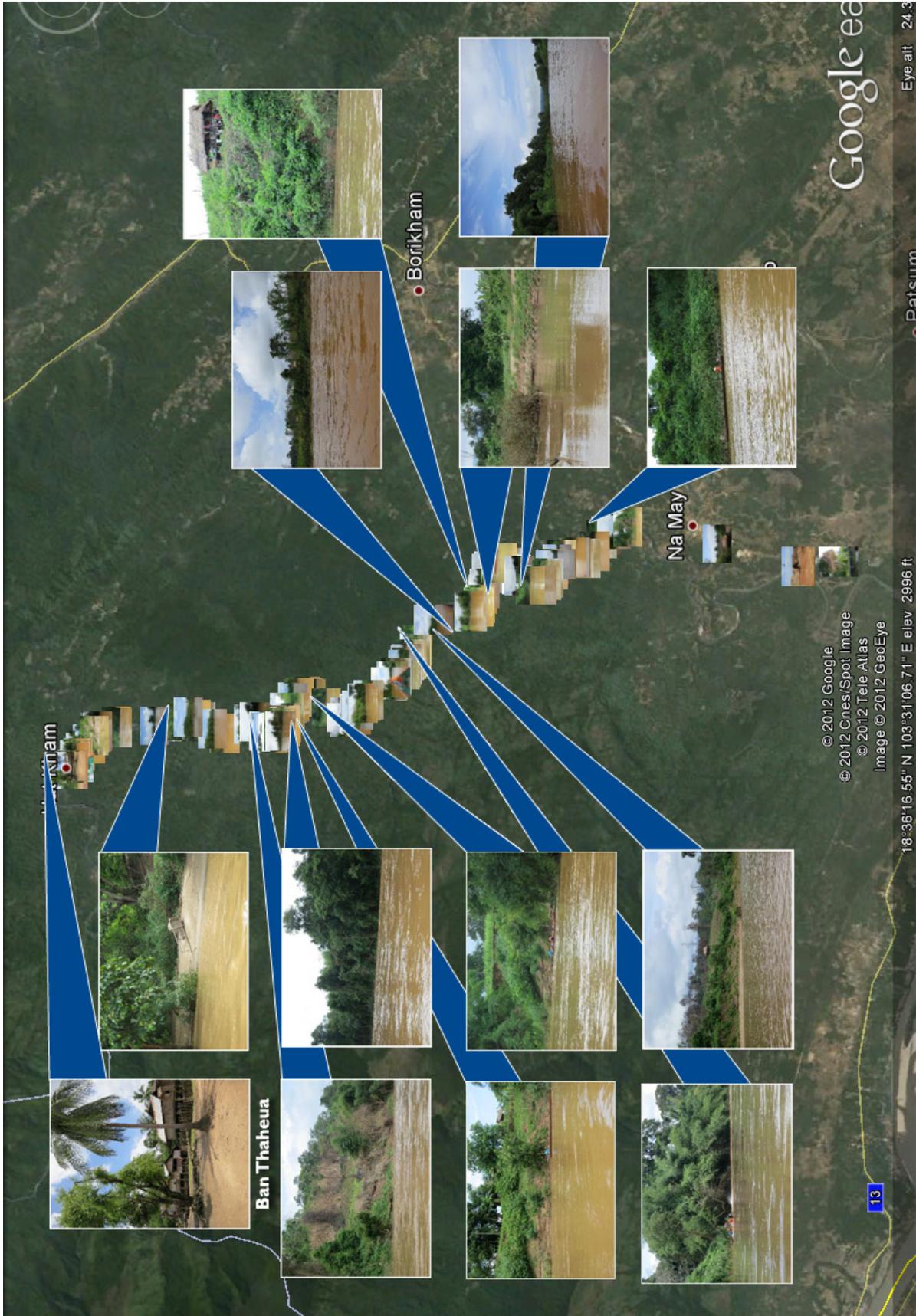


Figure 2. Photos of villagers' use of the River (including transport, riverside gardens, fishing)

Section 2 MDB Post-finance Monitoring Projects

MDB-financed projects previously reviewed by USAID that have potentially significant environmental and social impacts, as well as projects discussed during Tuesday Group, are included in this section. It should be noted that in this stage of project development, the USG has no formal leverage; in many cases, the MDB involved in the financing lacks leverage, as well, if the loan has been disbursed and paid back.

Vietnam

◆ Song Bung 4 Hydropower Project

Project Description

The Song Bung 4 Hydropower Project (SB4HPP) is located on the Bung River, in the upper part of the Vu Gia-Thu Bon River basin, and flows into the China Sea at DaNang. The Vu Gia-Thu Bon River basin is ranked fourth in Vietnam for potential hydropower capacity with at least 40 hydropower projects planned.

The SB4HPP involves the construction and operation of a 100 m dam, with a reservoir area of 15.8 km², a headrace tunnel, an underground penstock, a powerhouse, 35 km of 220 kV and 38 km of 35 kV capacity transmission lines, 20 km of access roads, 20 km of new roads to two resettlement areas, and relocation of approximately six km of Highway 14D. The installed capacity is 156 MW with two 78MW units. It is anticipated that the project will take five years to complete. Once completed, the power station will be operated between 6 a.m. and 10 p.m., which will result in large variations of downstream water levels at start up and close down of the power station. These effects will be felt up through the river's confluence with Song Cai, at a minimum.



The project is also located in the biological conservation corridor endorsed by the Greater Mekong Subregion Governments' Summit in 2005. The southern part of the Song Bung 4 project catchment is within the Song Thanh Nature Reserve. The reservoir will inundate 143 ha within the core zone. The Song Thanh Nature Reserve falls in the Central Truong Son Landscape, which is classified as a priority conservation area in the region. It also falls in the corridor of ADB's Biological Conservation Corridor Initiative (BCI), which aims to link protected areas and create forested corridors.

In 2010, Electricity of Vietnam (EVN) awarded China's Sinohydro Corporation Limited several contracts worth a combined \$92.7 million to provide engineering and civil works for the project. Construction officially started in September 2010. The Song Bung was diverted in 2011 for upper/lower coffer dam construction. At the time of the USG visit (April 2012), the

foundation of the power plant and both coffer dams were in place. It is expected that the first turbine will become operational in June 2013 with the second turbine operational in 2014.

Financing

The owner of the SB4HPP investment is the state-owned EVN. The total cost of the project is about \$250.8 million. ADB is expected to finance approximately \$170 million (73 percent of the total cost) and EVN will provide \$68 million. The ADB Executive Board approved the project on June 26, 2008. During the Board vote, the USG abstained on the grounds that environmental and social safeguards were not sufficient to mitigate and prevent the anticipated significant environmental and social impacts.

USAID Review

USAID reported on this project in the April and October 2008 MDB Reports to Congress. USAID's final review determined that under Title XIII, Section 1307 the project EIA did not meet U.S. standards with regard to "no-project" alternative analysis, baseline data, and cumulative impacts the Council on Environmental Quality's guidance on implementing the National Environmental Policy Act.

Prior to financing, the USG provided the following recommendations to ADB management to help mitigate some of the expected environmental and social impacts:

1. Prior to initiating construction, EVN will develop and implement a monitoring and financial incentive system for independent contractors to promote compliance with ADB safeguards, including any biodiversity conservation plans and any measures resulting from the Strategic Environmental Assessment (SEA) findings.
2. Prior to initiating construction, EVN will develop and disclose a conservation plan for the ecological communities potentially affected by this project, including mechanisms to 1) monitor affected aquatic and terrestrial populations of key species before, during, and after project construction and 2) adjust construction practices to protect those populations when necessary.
3. Prior to the Board vote, ADB will make publicly available the final reports of the SEA studies and EVN will incorporate findings from the SEA into project management and mitigation measures.
4. ADB will commit to monitoring and reporting to the Board on the status of implementation of the above at the first disbursement.

The ADB could not reopen negotiations on the project to formally incorporate the USG's recommendations, but said that the spirit of USG concerns would be addressed.

Subsequent to the site visit and in correspondence between ADB staff, OUSED and USAID, the ADB provided responses to these recommendations and reported ongoing developments to fulfill them.

Regarding the first recommendation, ADB staff detailed measures taken to provide adequate monitoring and financial incentive schemes for contractors. These include hiring independent

monitors, establishing an environment monitoring unit, developing a community-based conservation management plan, and implementing capacity-building programs in environmental protection for both the community and nature reserve management board. In addition, the ADB has begun a biodiversity technical assistance project and a loan project to support biodiversity conservation and offset activities.

In response to the second recommendation, ADB staff stated that an independent monitoring firm, Social Consult, is conducting regular monitoring of aquatic and terrestrial ecosystems and has found no significant impacts. The third recommendation was fulfilled, and the ADB is collecting information to enable a response to the fourth recommendation to report back to USG.

USAID recently conducted a follow-up site visit to the project area. The site visit focused primarily on the resettlement, fisheries, Song Thanh Nature Reserve, and implementation of SEA recommendations. Below are brief findings of the site visit, with additional detail in the trip report (included in the Annex of this report).

Resettlement

- The first resettlement village to be completed is the Pa Pang site for the Thon 2 village. All the homes have access to both electricity and water. The school and health clinic for the Pa Pang site was near completion with the clinic opening within the next several weeks. Full resettlement is expected to be completed in May 2012.
- Construction has started for the three remaining resettlement villages, with resettlement expected to be completed between the end of 2012 and the first quarter in 2013.
- Villagers listed positive aspects of the resettlement: new homes and access to electricity, water, a school, a clinic, and the road. The negative aspects raised were poorer land quality, limited fishing, limited land for cattle grazing, and the need to have money to buy items such as fertilizer and fish.
- There has been long-term continuity, with ADB social development staff working on the project since 2005. The village resettlement plan was developed by a multidisciplinary team, including villagers, over a two-year period. Staffs have been placed in villages for community outreach as part of the project's extension services. Full scale livelihood programs have not yet started.

Fisheries

- The Song Bung Management Board (SBMB) is aware that a comprehensive study has not been undertaken on the impact of the dam on fisheries. SBMB believes that this type of a study is too large for the project to undertake and is working with the ADB to develop a new project to look at fisheries.

Song Thanh Nature Reserve (STNR)

- The SBMB has agreed to provide support to help with forest protection activities that will be needed due to the increase in access to the area as a result of the reservoir. As requested by the STNR management, the SBMB will provide

equipment, including one boat, to support the protection of the nature reserve. Between 9 and 12 rangers will be needed to work at the patrol station, which will be located at the top of the reservoir.

- Contrary to the SEA recommendations of re-establishing forest connectivity, the 143 ha of core area inundated will be offset by additional reforestation within the core area of STNR. The Provincial Forest Department will determine the location for the reforestation.
- The area will have at least 2500 construction workers. Although the workers are located in the buffer zone, unless mitigation measures are put in place and enforced there will be a significant impact on the STNR. Impacts already being seen include firewood collection, increased fishing, and small wildlife hunting, but there has not been any firm evidence of workers engaging in these activities.

Strategic Environmental Assessment

The final SEA report recommended six key mitigation measures for the Song Bung 4 hydropower project. Stakeholders, during discussions, indicated that there appears to be little progress in fulfilling those recommendations.



Figure 3: Locations visited during the Song Bung 4 site visit.

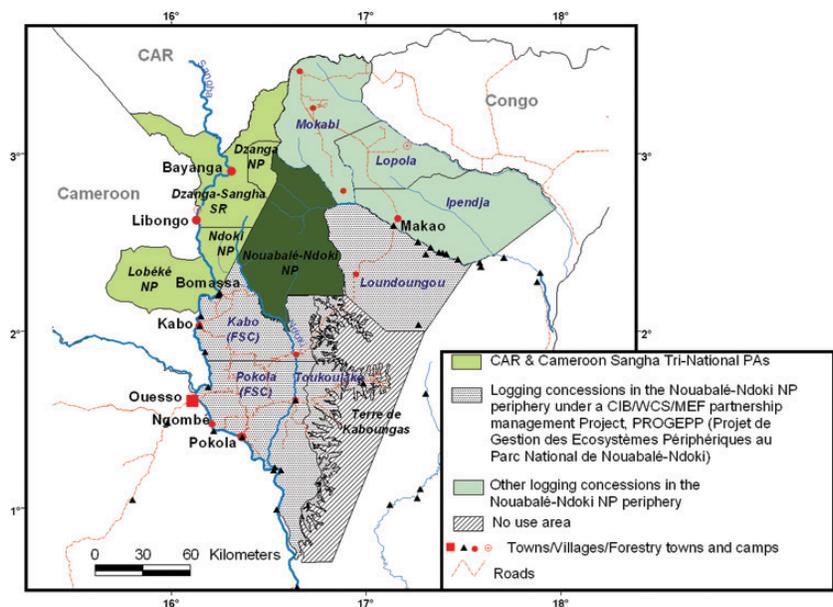
Section 3 MDB Early Project List

USAID continues to monitor the status of new projects and those that were included in previous MDB reports. Updated information is provided when available.

Multinational: Study on the Ouesso-Bangui-N'djamena Road and Inland Navigation on the Congo, Oubangui and Sangha Rivers

USAID continues to engage with the US Executive Director's office at the AfDB on this project following the USG site visit in October 2011 (reported on in the April 2012 MDB Report to Congress). In brief, the AfDB approved a technical assistance (TA) grant of approximately \$11.8 million to Chad, the

Democratic Republic of the Congo (DRC), and the Republic of Congo on December 1, 2010, to support a study of how to increase regional transport networks. US supported the grant, which is funding the technical, environmental, and economic feasibility of developing the Ouesso-Bangui-N'djamena road and waterways on the Congo, Oubangui and Sangha Rivers, in order to facilitate transport along the Kinshasa/Brazzaville-Bangui-



N'djamena corridors. The countries are considering both a road and waterway transport network in this region given the density of forests and waterbodies. The study's objective is to determine the optimal paths and then determine what component should be funded through a future AfDB operation. The study will run through 2013 and will look at developing sections of the Ouesso-Bangui and Bassangoa Mbaïkoro road; and how to improve the navigation on the Congo-Oubangui-Sangha Rivers. Procurement of contracts will follow AfDB rules.

Office of the United States Executive Director and USAID staff have been engaging with AfDB staff to seek periodic updates on the status of the feasibility studies and various paths for the road/waterways network and AfDB staff may consider reworking the alignment of a road component on which USAID flagged some concern regarding potential negative impacts on a biodiversity-rich area and indigenous peoples.

Mozambique – Regional Transmission Project

This project was first identified as a project to follow in 2009 because the first phase concentrates on concurrent development of coal and hydropower generation as well as

building a N/S HCDC 1200 km line to transmit power to South Africa. WB proposed financing to contribute to the investment and technical assistance focused on the development of the first stage of the North-South Transmission backbone line required for the first Tete Generation project(s).

An earlier proposed Board date of May 2011 was pushed back to an undetermined date in 2012/2013.

Nepal – Tanahu Hydropower Project

In 2010, the ADB Board of Directors approved a Technical Assistance grant to Nepal for a detailed engineering study for the Upper Seti Hydropower Project. The Study is to provide consulting services for each of two major engineering design specifications: (i) civil works on geological risk assessments, and (ii) facilities on technical and hydrological risk assessments. It is estimated to cost \$2.95 million, including consulting services, administrative costs, and contingencies. The USG supported the grant, while noting the need to incorporate findings from environmental and social studies of the watershed into the engineering studies.

As of January 2012, the project's preparatory technical assistance and another project preparatory facility for detailed engineering studies were being implemented. Last year, the project was officially renamed to "Tanahu" hydropower.

USAID is planning to undertake a site visit to the project and meet with stakeholders in October 2012 to gain a better understanding of how environmental and social studies of the watershed are being integrated into the engineering studies. The EIAs are available online and the Board date is scheduled for November 29, 2012.

Section 4

MDB Policies, Guidelines, Strategies, and Action Plans

In addition to reviewing MDB projects, USAID takes part in the Treasury-led interagency process of reviewing MDB policies, guidelines, strategies, and action plans. Since these documents ultimately provide the framework for MDB-supported projects, it is important that they contain adequate provisions to guarantee environmentally and socially sound projects.

World Bank – Performance Standards

In June 2012, the World Bank Board of Executive Directors approved the proposed application of the IFC's Performance Standards (PS), to be called the World Bank Performance Standards, to private sector projects supported by IBRD/IDA, in place of the standard World Bank environmental and social safeguard policies applicable to IBRD/IDA investment lending. This approach is intended to facilitate Bank support for projects that are owned, constructed and/or operated by the private sector, and enhance policy coherence and cooperation across the World Bank Group.

The IFC Performance Standards (PS) are part of the IFC's effort to support its clients in doing business in a sustainable way. The IFC PS established requirements on how to identify, avoid, mitigate, and manage environmental and social risks and impacts, including client obligations with respect to stakeholder engagement and disclosure. These standards were approved by the IFC Board as the environmental and social policy standards for IFC clients in 2011 and went into effect on January 1, 2012. They include the following eight standards: 1) Assessment and Management of Environmental and Social Risks and Impacts; 2) Labor and Working Conditions; 3) Resource Efficiency and Pollution Prevention; 4) Community Health, Safety, and Security; 5) Land Acquisition and Involuntary Resettlement; 6) Biodiversity Conservation and Sustainable Management of Living Natural Resources; 7) Indigenous Peoples; and 8) Cultural Heritage.

The change in policy was intended to respond to concerns about the dual systems of World Bank and IFC/MIGA environmental and social safeguard policies in Public-Private Partnerships (PPPs), a key element of the WBG's infrastructure business. According to the World Bank, this constraint had been repeatedly identified by both external and internal sources as a significant impediment to PPPs. The World Bank estimates that between 10 and 15 IBRD/IDA projects will come under this new approach each year, a significant number of which are likely to be private sector operations implemented jointly with IFC or MIGA. In addition, where there is significant government involvement in the project's implementation and/or responsibility for managing impacts, the Bank's Safeguard Policies would still apply to those areas where the private sector cannot or should not assume the obligations.

Although the new approach should facilitate private sector financing of infrastructure, it raised several important concerns on environmental and social safeguards. During the interagency review process, USAID provided technical comments on key substantive differences between

the World Bank's standard safeguard protections and the IFC's PS (and, therefore, the proposed World Bank Performance Standards) provided below.

In response to these concerns, Bank management provided assurances to U.S. Department of Treasury that in practice, this approach would provide the same degree of protection as currently applied under the World Bank safeguard policies, including with respect to protections for biodiversity and critical habitat.

The U.S. Department of Treasury secured a commitment by Bank management to report back to the Board on implementation of the proposed approach in the context of the Safeguard Policies review. In addition, the World Bank agreed to develop operational procedures (subject to Inspection Panel review) to address certain related issues, such as categorizing these projects and posting environmental assessments. Finally, IFC management committed to provide a dedicated training program for relevant staff, including on supervision of projects and to an increase in resources and staff at the IFC to environmental and social risks.

These assurances were a critical factor in the Department of Treasury's decision to support the proposal for WB to adopt IFC standards when working with private sector IBRD/IDA projects.

Technical Comments Provided By USAID

Fundamentally, the scope of an EIA is narrower under IFC's PS than under WB safeguards. Specifically:

- Alternative analysis—there is not a requirement for the “no-project” scenario in the IFC's PS, in spite of the fact that this is a fundamental element for an effective EIAs and provides a baseline that enables decision makers to compare the magnitude of environmental effects of the action alternatives. Additionally, contrary to the proposal, there is no rationale for the conclusion that the “no-project” alternative analysis is better suited to the public sector.
- Associated facilities are not defined in the WB's safeguards. Although it is defined in the IFC's PS, its definition is restricted resulting in an EIA likely to have a restricted scope of assessment.
- Cumulative impacts are not specifically defined in the WB's safeguards but in the description of the analysis of baseline data the ESIA must assesses the dimensions of the study area including the “current and proposed development activities within the project area but not directly connected to the project”. The definition used in the IFC's PS is more limited, potentially resulting in a restricted scope of assessment for the EIA.
- The WB's safeguards for critical and natural habitats are more protective than IFC's PS, though not all encompassing. Below are some examples of where WB safeguards are more protective than IFC PS:

- The WB states that it supports and expects borrowers to apply a precautionary approach to natural resources management. The IFC's PS do not contain any reference to applying a precautionary approach which states that caution with human health and the environment should be practiced in the context of uncertainty.
- The definition of critical habitat is more thorough under the WB's safeguards than the IFC PS 6.
- The WB provides a clear definition, with examples, of what constitutes significant conversion. The IFC's definition requires assessment of "measurable adverse impacts" and requires that programs "not lead to a net reduction..." but instead a "net gain..." These assessments are not achievable within the context of an IFC project, and therefore can become subjective measures that, consequently, are less protective than WB safeguards.
- The WB provides further protections to critical habitat by not financing plantations that involve any conversion or degradation of critical natural habitats, including adjacent or downstream critical natural habitats. This protection is not included in the IFC's PS.
- The WB provides for developing the capacity of national and local institutions if there are capacity problems for the implementation of conservation and mitigation measures associated with a project. This type of activity is inherently a government function and not a private sector function, although IFC shifts the burden onto the private sector without capacity support for government institutions to provide adequate oversight.

Additional USAID concerns include:

- The WB's role for an expert advisory panel is broader and more encompassing than what is required under the IFC's PS.
- The responsibility for assessing and managing environmental and social risks is shifted to the private sector in the IFC's PS. The objectives of the private sector could result in a conflict of interest.
- There is no discussion with respect to the expected capacity of the public sector (environmental regulatory agency, land use institution, etc.) to not only provide oversight for the project but to also manage additional issues related to the private sector project. In addition to the level of capacity required there is no discussion as to how that capacity would be enhanced through public sector support and sequencing that support in relation to project development and impacts. There is also no discussion on financing streams for the public sector to take on these additional responsibilities.

- The proposal identified that the World Bank needs to strengthen its supervision of PS, but there is no timeline/budget that provides an indication of how this will be accomplished as projects move forward.

Unless the Safeguard Policy Update/Consolidation process is delayed by a number of years, it is difficult to understand how the lessons learned from the use of the PS for WB operations will feed into the Safeguard Policy revision processes in a timely manner.

Annex-Trip Reports

Laos – Nam Ngiep I Hydropower Project (May-June 2012)

Vietnam – Song Bung 4 Hydropower Project (April 2012)

Laos – Nam Ngiep I Hydropower Project Trip Report (June 2012)

Prepared by Leslie Johnston

USAID/Washington, Bureau for Economic Growth, Education and Environment (E3)

USAID/E3 and Vientiane Embassy staff conducted a site visit to the Nam Ngiep I Hydropower Project to gain a better understanding of the environmental and social aspects of the project. This site visit was carried out as part of USAID's due diligence responsibilities under the International Financial Institutions Act, Title XIII, Section 1303(a)(3), which requires USAID to review MDB projects with potential adverse environmental and social impacts. The site visit was conducted between May 29 and June 7, 2012.

This report summarizes information obtained from the site visit; meetings with stakeholders (e.g., government and Civil Society Organizations) in Vientiane, provincial governments, and project-affected villagers downstream of the dam site in Bolikhamxay Province; and documents available to the public. The meetings focused primarily on the environmental and social aspects of the project. The report does not reflect the views of USAID or of the United States Government (USG), and USAID has not substantiated all comments.

This report is divided into the following sections:

Section 1. Nam Ngiep I Hydropower Project

- Background
- USAID review of draft Environmental and Social Impact Assessment

Section 2. Lao Government/Hydropower Sector

- Department of Water Resources
- Department of Environment and Society Impact Assessment
- Department of Forest Resources Management
- Department of Livestock and Fisheries
- Environment Protection Fund

Section 3. Village meetings

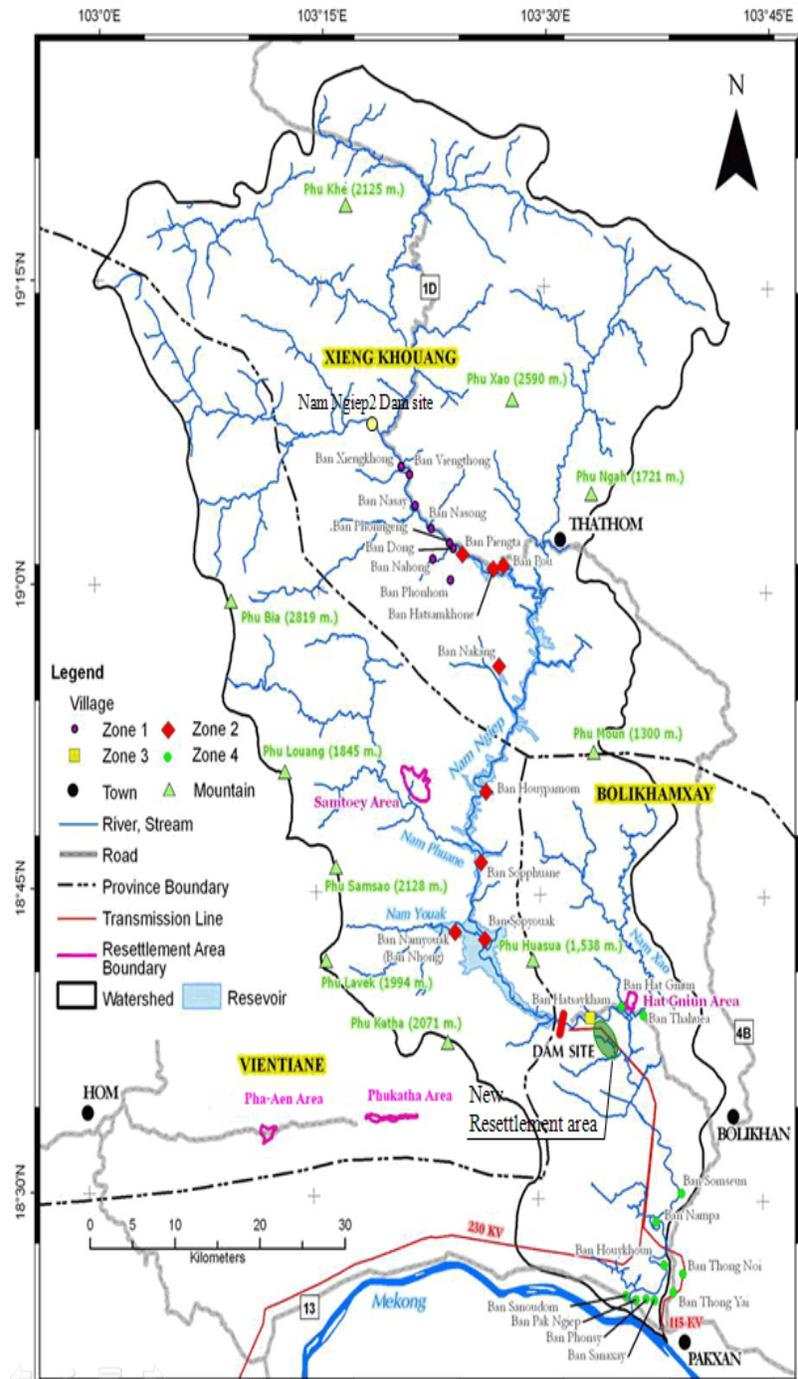


Section I. Nam Ngiep I (NNI) Hydropower Project

Background: NNI is located on the Nam Ngiep, with the confluence with the Mekong about 7 km upstream of Pakxan (Bolikhamsay province), approximately 145 km from Vientiane. The project is a Build-Operate-Transfer (BOT) project that will sell to both the Electricity Generating Authority of Thailand (EGAT) and Electricite du Laos (EDL) under a concession agreement provided by the Government of Lao PDR and a Power Purchase Agreement with EGAT and EDL. NNI Power Co. Ltd. will be established under a shareholder agreement in order to sign loan agreements with lenders and develop the project. This consortium will consist of Kansai Electric Power Co. (Japan), EGAT International (Thailand) and Lao Holding State Enterprise (LHSE, Lao PDR).

The main dam will produce 272 MW for export and the re-regulating dam will produce 18 MW for domestic use. The reservoir will be approximately 70 km in length and dam height at 148 meters with an effective head of 129 meters. The project will connect to the Nabong substation and share the transmission lines with Nam Ngum 3. EDL will install one transmission line to connect to the grid in Pakxan. Construction is expected to begin in 2012 and commencement of operations in 2018.

Resettlement: It is estimated that the project will directly affect approximately 4,350 villagers and indirectly affect 13,000 villagers upstream and downstream of the dam site. Four Hmong villages will need to be resettled from the reservoir area. The four villages will be consolidated into two villages on



both right and left banks of the river downstream from the re-regulating dam. The locations of the relocation sites were chosen because the Hmong did not want to be relocated in the Lao host villages that were initially proposed.

It is recognized that the resettled villagers' livelihoods will be significantly changed from a mountainous, subsistence-based existence to a market-based one. The soil pH is very acidic at the new resettlement sites, and will need to be treated. Year-round irrigation will be available and with treatment the land should be able to produce 4.8 tons/hectare (t/ha) of rice versus the current production of 3.5 t/ha. The resettlement villagers will have access to 400 ha of paddy land, 400 ha/crop land, and forests preserves for non-timber forest products (NTFP) collection. Their houses will be connected to electricity from Pakxan. In addition, schools and a medical clinic will be provided. Demonstration homes have been built.

It is thought that the women's livelihood won't change as dramatically as the men's since the women are currently working the paddy fields while the men's activities are hunting and collecting NTFP in the mountains. The resettlement action plan is still under development and will be released to the public when it is completed. Reservoir fisheries are proposed to help replace river fisheries for the resettlement villages. The reservoir will be 70 km in length and the villagers will be able to raise fingerlings, with the assistance of the developers, for release into the reservoir.

The GoL wants the project's Resettlement Management Unit (RMU) to function for 5 years after commencement of operations. During this period of time, three targets will be monitored: 1) poverty line; 2) average annual income; and 3) increase of present income. If there are still issues with resettlement villages meeting these targets after the five-year period, then the RMU will be maintained to continue assisting the resettled villagers.

USAID review of draft ESIA: USAID reviewed the draft ESIA (released in January, 2012) prior to the site visit. The review was based on the Title XIII, Section 1307 provision regarding the adequacy of EIAs. In brief, the following points were raised with the project sponsor and ADB management so the issues could be addressed before the ESIA is finalized:

- The no-project alternative lacks a robust analysis. The no action scenario is a cornerstone of the EIA process and provides the baseline that enables decision makers to compare the magnitude of the environmental effects of the action alternatives.
- Additional baseline data for the necessary assessment of direct, indirect, and cumulative impacts analysis is required. Appropriate baseline data, gathered over a sufficient period of time, is required to assess the scope of impacts and to identify prevention and/or mitigation measures. Examples of inadequate baseline data in the EIA include:
 - There was no systematic collection of data on erosion patterns and sediment discharge in the river for any of the preliminary studies. This makes it extremely difficult to estimate accurately how the dam will affect erosion and sedimentation.
 - The terrestrial ecology/wildlife survey data is five years old (from October and March, 2007) although the EIA states that these surveys will be updated during the biodiversity surveys to identify the species that will be directly impacted by the project and unable to adapt to the new environment. This updated data is

not in the EIA. Additionally, it appears only direct impacts will be analysed, neglecting both indirect and cumulative impacts. The methodology for these surveys is not provided and there does not appear to be any surveys conducted downstream of the dam site.

- There does not appear to be data to support the conclusion that the areas of the reservoir, dam, and regulation dam are not significant for wildlife migration, breeding, or feeding.
- There does not appear to be any data to support the conclusion that construction of the dam and inundation of the reservoir will cause minimal disturbance to wildlife in the area.
- Absence of cumulative impacts analysis: Cumulative impacts must be evaluated along with the direct and indirect effects of each of the project alternatives.
 - In the Nam Ngiep watershed, there are at least six dams planned which would include temporal, spatial, and geographic boundaries that are resource receptor specific.

Section 2: Lao Government /Hydropower Sector

Hydropower development is a significant element in Lao PDR's development strategy as the scale of hydropower investments and their importance to the economy is increasing. There are approximately 75 hydropower projects in various stages of planning, construction, and operation, including eight dams proposed for the Mekong main stem. When the World Bank (WB) and Asian Development Bank (ADB) co-financed the Nam Theun 2 hydropower project, part of the financing rationale was that their entry into the hydropower sector would elevate the environmental and social standards of all hydropower projects in Laos—existing, under construction, and future. The 2005 National Policy on Sustainable Hydropower was seen as the key component in elevating hydropower environmental and social standards. The Hydropower Policy has had limited success in its implementation. One key institution that was created through the Policy was the Water Resources and Environment Agency (WREA) which reported directly to the Prime Minister's office. In July 2011, WREA was merged with parts of the National Land Management Authority, the Geology Department, as well as the Protection and Conservation Divisions of the Department of Forestry, to form the Ministry of Environment and Natural Resources (MONRE).

There are currently 20 hydropower projects under development, with two per year slated for completion over the next 10 years. Currently, three-fourths of the government's revenue comes from commodities and, over time, 80 percent of the government's revenue will be from hydropower. Currently the utilization of hydropower is less than optimal because there is no national grid and, as a result, efficiency is lost. The ADB is supporting a 500 KV backbone grid to allow for better efficiency and utilization of power and to allow for market trading of power that links into the Greater Mekong Subregion grid.

Department of Water Resources

The Department of Water Resources (DWR) within MONRE is comprised of six divisions with 40 staff total. The technical divisions include training and data information, regulation, and river basin management.

The DWR is currently involved in the following activities:

- Developing a capacity building strategy to cover the period from 2011 to 2015.
- Providing technical input into the ESIA Department during project reviews.
- Monitoring and Data Collection
 - Monitoring activities are coordinated with provincial and district authorities. Usually the teams are sent out when requested by local authorities. The DWR does not have the budget to conduct routine monitoring missions. However, there are exceptions when the WB and/or ADB are involved in providing support. For example, the WB/ADB will provide routine monitoring for the Xe Bang Fai basin. There are no provisions in the Concession Agreements for projects to provide resources to MONRE to conduct routine monitoring missions.
 - The project does contribute resources for watershed management associated with the EIA, but these resources are limited and are not specific to the budget, which does not allow for routine monitoring.
 - MONRE does have a water lab for analysing water samples collected during the monitoring trips.
 - There is a data collection plan for the tributaries, to be conducted by local teams once resources become available.

The Water Law (1999) is outdated and is being revised with the support of the WB and the ADB. The new Water Law is expected to be approved by 2013. The DWR believes that revising the water law is very important because there are a number of projects (e.g. mining, hydropower, plantations) in Laos that depend on water resources and, thus, the new law is expected to guide proper water management and coordination among the various sectors. The new law will also contain a provision on environmental flows that WREA had been working on in previous years.

River Basin Management Committees

- The decree establishing River Basin Management Committees (RBCs) was approved two years ago. The RBCs fall under the responsibility of the DWR. The RBCs' main roles are as a coordinating body among water users and as a mediator for water conflicts. Both of these roles will be reflected in a draft action strategy plan on water usage, quality, and quantity. To date, there have only been minor conflicts due to drought and flooding issues but the RBCs are looking towards the future in terms of potential conflict over water quantity/quality that may occur given the growing number of water users in each basin.

- An Integrated Water Resources Management policy was developed for approval last year but was rejected by the GoL. The scope of the proposed policy was too broad and consequently could not be applied. For example—large-scale projects would be under the purview of national authorities and small-scale projects would fall to the provincial authorities, but “large-scale” and “small-scale” were not defined. The RBCs are learning as they go along and are working with consultants and undertaking study site visits.
- RBCs budgets are limited. In principle, the budget should come from MONRE but this has not been occurring, so the RBCs are exploring other ways of receiving funds, such as creating a fund to collect contributions from projects developing in the watershed. However, whether this idea is practical will depend upon the outcome of the ADB technical assistance (TA), which is currently examining the royalty taxes of the GoL to determine if they can be used to finance RBCs activities.
- At this time, the RBCs’ policy is to work on projects in river basins that have already been developed, instead of working with undeveloped basins to determine the best development approaches. Management regimes are being developed for five river basins. The WB and ADB are supporting Nam Ngum, Nam Theun-Kading, Xe Bang Fei, and the Xe Band Hieng. Other river basins where RBCs need to be established include Nam Ou, Nam Ton, Nam Ngiep, Sekong, and Sedong. However, at this time, there are no resources for their establishment. DWR is looking for external support to develop RBCs for these basins.
- The ABD has been providing support to the Nam Ngum River Basin Management Committee for a number of years. The Committee has yet to begin functioning. However, at this time, there are currently up to five staff on the Nam Ngum RBC with plans to include more from the provinces. Backgrounds vary among staff and currently there is only one staff member with a water resources background.

Key challenges for DWR include:

- Limited resources and capacity development for staff
- Timely approval of the revised water law and promulgation of regulations/sub-regulations for its implementation.
- The ability to effectively manage river basins since there are many sectors that are developing within a single basin with overlapping water interests (e.g. mining, hydropower, plantations). The limited budget to support river basin management for both tributaries and the main stem further impedes effective management of the basins.

Department for Environment and Society Impact Assessment (ESIA) – The ESIA Department previously housed in WREA is now located in MONRE. During the site visit, we were not able to meet with ESIA staff but the points below were raised during our other conversations with various stakeholders.

- It is reported that the ESIA Department is having problems using resources, even the small amounts (\$20,000-\$25,000) provided by the WB.

- The Government of Finland-funded consultant is still providing technical support to ESIA and is working hand-in-hand with the Department on developing social and environmental obligations, training, and checklists.
- The ESIA Department is looking for support from the International Finance Corporation (IFC) for negotiation training to improve environmental and social obligations and capacity building.
- Although the 2005 National Policy on Sustainable Hydropower stated that EIAs shall be made available to the public, EIAs (with the exception of WB/ADB projects) are still not available. One reason provided is that the GoL is still trying to establish the policy and structural mechanisms to be able to release the EIAs to the public.
- Only the EIA summaries have to be translated into Lao. However, the full EIAs are still in English which is difficult for Lao staff to fully understand and is an impediment to their technical review process.

Department of Forest Resources Management – Forest management has also been reorganized and is now under two separate ministries. The conservation and protection forest components have been moved to MONRE but production forests still are under the Ministry of Agriculture and Forestry (MAF).

- Current GoL goals are to increase forest cover to 65 percent by 2015 and to 80 percent by 2020. Current forest cover is approximately 50 percent, which also includes production forest. There are approximately 500,000 hectares (ha) of plantations in Laos.
- Between 1980 and 2011, 2.5 million ha of forest have been rehabilitated but 3.9 million ha still remain to be rehabilitated. Of the 3.9 million ha, 2 million are in protection forests.
- The Department's goal is to pursue economic and social development of the local people as an integral component of forest management.
- The New Department lacks the funding required to perform the needed forest surveys which then inform the master plan.
- The Prime Ministerial Decree on Protection Forests requires that projects pay for replanting trees that are removed. Additionally, it will be important to manage upstream forests to protect the watershed and water resources. In this respect, two hydropower projects have been studied, Nam Mang and Nam Leuk, and based on the lessons learned from these projects, a Payment for Ecosystem Services (PES) system may be proposed to the GoL. This will be based on Vietnam's PES system, which has an annual target of 200,000 kip/ha.
- Concession Agreements only mention the catchment area and do not mention upstream forest protection. This results in hydropower projects supporting only the catchment area, despite the need to ensure effective livelihood solutions upstream of the catchment area, so that villagers will not encroach into the forest.

- The Department will establish and provide staff at small stations in charge of patrolling the forests and working with villagers.
- To accomplish the Department's objectives, a special national steering committee staffed with concerned national ministries and provincial authorities will be established. The objectives will be implemented in the field through the establishment of field units to manage agriculture and forestry. It is expected that for the initial 4-5 years there will be substantial spending to cover land use planning, demarcation for catchment areas, and development of forest regulations. After this period of time, it is expected that the expenses will decrease. These activities will be done on a project-by-project, not basin-wide, basis.

Department of Livestock and Fisheries – The Department of Livestock and Fisheries of the Ministry of Agriculture and Forestry (MAF) is comprised of three technical areas—the livestock, veterinary, and fisheries (aquaculture) divisions. The fisheries sector was only recognized as important by the Lao government in 2000, when the Living Aquatic Resources Research Centre (LAReC) was established. LAReC is mainly supported through the MRC.

- The Fisheries division has eight staff, and there is a request to the government for seven more. The challenges facing the fisheries division is lack of capacity development in the sector more broadly. The fisheries sector is not developed within Laos, which is reflected by the fact that there is no faculty of fisheries at Lao National University. Students need to go to other countries (e.g. Thailand) for training (Asian Institute of Technology (AIT)). The problem with going to Thailand is that the classes are in English and, unlike Vietnam, which provides training before going to AIT, Laos only has a three month bridge program in BKK.
- MONRE does not have any tools to help assess fisheries impact in EIAs. LAReC is involved in EIA reviews/inputs.
- The value of fisheries is always undervalued. Energy sells at a higher price, but the intrinsic value of fisheries is higher than electricity.

Environment Protection Fund (EPF) – The EPF was created in 2005 through the National Policy on Sustainable Hydropower. The EPF was created as the mechanism that would receive a certain portion of the revenues from each hydropower project to support nation-wide environmental protection and conservation efforts in the country. The EPF was established with \$5 million from the ADB and \$4 million from the WB. The EPF has five windows of lending: policy implementation/capacity enhancement, community and biodiversity investment, pollution control, water management, and sustainable land management. Since the establishment of the EPF, more than 200 sub-grants have been given out in three provinces (Bolikhamsay, Khammouan, and Savannakhet) that are pilot areas supported by the WB.

The EPF is managed by 17 staff, including a director. In addition to providing grant money, EPF is also involved in the following activities:

- Through a WB TA activity, the EPF is working with the Ministry of Energy and Mines on revising the National Policy on Sustainable Hydropower. Since the 2005 policy came into

effect, a number of the policy's provisions have never been implemented—for various political and technical reasons. For example, the EPF has not received funds from hydropower projects, because a decision has never been made as to the portion of revenue each hydropower project should contribute. In addition, the GOL has not yet determined whether the contribution should come directly from the project's revenue or from the royalties and taxes paid to the government. This issue is further complicated by the fact that the Concession Agreements do not include provisions for this payment. As part of the policy revision, the TA is examining the royalty taxes to determine whether these taxes can be used to support the EPF. At this point, all revenue collected by the Ministry of Finance goes directly into the national budget. The hydropower policy is being revised and is reported to be in its second draft, though it has not been released to the public for comments.

- Priorities for EPF activities are driven by the provinces and international donors. The priorities primarily focus on high-profile projects, which explain why there is so much emphasis on Nam Theun 2 and its associated provinces, as opposed to the Nam Ou watershed, which has a proposed cascade of eight hydropower projects in an area with a population of ethnic minorities and a level of biodiversity equal to that of Nam Theun 2. Other EPF activities include:
 - Providing capacity to the ESIA Department,
 - Providing resources for creating the River Basin Management Committees,
 - Working with MONRE to determine how to receive Nam Theun 2 resources for environmental and social activities,
 - Working on developing guidelines for public involvement, and
 - Preparing a plan for road construction through the Nam Et Phou protected area, a critical landscape for tigers.
- EPF is a semi-autonomous government entity, so it can manage its own budget. However, there is nothing in its mandate for monitoring projects and ensuring compliance with Environmental Management Plans.
- EPF is trying to establish a Social Impact Management Unit that will be responsible for project-affected areas and resettlement. It is important for this Unit to be integrated into a GoL agency at the provincial level, since there is not a national level ministry that is specifically accountable for social impacts. As part of this process, the EPF staff visited a Chinese project to understand its approach to resettlement issues and its methods for responding to resettlement concerns. Based on this visit, it is thought that the Chinese approach could be a model for the proposed Social Impact Management Unit. Currently, EPF provides small grants to district/provincial authorities to solve grievances. One common element with the project's involuntary resettlements is that the change from a subsistence-based livelihood to one that is market-based is a significant and very difficult challenge. This difficulty is recognized and a strategy needs to be developed that is not only top-down but also bottom-up, with strong community ownership.
 - During discussions, several stakeholders raised concerns about Nam Theun 2 resettlement since apparently Nam Theun 2 Resettlement Management Unit (RMU)

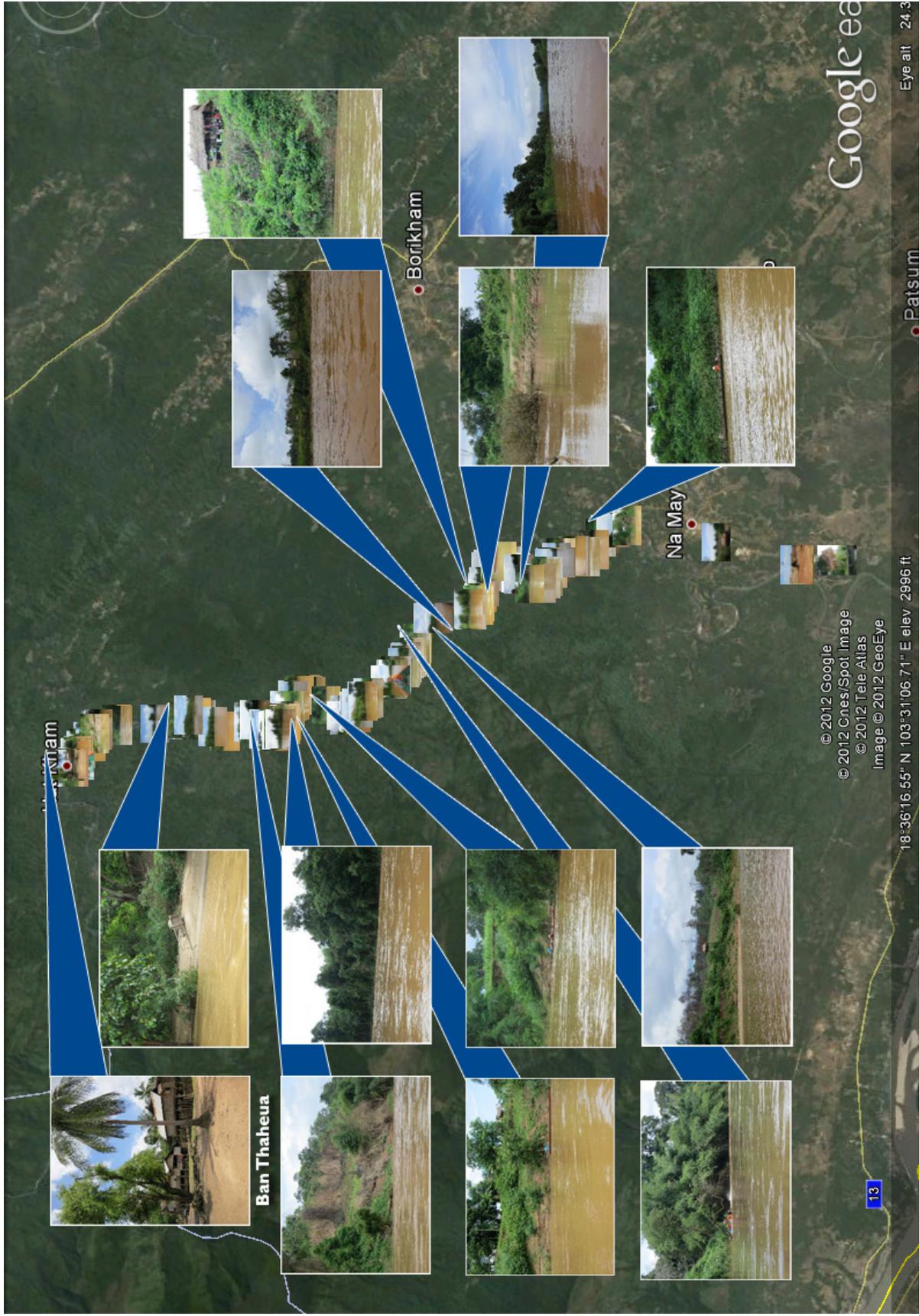
has completed its mandate. However, problems still remain and these grievances need to be resolved. One example provided concerned the livelihood development projects, which have not yet transferred knowledge of reservoir fisheries to resettled communities.

- There are also a number of complaints regarding livelihood development with Nam Ngum 2 resettlement communities.

Environment/Social Funds –

Since the EPF was created, there have been a number of new funds proposed to be supported through projects' revenue—e.g. hydropower plants, and mining projects. In addition to EPF, there are the following funds:

- The Forest Protection Decree 38, which creates the Forest Resource Development Fund. Seven sources (e.g. individuals, companies) of revenue can contribute to this fund for forest management activities. It was reported that the fund is supposed to receive one percent of total hydropower income.
- The Natural Resource Fund was raised in discussions but no details were provided. The mining industry pays a natural resource fee whereas the hydropower industry does not. There are discussions within MONRE concerning the best approach to managing these three separate funds, such as combining them into one Fund with separate windows.



Ban Thaheua

Ban Thaheua

Borikham

Na May

Patsum

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18°36'16.55" N 103°31'06.71" E elev 2996 ft

Eye alt 24.3

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Section 3 –Village meetings

All of the villagers we met with were aware of the Nam Ngiep I project. Based on discussions, it appears that villagers living closer to the river were more dependent upon its resources than villagers who lived farther away.

Village 1 –

Officials have previously come to the village to discuss the project. They explained to the villagers that they would not be able to use the Nam Ngiep River for consumption in the future and that the fish population will be reduced. As part of compensation, the project will provide the village with a water well. Fishers from this village routinely catch from 1.5 to 5 kg fish/day. The Nam Ngiep is fished all year round although it is more difficult to fish during the rainy season, because of the high water levels. Although there were no specifics, villagers said that fish migrate beyond their village while going up the Nam Ngiep. The catch is primarily for consumption but is also sold to the market when the catch is high. Villagers were not concerned about the impacts of the project on fisheries, because their village is also close to the Nam Pa, a tributary of the Nam Ngiep, which they will still be able to fish.

The villagers also have riverbank gardens to grow vegetables. They are aware that their riverbank gardens will be impacted, but they believe they will be able to set up new gardens next to their homes. However, they do not think these gardens will be as productive as their riverbank gardens because the riverbank soils are enriched during the floods. To compensate, they will need to use dung to improve the soil. The project will compensate villagers for their loss of riverbank gardens for 1-3 years until they adapt to the new garden. Villagers grow both upland and lowland rice. They will still be able to grow rice when the project is completed.

One villager felt that there were two other villages that will be more impacted than their village. However, details were not provided believe

Village 2 –

This village was moved from close to the Nam Ngiep to their current location 15 years ago. The reason for the move seemed to be a combination of the GoL policy of consolidating villages and the flooding that occurred every year. The fishers still depend on the Nam Ngiep for fish; they fish daily using nets. Their catch is usually not enough for both consumption and to sell to the market. There are periods of time when fish is purchased from the market. They have observed that the fish population in the Nam Ngiep is reduced compared to past years. There are other rivers in the area and they were aware those rivers could also be fished. The village also uses a well for water instead of the river. They have known about the proposed dam for at least four years.

Village 3 –

The villagers depend on the Nam Ngiep for fisheries and vegetables. Some of the villagers have riverbank gardens. Fishing occurs primarily during the dry season (January-April) when the water level is low. During the rainy season, the fish are found in the rice fields.

It is also during the rainy season, when the Mekong floods, that the waters back up into the tributaries and floods villagers' rice fields. Some of the villagers believe that when the dam is built it will be more dangerous for the villagers because of increased flooding. The villagers had

heard that when the Theun Hinboun Dam had to release water during storms, many downstream villages were flooded.

The project owner has come to the village to discuss the project. This village is further away from the Nam Ngiep and will not be affected. They also have many other places to fish in addition to the Nam Ngiep.

The villagers, from the villages discussed above, mentioned that two other villages would be more affected. One village because they have a lot of buffalo that are watered from the Nam Ngiep, and the other village which is about one km from the river, which has many riverbank gardens.

Vietnam – Song Bung 4 Hydropower Project Trip Report (April 2012)

Prepared by Leslie Johnston

USAID/Washington, Bureau for Economic Growth, Education and Environment (E3)

USAID/E3 and Hanoi Embassy staff conducted a site visit to the Song Bung 4 Hydropower Project to gain a better understanding of the environmental and social aspects of the project since construction began in 2010. This site visit was carried out as part of USAID’s due diligence responsibilities under the International Financial Institutions Act, Title XIII, Section 1303(a)(3), which requires USAID to review MDB projects with potential adverse environmental and social impacts. The site visit was conducted between April 23 and 27, 2012.



This report summarizes information obtained from the site visit, meetings with stakeholders (e.g., government, project-affected villagers, and CSOs) in Hanoi, DaNang, and Quang Nam Province, as well as documents available to the public. Sites visited included the dam and power station sites and one resettlement area. The meetings focused primarily on the environmental and social aspects of the project. The report does not reflect the views of USAID or the United States Government (USG), and USAID has not substantiated all comments.

This report is divided into the following sections:

Section 1. Project Information

Section 2. Site Visit

- Government of Vietnam (GoV) oversight
- Resettlement
- Fisheries
- Song Thanh Nature Reserve
- Strategic Environmental Assessment
- USG Pre-financing Recommendations

Section 3. ADB Responses

Section I. Project Information

The Song Bung 4 Hydropower Project (SB4HPP) is located on the Bung River, in the upper part of the Vu Gia-Thu Bon River basin, and flows into the China Sea at DaNang. The Vu Gia-Thu

Bon river basin is ranked fourth in Vietnam for potential hydropower capacity with at least 40 hydropower projects planned.

The SB4HPP involves the construction and operation of a 100 m dam, with a reservoir area of 15.8 km², a headrace tunnel, an underground penstock, a powerhouse, 35 km of 220 kV and 38 km of 35 kV capacity transmission lines, 20 km of access roads, 20 km of new roads to two resettlement areas, and relocation of approximately 6 km of Highway 14D. The installed capacity is 156 MW with two 78MW units. It is anticipated that the project will take five years to complete. Once completed, the power station will be operated between 6 a.m. and 10 p.m., which will result in large variations of downstream water levels at start up and close down of the power station. These effects will be felt at least to the confluence with Song Cai.

The project is also located in the biological conservation corridor endorsed by the Greater Mekong Subregion Governments' Summit in 2005. The southern part of the Song Bung 4 project catchment is within the Song Thanh Nature Reserve. The reservoir will inundate 143 ha within the core zone. The Song Thanh Nature Reserve falls in the Central Truong Son Landscape, which is classified as a priority conservation area in the region. It also falls in the corridor of ADB's Biological Conservation Corridor Initiative (BCI) which aims to link protected areas and create forested corridors.

In 2010, Electricity of Vietnam (EVN) awarded China's Sinohydro Corporation Limited several contracts worth a combined \$92.7 million to provide engineering and civil works for the project. Construction officially started in September 2010. The Song Bung was diverted in 2011 for upper/lower coffer dam construction. At the time of the USG visit, the foundation of the power plant and both coffer dams were in place. It is expected that the first turbine will become operational in June 2013 with the second turbine operational in 2014.

It is estimated that there will be approximately 2,500 workers during the construction phase. At the time of the USG site visit, at least 300 Chinese, including 186 manual laborers, were living on the project site. According to a news report, only 50 Chinese workers have registered for a work permit.⁴

Financing: The owner of the SB4HPP investment is the state-owned Electricity of Vietnam (EVN). The total cost of the project is about \$250.8 million. ADB is expected to finance approximately \$170 million (73 percent of the total cost) and EVN will provide \$68 million. The ADB Executive Board approved the project on June 26, 2008. During the Board vote, the USG abstained on the grounds that environmental and social safeguards were not sufficient to mitigate and prevent the anticipated significant environmental and social impacts.

USAID pre-financing review: USAID reported on this project in the April and October 2008 MDB Reports to Congress. USAID's final review determined that under Title XIII, Section 1307, the project's Environmental Impact Assessment fell short of U.S. standards with regard to "no project" alternative analysis, baseline data, and cumulative impacts as measured by USAID's Regulation 22 CFR 216 and the Council on Environmental Quality's guidance on implementing the National Environmental Policy Act.

⁴ (<http://www.livinginvietnam.com/forum/component/kunena/7-vietnam-news-highlights/8965-westerner-s-not-only-illegal-workers-in-vn?Itemid=0>)

Prior to the 2008 Board vote, USAID conducted a site visit to gain a better understanding of the potential environmental and social impacts. In brief the following concerns were highlighted during that site visit:

- Stakeholders expressed concerns about whether the Government of Vietnam (GoV) had adequate capacity to oversee and monitor the project and its environmental and social impacts. For example:
 - Quang Nam Department of Natural Resources and Environment's (DONRE) capacity to oversee and monitor implementation and compliance with the project's Environmental Management Plan (EMP).
 - Song Thanh Nature Reserve management's ability to address the impacts of increased access into the Nature Reserve's core area. The proposed increase in the number of patrol rangers, guard posts, and required capacity building (including budget) for the Song Thanh Nature Reserve is inadequate given the expected indirect and cumulative impacts that the project will bring to the area.
- Reportedly, 100 percent of the project-affected ethnic minority Co Tu households fish, although the extent of dependency on fisheries both for food and income varies depending on the proximity to the river. One component of the livelihood program for resettled Co Tu is the establishment of a reservoir fisheries program. However, the potential success of this program is not supported by the data and analysis.

Details of USAID's technical review and site visit are available in the October 2008 MDB Report to Congress.

Prior to the 2008 Board meeting, the USG provided the following recommendations to ADB management to help mitigate some of the expected environmental and social impacts:

- Prior to initiating construction, EVN should develop and implement a monitoring and financial incentive system for independent contractors to promote compliance with ADB safeguards, including any biodiversity conservation plans and any measures resulting from the SEA findings.
- Prior to initiating construction, EVN should develop and disclose a conservation plan for the ecological communities potentially affected by this project, including mechanisms to 1) monitor affected aquatic and terrestrial populations of key species before, during and after project construction and 2) adjust construction practices to protect those populations when necessary.
- Prior to Board vote, ADB should make publicly available the final reports of the SEA studies, and EVN should incorporate findings from the SEA into project management and mitigation measures.
- ADB should commit to monitoring and reporting to the Board on the status of implementation of the above at the first disbursement.

The ADB could not reopen negotiations on the project to formally incorporate the USG's recommendations but said that the spirit of USG concerns would be addressed.

Section 2. Site Visit



Figure 1: Locations visited during the Song Bung 4 site visit.

Background - The Government of Vietnam is actively pursuing hydropower projects as its second largest source of power generation as part of its energy strategy. The 6th Power Development Plan (PDP) identified more than 80 hydropower projects concentrated in 9 major river basins. Government approval of hydropower projects fall into the following three classifications:

1. Very important national-level projects that meet the criteria of National Assembly are approved by the National Assembly.
2. Medium and large projects with a capacity of more than 30 MW listed in the national Power Development Plan are approved by the Ministry of Industry and Trade (MOIT).
3. Small projects that have a capacity of less than 30 MW are identified by the Department of Industry and Trade (DOIT), planned through the provincial PDP process and approved by the Provincial People's Committee (PPC) with the agreement of the MOIT.

SB4 is included in the national PDP and was approved by the MOIT. It is one of eight large hydropower projects (HPP) in the Vu Gia-Thu Bon river basin of which four are under construction. In addition to the 8 large HPP approved by the MOIT, there are an additional 60 small/medium HPP planned by the provincial authorities.

Findings: Provincial authorities identify hydropower projects based on the potential water sources and the potential contribution to socio-economic development. A preliminary EIA is done at that time but not a full EIA. Environment impacts associated with the hydropower project are considered in coordination with DONRE.

Project oversight by the GoV varies upon the level of government and the project component. In general, at the provincial level, the DOIT will provide advice on safety measures (e.g. intended to safeguard the integrity of the dam) and address local issues. The DOIT undertakes periodic monitoring every year with a team composed of provincial and local level authorities. Additionally, DOIT coordinates with MOIT for monitoring security in the area, worker safety measures, construction progress, technical standards and implementation of conditions in the project agreement. The project owner is required to hire an independent consultant to ensure safety standards are met during construction. After construction is complete, a national safety committee under the Ministry of Construction is established.

As of this writing, the Ministry of Natural Resources and Environment (MONRE) has not issued regulations requiring hydropower projects located in the Vu Gia-Thu Bon watershed to coordinate/design their construction/operations. Although it is recognized that different sponsors must coordinate, all projects are designed independently of one another. MONRE is developing guidance/regulations to coordinate dam operations in the Vu Gia-Thu Bon watershed. For example, when SB4 releases water, the timing and amount of release, needs to be coordinated with other operations downstream in order to not impact reservoirs below the release. The guidance/regulations are expected to be issued in the last quarter of 2012.

At the province level, DONRE provides coordination and participates in the decision-making process of MONRE. DONRE also evaluates the compensation to be provided to the project-affected people before it is submitted to Provincial People's Committee for approval. For example, it provides advice to the Provincial People's Committee as to the amount of land to compensate an owner. It also monitors implementation of activities to mitigate environmental impacts. Project monitoring reports are submitted to DONRE every six months. Monitoring visits are sometimes done jointly with DONRE. Stakeholders interviewed did not know whether these reports were made available to the public.

During the USAID and Embassy site visit, government officials stated that SB4 was not in full compliance with the EIA recommendations. Examples provided included replantation compensation and resettlement issues combined with the fact that there is not sufficient land area for crops. In response, a MONRE team will be sent to the province for 45 days within the next several weeks. The initial work of the team will be developing an agenda, determining which aspects of noncompliance to review and concluding with written recommendations.

Resettlement:

Background:

The Song Bung 4 dam site and reservoir will require the resettlement of four Co Tu villages (approximately 220 households, or 971 people) – Thon 2, Pa Dhi, Pa Rum A, and Pa Rum B. The Co Tu are one of the ten most isolated ethnic groups in Vietnam resulting in their own unique language and culture. Co Tu livelihood is based on swidden (slash-and-burn) agriculture, livestock, and fisheries. Villagers living along the river fish almost daily—primarily for consumption, although fish are sold if the catch is greater than what is needed for consumption.

A resettlement and ethnic minority development plan has been prepared for livelihood restoration which consists of lowland rice cultivation, livestock raising, fishery development, community forestry management, and non-farm income generation. Villagers whose lands are impacted by the project (e.g. by access roads, workers camps, and transmission lines) will be compensated for loss of productive lands, fishponds, and wet rice fields.

The project is required to comply with both GoV and ADB resettlement policies. The SB4 Management Board (SBMB) is EVN's implementing agency for implementing the resettlement plan. ADB has hired a full-time resettlement specialist to provide oversight on the resettlement process. Additionally, the Provincial People's Committee established the Quang Nam Provincial Resettlement Committee which regularly advises the Provincial People's Committee on issues related to resettlement.

Findings:

- The first resettlement village to be completed is the Pa Pang site for the Thon 2 village. This site contains a host village of approximately 25 households. At the time of the site visit, the resettlement was almost completed with between 48 and 53⁵ homes (out of 55) being finished and the remaining homes close to completion. All the finished homes have access to both electricity and water. The school and health clinic for the Pa Pang site were also near completion with the clinic opening within the next several weeks. The road from the dam site to the village is essentially completed. At the time of this report, full resettlement is expected to be completed in May 2012.
- Construction has started for the three remaining resettlement villages. At the time of the USAID and US Embassy (=USG) site visit, land clearing was completed and resettlement was expected to be completed between the end of 2012 and the first quarter of 2013.
- All of the resettlement villages practiced swidden agriculture so it is difficult to estimate the amount of land each household had prior to moving to their new location. At the Pa Pang resettlement site, each household will have a garden, 1.5 ha of land for farming and management of 8 ha natural/agroforestry. The new farm land is of poorer quality and will need to be enriched with fertilizer. In addition to the 1.5 ha of farm land, it was reported that the villagers could continue to exploit their old lands or expand their swidden practice into new forest areas if they had the capacity.

⁵ Stakeholders provided two different figures.

- SBMB will provide fertilizer and seedlings for each resettled households for three years. Additionally, each resettled person will receive 15 kg rice per month for 5 years and monetary support to purchase electricity for 1 year.
- Fisheries are a large component of CoTu livelihoods. Villagers expect that the project will offset their loss and they will be in a better situation. During construction, they can walk to their previous fishing areas (6 km, or approximately 2 hours) but when the project is completed they will have access to reservoir fisheries or their own fish ponds.
- Tensions between host and resettlement villagers are not expected. Host village land has been demarcated to avoid any potential land conflicts with resettled villagers practicing swidden or going into the forest for non-timber forest products. It is expected that the resettlement village will inquire with the host village before moving into new forested areas. The host village welcomes the resettlement village since they also benefit through improved infrastructure—e.g. roads, school, health clinic.
- The PPC, as the local administrative unit, has a responsibility to ensure that the project owner is being responsive to the resettled residents' needs. For example, when road construction to the river was moving slowly, the PPC stepped in and requested that construction be sped up. The PPC also was involved in coordinating the community consultations prior to construction. At this point in the project, the PPC is only responsible for providing oversight on the resettlement activities.
- One stakeholder raised the need for programs to be put in place to strengthen the status of women so they will have a voice and role in their own development.

Below are points raised during interviews with resettled villagers:

Villagers believe:

- Their life is better but the land is not as good as the land they left behind, so fertilizer must be used. The project will provide fertilizer for the first year. Some crops grow well, such as fruit trees (bananas), while others don't, such as sugar cane. They practiced swidden (clearing an area for temporary cultivation by cutting and burning the vegetation) in their old location but are not allowed to in the new location. The resettled residents expressed their belief that it is important for them to learn from the lowland people.
- They have been very busy building their new homes, so they have not started planting crops.
- They still go back to their old fishing areas, although they are far. However, when the project is finished they will not be able to go back. They are now eating less fish.
- The village had a total of 200 cattle in the old location which were able to graze in the surrounding forest. At the new resettlement site, cattle grazing will be restricted.
- Good aspects of resettlement include new houses, electricity, clean water, the school, the health clinic, and the road.

- Negative aspects of resettlement include poorer land, limited fishing, limited area for cattle, and the money needed to buy supplies such as fertilizer and fish. There is not a culture of saving money. It is also unclear what they will do for income to continue buying supplies and other goods.

ADB oversight:

- There has been long-term continuity with ADB social development staff working on the project since 2005. Funds from the Japan Special Fund for Poverty Reduction are being used to monitor the resettlement activities, construction of homes, in addition to other programs such as HIV education and livestock vaccinations.
- The village resettlement plan was developed by a multidisciplinary team, including villagers, over a two year period. Training for villagers will include irrigation management, plumbing, management of water from taps and developing fruit tree nurseries for markets. Staff have been placed in villages for community outreach as part of the project's extension services. Full scale livelihood programs have not yet started.
- It is recognized that it will take a long time for peoples' behaviour to change. For example, villagers are very concerned about the potential of disease spreading among their livestock since the animals will be confined to restricted spaces in comparison with their old location. Although the project is providing vaccinations, villagers are fearful to have their animals vaccinated for fear they may become sick.
- Lessons learned from Son La HPP have been incorporated into this project. For example, villagers are now permitted to have the choice to build their own homes versus having the homes built for them. As a result, many of the villagers have decided to build their own homes.
- There is recognition of the possibility of negative social changes due to outside influences—e.g. alcoholism, increased violence against women, and human trafficking. So this aspect of change is being carefully monitored.
- It is also recognized that changes in livelihoods will be significant since the Co Tu were previously living subsistence-based livelihoods in very remote villages. Therefore, there is a need for social preparation to support the villagers as these changes occur. One component of support that has been initiated is assisting women villagers to establish bank accounts for compensation payments.

Fisheries

Background: The construction of eight major and 34 minor hydropower projects within the Vu Gia—Thu Bon river system will have a significant negative impact on the aquatic ecology both upstream and downstream of the dam sites. Preliminary studies of this river system have shown that a large number of species migrate between freshwater and estuarine habitats or within freshwater. The dams will prevent these migrations, in addition to directly degrading aquatic habitats, and alter nutrient flows and dynamics. It is expected that water released from the reservoir will be nutrient deprived, cold, and deoxygenated. The environmental flow release rate for Song Bung 4 is 3.6 m³/s. This figure was achieved by the consultant calculating dry

season flows and approved by MONRE. MONRE does not have any specific regulations or guidelines for calculating environmental flows.

Based on project documentation, a household recall survey estimated that total annual catch that will be impacted by the dam is about 49,000 kg or an average of about 243 kg/household. Additionally, there are a number of villages downstream of the dam site in which fisheries will be significantly impacted. For example, a Co Tu village located downstream in DS Zone I (between Song Bung 4 dam site and close to confluence with Song Cai) is estimated to catch some 4,200 kg/yr.

Findings:

- The Song Bung Management Board (SBMB) is aware that a comprehensive study has not been undertaken on the impact of the dam on fisheries. SBMB believes that this type of a study is too big for the project to undertake and is working with the ADB to develop a new project to look at fisheries.
- The project does not provide measures to mitigate the negative impacts on riverine fisheries except the development of reservoir fisheries.
- One stakeholder reported that minerals, including gold are being extracted from the Song Bung so the water is becoming contaminated, resulting in reduced fish populations. In 2009, the river was still “fresh” and villagers used it for swimming/washing but now the river is dirty, one reason given was that this was a result of the mining operations.
- It was recommended by one stakeholder to keep one river intact to ensure sufficient water flow for fisheries. At this point, the only possibility to ensure one intact river is not to develop the Song Trang 5 hydropower project.

Song Thanh Nature Reserve

Background: Song Thanh Nature Reserve (STNR) is the largest Vietnamese protected area in the Greater Annamites. STNR encompasses 84,000 ha comprising large tracts of relatively intact forest, thus making it an important habitat for many species that require such large, remote areas. STNR has high biodiversity value with >800 species of flora; 53 species of animals, 183 species of birds, 44 species of reptiles, 21 species of amphibians, and 25 species of fish. Documented evidence of tiger footprints recently recorded from several locations in and around STNR suggests that the area could hold a reasonable number of this endangered species.⁶ Several other highly endangered species such as bears, hornbills, gibbons, and Asian elephants have also been recorded in STNR.

⁶http://wwf.panda.org/what_we_do/where_we_work/project/projects_in_depth/greater_annamites_ecoregion/about_the_area/protected_places/nature_reserves/ “Song Thanh Nature Reserve is the largest Vietnamese protected area in the Greater Annamites. This, coupled with the large tracts of relatively intact forest, make Song Thanh a vital haven for many species that require such large, remote areas. Documented evidence of tiger footprints has recently been recorded from several locations in and around Song Thanh, suggesting that the area could hold a reasonable number of this heavily threatened species.”

The SB4 project will directly and indirectly impact the STNR. The southern part of the Song Bung 4 project catchment is located within the STNR and the reservoir will inundate and fragment 143 ha within the core management zone. A bridge will be constructed across the reservoir as part of the relocation of route 14D. Indirect impacts include increased access into the nature reserve and at least 2500 construction workers located in the buffer zone.

Findings:

- STNR is divided into two management zones: the core zone which is managed by STNR and the buffer zone which is managed by the commune administration and local forest protection force.
- STNR has a staff of 38 rangers. However, to effectively patrol and manage the NR at least 60-70 rangers are required. Until staffing is adequate, they can request the forest protection forces and local police to assist in reacting to illegal incursions in the NR.
- The flooding of 143 ha of core forest area will provide increased boat access to high value timber and wildlife. Therefore, the SBMB has agreed to provide support to help with forest protection. The SBMB will provide equipment, including one boat, to support the protection of the NR as requested by the STNR. Nine to twelve rangers will be needed to work at the patrol station, which will be located at the top of the reservoir. SBMB budget also covers three phases of training (35 people per phase) for STNR, local forestry, and DONRE staff.
- There are two 25 km² monitoring plots within the STNR that are monitored twice a year with the support of World Wildlife Fund. The plots are surveyed during both dry and wet seasons for 20 days each. These surveys have been going on for the past five years. At the same time the surveys are conducted, snares are also removed from the area. Wildlife monitored include: sambar, douc langur, and gibbons. Additionally, support is provided to the STNR team to patrol the area, remove snares, and conduct some monitoring.
- Several stakeholders discussed using the two new nature reserves created for saola as a model for managing STNR. The new reserves are co-managed by the GoV and WWF. WWF hired 20 forest guards and developed the patrolling protocol. The patrols are based in ranger outposts located a three hour walk within the nature reserve and are out in the field for 22 eight-hour days a month. Unlike STNR, after one year of this system of patrolling, snares are rarely found. The area is less than STNR (12,000 ha) so the patrols are able to cover the area more effectively. Additionally, MIST (Management Information System) software, designed to service protected area management needs, is used. It is highly recommended that this system be adopted by STNR to assist in its management.
- A number of interviewees agreed that it is important for the STNR staff to receive capacity support to improve their qualifications, including foreign language training.

Biodiversity Offset:

- Contrary to the SEA recommendations of re-establishing forest connectivity, the 143 ha of core area inundated will be offset by additional reforestation within the core area of

STNR. The Provincial Forest Department will determine where the reforestation occurs.

Direct and indirect impacts:

- The area will have at least 2500 construction workers. Although the workers are located in the buffer zone, unless mitigation measures are put in place and enforced there will be a significant impact on the STNR. The Environmental Management Plan does include provisions that prohibit workers from hunting or eating wildlife. The effectiveness of these provisions is monitored by asking local people about the status of wildlife and whether they are seeing any change. We heard that impacts were already being seen including firewood collection, increased fishing, and small wildlife hunting, but to date there has not been any firm evidence of workers engaging in these activities.
- There are now two roads that increase access into the STNR core area: 1) the Ho Chi Minh highway (which cuts through the southern end of STNR) and 2) the relocation of Highway 14D. It was suggested by stakeholders that establishing forest protection stations on both roads would help minimize the impacts of both road segments.

Strategic Environmental Assessment: The ADB financed a SEA of the Quang Nam Province Hydropower Plan for the Vu Gia-Thu Bon River Basin, which was carried out in 2006 and 2007. The SEA was developed after the hydropower masterplan was approved. The project's Environmental Management Plan which was approved in March 2010 is based on the SEA recommendations. Based on the SEA, the PPC disapproved approximately 7-10 of the small/medium HPP. The SBMB is aware of the SEA recommendations and are addressing some of them. Stakeholders interviewed stated that the SEA gave very practical warnings, such as stating that the loss of forests will result in cascading impacts.

The final SEA report recommended six key mitigation measures for Song Bung 4 HPP. In brief these recommendations included:

- I. Government should consider options for the proposed community forestry interventions to be targeted to re-establishing connectivity between Song Thanh NR and the forest block to the north that is broken by the reservoir in collaboration with the ADB-funded BCI project.

USAID site visit findings (2012):

- The project is compensating for the number of trees lost. Instead of following the SEA recommendation to re-establish connectivity and expand the boundaries of the Nature Reserve to offset loss of land, reforestation will occur within the core zone. The funding goes to the district for reforestation and the PPC will decide where to plant the trees.
- Work is being started on recommendation I. However, it is difficult to find an area large enough for reforestation to offset the amount of land that will be lost due to the project. Reforestation will be done along the recommended guidelines of indigenous species plants.
- STNR is aware of this recommendation and involved with the surveys and development of the project.

2. An external expert panel should be appointed, though who would appoint this panel was unclear, to determine the likely feasibility of various options for re-establishing landscape connectivity around the reservoir, or if not feasible, for proposing alternative forest connectivity measures to enhance connectivity in the wider landscape to offset the specific impact of the hydropower project.

USAID 2012 site visit findings:

- Stakeholders interviewed had no knowledge that this had actually occurred. This could be due to the fact that this issue is not within their jurisdiction because it relates to external actors. It was stated that MONRE/MARD are probably aware of this recommendation. Stakeholders felt it would be very helpful if both the panel and connectivity were established.
3. Government of Vietnam should establish a procedure on how to manage construction workers, using the example of Song Bung 4 construction camp in Ta Bhing commune. This model would encompass the means of controlling social impacts, especially on ethnic minorities, as well as the suite of environmental impacts.

USAID 2012 site visit findings:

- Camps are separated from residential areas by fences. Workers have been provided with information on HIV/AIDS, human trafficking, and the prohibition on both wildlife hunting and NTFP collection. It was reported that the camps have adequate facilities.
 - Community teams have been identified to patrol the forest. One stakeholder did not think this was an effective approach since it is too easy for individuals to be bribed and there are no legal regulations for this type of activity. Additionally, there is no budget and no power for community teams to arrest and confiscate either weapons or wildlife. Given these constraints, the teams are not effective. Another stakeholder said that there is usually a local government authority accompanying the community patrol teams who has the authority to arrest and confiscate contraband.
4. A model should be established by GOV, of a cooperative impacts and mitigation monitoring team, consisting of representatives from the hydropower project construction and later the operating company, district authorities, Provincial Forest Department and local communities. The aim would be to ensure compliance to all aspects of the EIA and defined mitigations.

USAID 2012 site visit findings:

- Although a model does not seem to be established, various entities are conducting monitoring visits.
5. As a conservation offset, the project should finance a proper study of the aquatic ecosystem and fisheries in that section of the Song Bung.

USAID 2012 site visit findings:

- This has not yet occurred.

As a conservation offset, the project should contribute to the implementation of the Song Thanh NR Management Plan, including financial contributions to capacity building and provision of necessary equipment to the patrolling of the NR, as well as counteracting the increased amount of illegal access expected to occur as a result of the improved infrastructure in the area.

USAID 2012 site visit findings:

- STNR is aware of this recommendation and will cooperate with SBMB to see if Payment for Ecosystem Services can be established for this project.

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