

A Perspective on Laos

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Introduction

Laos PDR is an elongated, landlocked country of 236,800 km², 88 percent of which is contained within the lower catchment of the Mekong River that traverses the country from north to south. Laos is sparsely populated — the estimated population in 1999 was 5.1 million people — and population density remains one of the lowest in Asia at 21 persons/km². Roughly 78 percent of the population lives in rural areas concentrated along the Mekong River and its tributaries. Geographically, the country is dominated by steep terrain, with hills and mountains covering two-thirds of its land area. Approximately 47 percent of Laos is forested. Only 20 percent of the country is considered potentially cultivatable. Approximately 35 percent of all water in the Mekong River originates from catchments within Laos — these catchments comprise 26 percent of the total catchment area of the Mekong River Basin (MRB). Significantly, river catchments in Laos provide around 60 percent of all water in the Lower Mekong Basin (LMB).

General Environmental Situation

Key environmental issues facing the Government of Laos (GOL) in managing natural resources are deforestation, land degradation, loss of biodiversity, water quantity and quality, and urbanization. These are briefly examined as follows:

- Deforestation as a result of over-utilization of forest resources continues to present the country's major natural environment challenge. A number of factors contribute to deforestation, including commercial logging, shifting cultivation, and, to a lesser extent, hydropower development. Improvements are being sought by the GOL to address concerns regarding commercial logging — perceived to be insufficiently regulated in the absence of enforceable forest management standards encompassing sustainable logging practices, allocation planning, controlling access, and biodiversity protection (TEI, 2001).
- Shifting cultivation in the uplands has been a major problem, resulting in land degradation (i.e., reductions in fallow periods have led to an increase in unproductive soil, erosion, and waterway sedimentation, and a gradual reduction in food production from cultivated areas). Management of upland areas has proven complex due to social conditions, culture, and livelihood issues, particularly with regard to ethnic groups that live in the country's uplands. Alternatives to intensified shifting agriculture are being sought by the GOL, including allocating stable agricultural land in upland areas and promoting alternative income generating options to reduce pressure from shifting cultivation.
- Biodiversity is closely linked to the state of forest management and land degradation resulting from unsustainable shifting agriculture practices. While Lao's forests are thought to support high biodiversity, there are fears that rapid deforestation is placing significant pressure on habitat essential to supporting high biodiversity. Exacerbating

the loss of biodiversity because of habitat depletion is the threat posed by indiscriminate and uncontrolled hunting and capture of a wide range of wildlife species (MRC, 1997).

- Laos possesses abundant water resources that far exceed present water use needs for irrigation, urban and rural water supply, and hydropower development. Although water withdrawals are projected to increase as development continues, no water demand conflicts are expected in the near future at the national level. Water shortages do, however, exist at the local level (TEI, 2001).
- Because Laos has a low population density and limited industry, the country is not faced with the same water quality problems (e.g., water quality degradation as a result of industrial and urban wastewater discharges) observed elsewhere in the MRB. Water quality in Laos is currently quite good and is not significantly affected by human activities. However localized degradation to some streams, rivers, and wetlands has occurred (e.g., soil erosion from land clearing leading to increased sedimentation, declining water quality in urban areas due to wastewater discharges). Notwithstanding the generally satisfactory existing water quality in Laos, the government recognizes that water pollution presents a threat that will grow with development.
- It is important to note that some gaps exist concerning information about the environment in Laos. Although the situation is improving as a result of substantive recent efforts, weaknesses remain in the country's information management systems. Effective mechanisms for information exchange have not yet been developed and, as a consequence, it is often difficult to identify and access existing information. Another challenge is the need to link research and management to ensure that research priorities match the needs of policymakers and environmental managers.

Economic, Environmental Policy, and Institutional Setting

Laos is ranked among the world's least developed countries (LDC), but has a promising outlook for future economic development due to its rich natural resources. Agricultural production represents the main source of national income, accounting for over 50 percent of the gross domestic product (GDP), employing over 75 percent of the labour force, and supplying 40 percent of the country's foreign exchange earnings (ADB, 1998). Industry and service sectors are still at an early stage of development, with the notable exception of hydropower, which is one of the country's main export sectors. Laos is at the threshold of expanding its GDP by means of diversification in development and expansion of infrastructure. The GOL has set a goal of lifting the country out of the ranks of the LDC by 2020 — priority is given to improving social conditions and creating incomes, particularly in rural areas.

Key natural resource sectors in Laos are agriculture, forestry, and hydropower. Agriculture is the main form of arable land use, comprising permanent agriculture by lowland people and shifting agriculture by upland people. Potentially cultivatable land is estimated at 5.9 million hectares, of which 800,000 hectares is presently cultivated for rice and secondary crops. Pasture compromises another 15 percent of the cultivatable land. An important trend in recent years has been a gradual decline in the availability of

land for shifting agriculture as a result of population growth, encroachment of lowland people, and loss of land to logging. These factors have placed increasing pressure on upland areas and have led to unsustainable shifting cultivation practices. Consequences of expanding and intensifying upland agriculture include land degradation, soil erosion and corresponding sedimentation of streams and rivers, and deforestation.

Forestry is a major contributor to Laos' economy, with forest products accounting for 42 percent of foreign exchange revenue in 1998. Forests are also recognized as being highly valuable from a non-monetary perspective, providing such benefits as modulating surface water run-off, minimizing soil erosion, regulating the hydraulic cycle in river catchments, and supporting rich ecosystem diversity in the form of habitat. Forest resources in Laos have been dramatically reduced in recent years — forest cover is estimated to have declined from 16 million hectares to 11.2 million hectares between 1970 and 1991 — as a result of shifting agriculture (slash and burn) and commercial logging. Notwithstanding the decline in forest cover, Laos' forests are considered to remain relatively healthy compared to other riparian countries in the MRB.

Because of its geographical location and climatic patterns, Laos has abundant freshwater resources. In terms of renewable freshwater, the country has the highest availability of water per capita in Asia, estimated at more than 66,000 m³/person. Current domestic water use by households, industry, and for agricultural irrigation is low but is expected to increase considerably over the next few decades. Laos' mountainous terrain and high surface runoff combine to give the country a huge potential for hydropower development — an estimated 13,000 to 18,000 megawatts or 42 percent of the total MRB hydropower potential. To date this potential has remained largely untapped (less than 5 percent is currently utilized), but hydropower development is predicted to expand rapidly as the GOL seeks to earn foreign income. This outlook will play a significant role in determining the government's approach to water resources management.

Recognizing that natural resources are the foundation for economic development and poverty reduction prospects, the GOL places a high priority on environmental conservation and ensuring the environmental and social sustainability of all development activities. Improving environmental management and social performance has been a government priority, and the government has responded to recognized threats to environmental health by seeking improvements in environmental policies and management practices. In 1994, the GOL introduced the first National Environmental Action Plan (NEAP), which was intended to provide a basis for sustainable development and environmental protection. The NEAP was subsequently revised in 2000 to reflect emerging government policies for the protection of resources and new laws. The second NEAP examines the country's resource base and framework for socio-economic development, key environmental issues, the institutional framework, and agency capacity. It explores the present status and core issues in the various sectors (i.e., forest and other land resources, biodiversity, water resources, water supply and sanitation, industrial and mining development, and roads and transports). The NEAP recommends actions in each of these sectors for improving environmental management, including:

(i) adopting implementing decrees for resource legislation; (ii) seeking improvements in land management; (iii) identifying alternatives to shifting cultivation; (iv) designating additional wetland areas; (v) completing physical works to improve water supply and sanitation; (vi) augmenting regulatory activities; and (vii) putting in place measures for strengthening the institutional framework and line agency capacity.

Since 1990, a number of important laws and decrees have been passed to enable the GOL to implement policies on the use of natural resources including water, lands, forest, and the environment. These policies include:

- Environmental Protection Law (EPL) (1999), which requires protection of natural resources and socio-economic aspects in development.
- Prime Minister's Decree No. 68 (1998), which designates the Science, Technology and Environment Agency (STEPA) as the agency responsible for oversight and coordination of environmental protection.
- Forest Law (1996), which categorizes forest lands and calls for reforestation, sustained yield, and catchment protection.
- Water and Water Resources Law (1996), which sets out the necessary principles, rules, and measures for the administration, use, and development of water and water resources; classifies catchment areas for various uses; and promotes protection and rehabilitation of forests, fishing, and the environment in general.
- Electricity Law (1997), which requires environmental assessments (EA) for hydropower dams and payment of compensation for damages to the environment.
- Road Law (1999), which mandates environmental protection during road building activities and requires compensation for rights-of-way, relocation or replacement of structures, and loss of property.
- Mining Law (1997), which requires developers to utilize procedures that limit adverse effects, control toxic substances, and preserve and restore disturbed lands.

Laos has also ratified several international agreements, including the Convention on Biological Diversity, Framework Convention on Climate Change, Convention to Combat Desertification, Protection of World Cultural and Natural Heritage, and the Mekong River Commission (MRC) Agreement. In addition to formal agreements entered into by the GOL, considerable informal collaboration occurs on an operational level with neighbouring countries and with donors that have ongoing programming in the Mekong region (e.g., the Asian Development Bank [ADB], Danish International Development Agency [Danida], and Swedish International Development Cooperation Agency [SIDA]).

Responsibility for formulating and implementing environmental policies and regulations rests primarily with STEPA in the Prime Minister's Office. Day-to-day implementation of policies is accomplished through various line ministries and agencies, including:

- The Department of Forestry (DoF) within the Ministry of Agriculture and Forestry (MAF) deals with agriculture and forest issues, protected area management, catchment management, and livestock and fisheries.
- The Water Resources Coordination Committee (WRCC) is mandated to advise the government on matters relating to water and water resources, coordinate planning

and management, and coordinate the follow-up, inspection, and protection of water and water resources in a sustainable manner in line with government policy.

- The Ministry of Industry and Handicraft (MIH) is responsible for industrial pollution control.
- The State Planning Committee (SPC) is responsible for national socio-economic planning, while the Committee for Investment and International Cooperation (CIIC) is in charge of development project appraisal, approval, and monitoring.
- The Lao National Mekong Committee (LNMC), recently moved under the Prime Minister's Office, is tasked with coordinating linkages among national implementing agencies and with the MRC in dealing with basin-wide issues.
- Outside the civil service, mass organizations such as the Lao Women's Union, Lao Youth Union, and Lao Trade Union, as well as a number of non-government organizations (NGOs), are involved in the country's environmental issues, from the national to village level.

Achieving effective coordination among the various ministries and agencies involved in environmental management presents a major challenge for the GOL. Specifically, overlaps and gaps exist in the mandates of responsible parties and it is often not clear who is ultimately responsible or whether responsibility for particular tasks might be better allocated differently.

Environmental Protection and Management Highlights

Enactment of the EPL in particular represented a major breakthrough in environmental management in Laos. The EPL specifies the fundamental principles, rules, and measures for managing, monitoring, restoring, and protecting the environment in order to protect the public, natural resources, and diversity, and to ensure the sustainable socio-economic development of the country. Taken together with environmental provisions of laws concerning electricity, roads, land, water resources, and forests, the EPL provides a framework for implementing measures intended to protect the environment and promote social sustainability.

Another notable step forward made by the GOL has been its recognition that a national EA process is critical to ensuring that development is achieved in a sustainable fashion. Laos has only recently begun to comprehensively address environmental protection, including establishing a formal EA process. Specifically, the EPL provided that STEA should issue regulations on procedures and methods for environmental impact assessment (EIA). Such regulations were seen as critical to improve the existing ad hoc situation where development projects and activities may not have been subject to close scrutiny by STEA, and where EA was not done for some projects. Where EA was done, it often did not follow a consistent process (i.e., developments were generally subject to EA requirements of international funding agencies [IFA] such as the ADB, Japanese International Cooperation Agency [JICA], and World Bank).

Environmental assessment regulations were subsequently approved in October 2000. Passing of the new regulations formalized the EA process in Laos in order to ensure more

consistent scrutiny of all major development projects and activities that may not have previously been subject to assessment. The regulations provide for uniformity in the EA process and clearly set out the responsibilities of all parties in planning, constructing, operating and ultimately decommissioning projects (i.e., a cradle to grave approach). Lao's EA regulations are similar to those adopted in Thailand and Cambodia, but incorporate features that avoid problems experienced in these countries. Attention then shifted to implementation, including developing sector guidelines for the MIH (i.e., power development, industry, mining), Ministry of Communication, Transport, Post and Construction (urban planning, roads) and the MAF that are compatible with the EA regulations. These guidelines reinforce the EA process and are specific for the various sectors.

Protection of natural habitat and biodiversity has also been a GOL priority. Although Laos supports one of the most diverse areas of biodiversity in the MRB, there is an increasing loss of forest habitat, encroachment of wetlands, hunting pressure by local people, and concerns about increasing cross-border poaching. New and improved roads through previously inaccessible areas are thought to have speeded up the exploitation of plants and animals. The DoF, with support from STEA, has made good progress in identifying and designating protection areas. By 1999, some twenty locations had been designated as National Biodiversity Conservation Areas (NBCA), and other areas (e.g., prime wetlands in southern Laos) are being considered for designation. However, management plans for controlling activities within the NBCA have not yet been completed, and considerable damage is occurring because of encroachment of development activities and market and subsistence hunting, as well as illegal poaching and logging.

The GOL continues to pursue improvements in environmental management and has sought loan assistance from IFA such as the ADB to enable it to take a proactive approach that integrates environmental and social considerations in all development activities. This is expected to allow for more sustainable development in the energy and transport sectors — key sectors for economic growth that also have wide-ranging social and environmental impacts. Constraints to improving performance in these sectors include an incomplete policy and regulatory framework, weak implementation capacity at sector and provincial levels, insufficient compliance and enforcement mechanisms, inadequate regional planning to guide energy and transport development, and a lack of sustainable funding for environmental management (ADB, 2001). The GOL intends to further its policy reform agenda by: (i) strengthening the national policy and regulatory framework for environmental management and social safeguards; (ii) enhancing policy implementation measures and capacity at sector and provincial levels; (iii) improving compliance and enforcement; and (iv) promoting river basin management as a multi-sectoral planning framework.

Last but not least, it is important to note the emerging role of public involvement in Laos. The GOL regards public involvement as being a vital component of country development and has enshrined this concept in many government policies (e.g., under the WRCC, key documents have been drafted to raise public awareness on environmental issues). In the

EA context, it is recognized that public consultation should be emphasized throughout the project cycle — from the beginning to the end of the development process. In a broader context, public involvement has also been recognized as an integral part of natural resource management (e.g., the issue, including gender considerations, has been highlighted in the MRC’s programming and strongly endorsed by donors and riparian country governments). In recent years, the GOL has promoted public involvement as part of their ongoing efforts to decentralize management of resources to the provincial, district, and village levels. It is expected that this trend will have a positive impact but that progress will inevitably be slow.

Contribution to Regional Environmental Management

The Mekong River is integral to Laos, with 88 percent of the country lying within the MRB. It is the only country that has common borders with the other five riparian countries in the MRB. For this reason natural resource development in Laos, particularly hydropower projects on Mekong River tributaries or in the mainstream itself, has the potential to impact downstream riparian countries. Recognizing the importance of the country’s role in overall MRB environmental management, the GOL seeks to extend and strengthen transnational and regional relations and has been an active participant and contributor to regional governance initiatives.

The 1995 Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, signed by the four LMB countries of Cambodia, Lao PDR, Thailand, and Vietnam, stands out as the single most important regional instrument for cooperation on natural resource development and environmental protection issues. The objective of the Agreement is to cooperate in “all fields of sustainable development, utilization, management, and conservation of the water and related resources... in a manner to optimize the multiple use and mutual benefits of all riparians and to minimize the harmful effects that might result from natural occurrences and man-made activities.” The Agreement established the MRC as an international body, thereby providing an institutional framework through which basin-wide sustainable development initiatives would be implemented.

The GOL has been extensively involved in implementing initiatives contained in the MRC’s five-year Strategic Plan, from 1999-2003. To date, core programs on Water Utilization Plan (WUP), Basin Development Plan (BDP), and the Environment Programme have been established and implementation has begun by National Mekong Committees at the national level in LMB riparian countries. In Laos, the LNMC has been given responsibility by the GOL “to formulate policy, strategic plans, projects and programs related to water and water resources development in the Mekong Basin... and to ensure community participation and development cooperation with other Mekong riparian countries, other countries, and donors.” An important aspect of the above-mentioned MRC initiatives is the need to develop riparian country capacity to address basin-wide environmental issues to ensure that basin-wide and cross-border issues are incorporated into riparian country environmental programs. It is clear that the Agreement represents a valuable instrument for cooperation on water resources management among

LMB countries, but it is too early to comment on whether the mechanisms that have been put in place for day-to-day implementation will prove robust in the long term.

Looking Forward to the Future — Prospects and Priority Areas

Although the natural resource base in Laos has been the foundation for economic growth to date, development has had inevitable adverse consequences that are expected to increase as development accelerates to satisfy national development objectives. In particular, the potential economic benefits from satisfying regional demand for hydropower energy pose an environmental and sustainable development challenge for the GOL. In addition, demands placed on forest and water resources in Laos are expected to increase significantly over the next decade as natural resource exploitation (e.g., upland agriculture, commercial logging, agricultural irrigation, mining, industry, and rural and urban water utilization) continues. Environmental issues raised by rapidly expanding natural resource use include deforestation, loss of catchment integrity due to land degradation, reduced biodiversity, depleted water reserves, and declining water quality.

Domestically, the GOL has made substantial progress in passing environment-related laws and regulations in response to the above-mentioned natural resource management problems.

However, it is recognized that legislation alone will not solve environmental problems — legislation must ultimately be appropriately enforced if management responses are to prove effective. Successful implementation of Lao's environmental legislation will provide challenges for the various regulatory authorities due to the cross-cutting nature of environmental matters. For example, it will be necessary for the GOL to take a multi-faceted approach if the government is to achieve its goal of reducing shifting agriculture in Laos. To be successful, various GOL interventions are required, namely: (i) delivering training in appropriate alternative agricultural techniques; (ii) addressing the overriding issue of widespread poverty by providing alternative sources of income; (iii) raising awareness of environmental degradation; and (iv) considering increased decentralization of natural resource management (DANIDA, 2001). Similarly wide ranging, integrated management approaches will be required in responding to environmental problems raised by forestry, hydropower, mining, industrial, and rural and urban development. Corresponding institutional strengthening, capacity building, and funding will also be necessary to overcome existing constraints faced by line agencies in effectively managing natural resources in a sustainable manner.

From a regional perspective, additional legislative and administrative procedures will be needed before multilateral treaty obligations, which cover a broad range of environmental issues, are fully met. In practice, additional domestic legislation and administrative procedures are required to ensure that national laws are brought into compliance with these international instruments (UN, 2000). The MRC (2001) notes that the institutional frameworks of the four LMB countries for integrated water resource management varies in their degree of national and local coverage. Similarly, the four countries are at different stages of developing their laws, regulations, and policies for environmental management.

The GOL has made significant progress in these respects, as evidenced by the passing of laws and regulations dealing with environmental issues and ongoing efforts to strengthen institutions and increase capacity in line agencies responsible for implementation.

Notwithstanding, some weaknesses in existing processes are apparent and will need to be addressed. For example, although EA is now established at the national level in LMB countries, concerns have been raised that insufficient attention is being given to cumulative impact assessment and regional environmental assessment in conducting EA for large development projects and activities. In an effort to address these gaps in EA regulations, guidelines, and practices, the MRC's WUP is currently undertaking a consultative process with riparian countries concerning the need to reach agreement on a transboundary EA system for the LMB. Given the potential for planned development activities in individual riparian countries to adversely impact on neighbouring countries, the MRC's initiative is seen as a timely intervention to raise awareness of transboundary issues and develop processes and sector guidelines for use by LMB countries in assessing planned development projects and activities.

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