

# **PART 1: GENERAL OVERVIEW**

## 1.1. INTRODUCTION

### 1.1.1 A BRIEF HISTORY

Nam Theun 2 Multi-purpose Project (NT2) is acknowledged as having the potential to significantly contribute to the country's development objectives. Over the period of operation the Nam Theun 2 Power Company (NTPC) will provide income revenues to the Government of Lao PDR in the order of about US\$2 billion (average annual revenue of US\$80 million) in the form of shareholder dividends, taxes and resource use royalty charges over the life of the concession. At the completion of the concession the plant will be handed over to the Lao government at no charge, with all revenues thereafter accruing to the Lao state.

The project has the annual capacity of 6,000 GWh so that in order to meet its capacity, it requires the annual average water of 5,000 million m<sup>3</sup> to generate the power of the NT2 construction involved the impoundment of the Nam Theun near the old location of Ban Sop Hia and the creation of a reservoir which, at full supply level, flooded an area of 450 km<sup>2</sup>. Of this area approximately 130 km<sup>2</sup> was inside the original Nakai Nam Theun National Protected Area (NNT NPA) as designated by Government of Lao PDR by Decree 164 in 1993. The boundary of the NPA was modified in 2000 by Decree 193 to excise the proposed flooded area out of the NPA, and to extend it by inclusion of two forested corridors linking it to two national protected areas (Phou Hin Poun and Hin Nam Nor), and these three areas together are known as the **NT2 Watershed**, covering approximately 4,277 km<sup>2</sup>. At the same time, the NPA is experiencing a range of development pressures ranging from unsustainable wildlife hunting to illegal logging to habitat conversion, which undermines the long term viability of this ecologically significant area.

This confluence of scenarios – a progressively degrading watershed and a small area of this NPA being impacted by the NT2 Project flooding - led the NT2 project principles (GoL, WB and NTPC) to the logical conclusion and agreement that the NTPC would pay the amount of USD1 million per annum (CPI adjusted) for the management of the Nam Theun watershed (including the NNT NPA and two corridors zones) as both (a) protection of its valuable biodiversity; (b) for the long term sustainable management of its catchment (c) mitigation for the loss of the 3.6 % of the NPA area to flooding, to ensure the catchment was properly managed for the protection of the NPA as the source of the water for the reservoir. The latter two are essentially payment for environmental services while the former are positive externalities of the project.

The Socio-Environmental Management Framework and Operation Plan (SEMFOP) programs are designed to meet the objectives of the PM471 and the GOL obligations under the CA and are funded by NTPC through the transfer of funds over the 31.5 year period as a means of paying for the environmental services (water) provided to the NT2 project, for the mitigation of project impacts on the NPA and to significantly improve the management of the NPA through the establishment of a new type of Lao government agency.

The priority objective of SEMFOP therefore is obliged to pursue the objectives as defined in the PM 471 to enhancing the long term protection and conservation of the NNT NPA and corridors. The level of funding and time period (30 years) of assured financial support from the project is unprecedented in Lao conservation. Without this funding the NPA may not have a future as an intact Protected Area.

The NT2 Watershed Management and Protection Authority (NT2 WMPA), a unique management unit established under the Ministerial Decree No. 25/PM, dated on 26<sup>th</sup> February 2001, updated by the PM 471 in 2011, was given its mandate by the government to ensure conservation and protection of biodiversity and cultural values of the watershed to guarantee sufficient volume of water with low sediment load, flowing into or from the Nam Theun 2 Reservoir. From 2005-2011, the SEMFOP provided overall guidelines for NPA management, and the WMPA made strides toward achieving major objectives to some extent, contributing substantially to reducing some key threats to biodiversity.

### **1.1.2 PURPOSE OF THE SEMFOP II**

The purpose of the Social and Environmental Management Framework and Operational Plan (SEMFOP) is to ensure the effective, long-term protection of the biodiversity and watershed values of the Nam Theun 2 catchment while at the same time safeguarding the well-being, traditional livelihoods and culture of its human inhabitants. This SEMFOP II document follows on from the SEMFOP I adhering to the same principles and guidelines and describes the current setting, new institutional arrangements, management planning, program activities and budget framework for the next 5 years (2012-2017) of operation of the Nam Theun 2 Watershed Management and Protection Authority (WMPA).

Under Article 2 of Decree 471, the SEMFOP “refers to the complete Socio-Environmental Management Framework and Operation Plan (SEMFOP) in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area and adopted by the Board of Directors of the Nam Theun 2 Watershed Management and Protection Authority, that are defined to serve the purposes of the Authority in supplying basic information to acknowledge and understanding in relation to the Nakai-Nam Theun National Protected Area and NT2 Watershed Area, natural resources, biodiversity wealth, the environment and multi-ethnic people, including any vulnerable ethnic groups that live in the area, and to define a detailed framework and program for the management/arrangement of the Nam Theun 2 Watershed Area.”

### **1.1.3 A NEW APPROACH TO SEMFOP II**

The PM’s decree 471 emphasizes that most of management activities is to implemented by concerned implementing agencies<sup>1</sup> whereas the WMPA plays as a focal point for coordinating in the implementation of all other sector activities, providing overall guidance, monitoring, evaluation, and technical assistance to support and assist concerned sectors to implement effective activities. It requires the WMPA to have smaller number of staff with high qualification and different capabilities to effectively serve its functions as defined in the decree (see section 1.7). Therefore, the key role of WMPA, particularly during the transition period, is to support the relevant sectors to be more active players in the PA management system though continuing on creating the effective cooperation of other government agencies and strengthening capacities of all concerned agencies, especially district enforcement agencies including police, military, and forest inspection offices, on both technical and management skills in order to strengthening the smooth transition, and ensure effective implementation of this SEMFOPII as guided by the new decree. This allows those implementing agencies to prepare themselves for the future work and thus ensures that all assigned tasks are properly managed, and then a transfer of responsibility will be gradually handed over to whoever is judged or considered having sufficient capability to take a leadership (or responsibility) on management tasks.

In order to strengthen the smooth transition as required by the PM471 in the purpose to achieve toward the goals as defined in SEMPFOP 2, the WMPA will focus its efforts to achieve these following objectives during the transition period;

i. WMPA’ staff arrangement and recruitment, and capacity building – re-orientation of WMPA’ staff is the first priority, some well trained government staff that have long experience with WMPA will be transferred to relevant district implementing agencies to increase both staff numbers and effective implementation of SEMFOP2. The WMPA will reduce its staff members from currently more than 69 staff to a minimum of 35 staff including one WMPA director and two deputies (see section 1.8.3). Some current staff with high qualification and different capacities will be maintained and other new

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<sup>1</sup> Implementing Agencies (or stakeholders) refer to agencies entering a contract with the Nam Theun 2 Watershed Management and Protection Authority for the execution of Management and Operational Plans. Such those agencies may include parties concerned, NGOs, and private or other entities without limitation

qualified staff will be recruited if necessary. Additionally, both national and international consultants will be periodically recruited to support and provide technical supervision and training for the WMPA' staff.

ii. Strengthening effective cooperation with concerned government agencies – engagement of all parties in thinking, making-decision, implementation, taking responsibility and sharing the benefit is taken into account as important steps in building partnership or connections among different people. The key task of WMPA during the transition period is to build better understanding for all parties through raising awareness of SEMFOP2 by;

- organizing a series of workshops with concerned implementing agencies to raise awareness of SEMFOPII.
- identifying together roles and responsibilities of the WMPA and other implementing agencies, and then agree on the contract and Term of Reference.
- developing the legal framework that clearly defines responsibilities and standards. The creation of a strong legal framework- to address issues related to financing and reporting, to determine the type of control mechanisms (especially financial) that are necessary and who is accountable for them.

iii. Capacity building for concerned implementing agencies as well as for the WMPA – as mentioned earlier, the transfer of responsibility will be handed over to whoever is capable of taking ownership or leadership for assigned tasks. The past experience and lessons point to a set of core issues specific to capacities essential to design, implement, manage, evaluate, and report. However, capacity assets, gaps, and priorities vary greatly across the implementing agencies or even in the same sector over time, so there is a greater need to emphasis on;

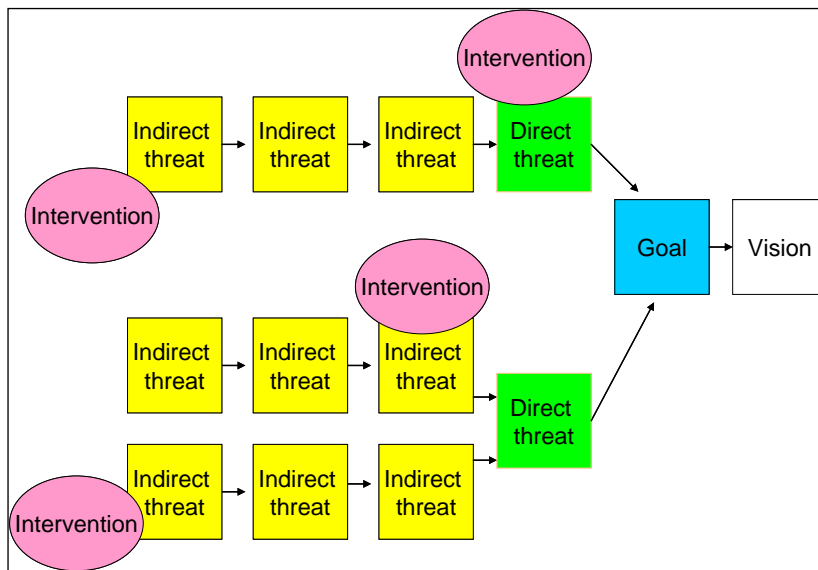
- institutional and staff capacity need assessment
- provision of trainings on technical and management skills, including cross-cutting development issues (such as gender equity, human right, environmental and cultural protection), clear and precise reporting procedures, consistency and transparency in administration.
- development of monitoring and evaluation procedures to provide a mechanism that make available for performance assessment.

iv. Performance Monitoring and Evaluation framework – one of the most important agreements made between the WMPA and concerned implement agencies will emphasizes that the financial supports for all activities need to be based on successful performance or good performance. Therefore, in order to assess that all assigned tasks are effectively and efficiently undertaken by concerned implementing agencies as well as by WMPA, a progressive or successful measurement of all management activities undertaken by the concerned agencies will be evaluated through a systematic monitoring of indicators of success as defined in SEMFOP II. The monitoring system framework will be developed together with a particular implementing agency to ensure that all parties have common understanding and follow the same track.

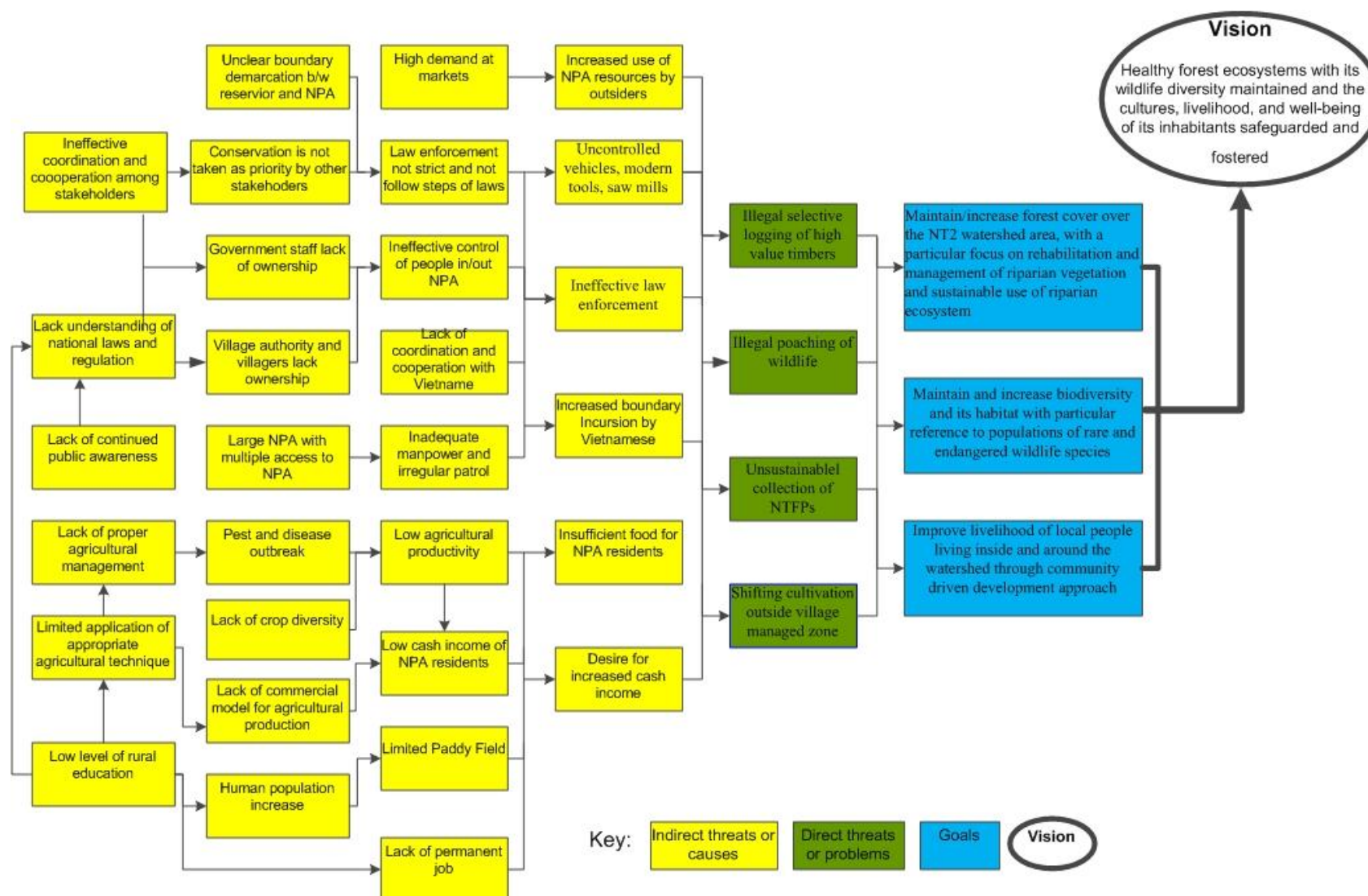
### **1.1.4 PROBLEM ANALYSIS AND INTERVENTIONS**

The SEMFOP II has been developed through a series of consultation workshops with local communities and other stakeholders including authorities at provincial, district, and village levels, development partners, NTPC, and villagers including vulnerable people in the communities such as women and pro-poor to ensure that it is developed under the participatory approach. Through the course of the workshops, participants systematically compiled all relevant issues using a “conceptual model” (Figure 2) to serve as a visual representation of what the participants collectively thought, based on the past achievement and lessons learnt of implementing the SEMFOP I, were the key threats (or problems) – direct and indirect (i.e., problems and causes) - that were leading to undesirable impacts on biodiversity of NNT NPA and the NT2 Watershed. Based on the model, participants then identified the priority actions that they feel are needed from 2012-2017 to reduce

threats to the watershed biodiversity values to be able to achieve the goal and vision of SEMFOP II (Figure 3).



**Figure 1** The components of a conceptual model showing how the causal chains of threats are contributing to the decline of biodiversity values in NNT NPA and the NT2 Watershed. Interventions are management actions selected to reduce threats and reverse the decline.



**Figure 2** The conceptual model assembled by workshop participants illustrates the causal chains of threats believed to be contributing to the depletion of biodiversity values in NNT NPA and the watershed. From left to right, indirect threats are shown in yellow, leading to direct threats (green), which need to be reduced to reach the goal (blue) and ultimately, the vision (white)

## 1.2. OPERATIONAL AREA COVERED BY THE SEMFOP II.

The geographical coverage and operational area of the SEMFOP II includes:

- i. The NT2 Watershed: the area of legal authority of the WMPA as defined in Prime Ministerial Decrees 471 (November 2010), and 193 (December 2000)
- ii. Peripheral Impacted Zones (PIZ): areas around the NT2 Watershed inhabited by villagers who enter, or use resources of, the NT2 Watershed and thus have an impact on the NT2 Watershed.

### The NT2 Watershed (See Annex 5)

The area in which the WMPA is mandated to operate is legally defined by PM Decree 471, which defines the NT2 Watershed (also referred to as ‘the watershed’ in this SEMFOP II) as the area covering:

1. Nakai-Nam Theun Protected Area established under Article 24 of Forestry Law 2007. It has been determined and established under Article 1 of the Prime Minister’s Decree on the Establishment of National Protected Areas in the whole country, No. 164/PM, dated 29 October 1993, and further defined in Article 3 of Prime Minister’s Decree on the Establishment of Nakai-Nam Theun National Protected Area, Corridor Areas, Nam Theun 2 Project Reservoir Area, and Resettlement and Forest Areas for People Affected by the Project, No. 193/PM, dated 29 December 2000;
2. Western Corridor Area connecting the Nakai-Nam Theun National Protected Area and Phou Hin Poun National Protected Area that has an area of 71,260 hectares as defined in Article 4 of the Decree 193/PM, dated 29 December 2000 and in Article 6 of the Decree 24/PM, dated 13 February 2008;
3. Eastern Corridor Area connecting the Nakai-Nam Theun National Protected Area and Phou Hin Namnor National Protected Area that has an area of 3,310 hectares as defined in Article 5 of the Decree 193/PM, dated 29 December 2000; and
4. Special Conservation Areas comprising of streams alignments and valleys between mountains that may arise in the northern and southern source areas of the reservoir area on the 3 northeastern side of the border with the resettlement area; the various islands on the northeastern side of the corridor between the Nakai-Nam Theun National Protected Area and the Phou Hin Poun National Protected Area.

The demarcations, boundary and areas provided in this definition are shown in detail on the list of 417 topographic coordinate points on the attachment to this Decree and the boundary areas were determined in accordance with Article 5 of the Prime Minister’s Decree on Nam Theun 2 Reservoir, No.24/PM dated 13 February 2008. The detailed map and topographic points are attached to this Decree. The attached documents and boundary maps of the definitions above shall be components of this Decree and shall not be separated from this Decree.

## 1.3. NATIONAL AND GLOBAL SIGNIFICANCE OF THE WATERSHED

The 4,277 km<sup>2</sup> watershed catchment area of NT2 Multi-purpose Project, the Nakai Nam Theun National Protected Area and its two corridors, contains a range of critical habitats (e.g., Annamite mountain range), which are home to a wide variety of fauna and flora, and many of those are critically endangered and of global conservation concern. At least 92 species of mammals, 403 species of bird, 29 species of reptiles, 69 species of fish, 25 species of amphibians, and 917 species of NTFPs. Of most significant features that make the NT2 watershed a unique place in the world, the area contains the world’s new species, such as Saola (*Pseudoryx ngetinhensis*), Large-antlered Muntjac (*Muntiacus Vugangensis*), Striped Rabbit (*Nesolagus timminsi*), and those are endemic to the Annamite – species

are not found elsewhere in the world. In addition, the biodiversity of the watershed is equally rivaled by cultural diversity. It is also home to approximately 7,000 indigenous people of four main ethno-linguistic groupings of Vietic, Brou and Tai-Kadai backgrounds. Each of these groups speaks their own dialect and has unique cultures and traditions, and their livelihood depends largely on biological resources for daily subsistence, both for food and income, including NTFPs collection, hunting of wildlife, and fishing.

Conservation of the watershed is not just to protect its unique biological and cultural values, but achievement of this project also present a model of sustained balance between nature conservation and socio-economic development in Lao PDR as well in the world. Additionally, conserved and restored habitats of the watershed can remove carbon dioxide from the atmosphere, thus helping to address climate change by storing carbon. In this regards, the biodiversity of the watershed offer benefits to both national and global communities in forms of ecological services. Therefore, conservation of the watershed is essential for the overall goals of both the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change because ecosystems play a key role in the global carbon cycle and in adapting to climate change, while also providing a wide range of ecosystem services that are essential for human well-being and the achievement of the Millennium Development Goals.

#### **1.4. THREATS TO THE WATERSHED**

Consultation workshops participants indicate that illegal poaching of wildlife, illegal selective logging of high value timbers, unsustainable harvest of non-timber forest products, and clearance of land for cultivation are most important threats to the values of the watershed area. If current trends of those threats continue, it is likely envisioned that several key species of fauna and flora will disappear from the NPA within the next decade, which in turn will create large impacts on livelihood of local residents as well as the sustainability of hydropower generation. Many wildlife species, especially large ungulates, reptiles, primates, and carnivores are currently facing intensive poaching due to high demand and value of their body parts at international markets. Similarly, particular species of flora, e.g., *Mai Kha Gnoung* (*Dalbergia*), *Mai Hing Tham* (*Glyptostrobus* sp.), and *Fokinia*, are most attractive to outsiders (including people from Vietnam) to encroach into the NPA although people realize their actions are against laws and regulations.

The problem analysis (Figure 3) shows clearly that given the growing need for cash income, low income villagers inside NPA are encouraged to engage with outsiders (i.e., traders to forage for more high value wild products (e.g., wildlife, NTFPs, timbers) for trade rather than for subsistence. The reasoning behind illegal activities is primarily related to the weak enforcement of regulations or laws on the ground resulted from; (i) ineffective coordination and cooperation between the various sectors of relevant government agencies, (ii) lack of institutional and staff capacity of stakeholders in natural resource management, (iii) conservation of NT2 watershed is not taken as priority in institutional framework of stakeholders concerned, (iv) modern tools (e.g., chainsaw), weapons (e.g., wire snares), and sawmill are allowed to sell in open shops, and operate.

Of most particular concerns of problems that need to be immediately addressed are;

*1.4.1. Increased threats from encroachment into NPA by outsiders from peripheral impact zone* – at present, many people from PIZ enter into NPA in order to searching for highly valued timber (e.g., rosewood or *Mai Kha Yoong*), NTFPs, and wildlife. Some villagers also practiced shifting cultivation outside village management area.

*1.4.2 Increased threats from incursion by Resettlement Villagers* – at present, many people from the new villages (probably some from old villages) in Nakai Plateau enter into NPA in order to searching for highly valued timber (e.g., rosewood or *Mai Kha Yoong*), NTFPs, and wildlife. Boats given by



NTPC without proper management to villagers allow easy access to the NPA, and pose more threats to the NPA and the watershed.

*1.4.3. Increased threats from trans-boundary incursion by Vietnamese* – the NT2 watershed shares long international border with Vietnam. Given several roads built to the border in Vietnamese side allow easy access by Vietnamese to the NPA. Trans-boundary illegal logging, poaching and trading of wildlife and NTFPs by Vietnamese pose recently most serious threats to wildlife populations and forest resources in far remote areas of the NPA and watershed.

*1.4.4. Increased threats from use of natural resources by communities inside NPA* – high demand and price of wild products encourage low income local villagers in engagement with outsiders (i.e., traders) given a desire for cash income to search for those resources for trade rather than for subsistence. Some people practiced shifting cultivation outside designated lands with a desire for both increased rice production and opportunity for poaching and NTFP collections.

*1.4.5. Increased threats from uncontrolled access* – easy access to the NPA (e.g., by boats) combined with large protected area make it extremely difficult to control access to the NPA by outsiders, both Vietnamese and domestic people.

*1.4.6. Increased threats from clearance of land for agriculture* – shifting cultivation in old growth or primary forest by some villagers, insiders and outsiders, outside the village's controlled used areas were reported as a major threat causing a decline in forest covers.

## **1.5. INTEGRATED BIODIVERSITY CONSERVATION AND LIVELIHOOD DEVELOPMENT**

Livelihoods of the Watershed inhabitants and periphery are primarily forest reliant, and they were classified into four systems based on the degree of their dependence on forest resources for food and income associated with agriculture. For example, swidden/forest – a heavy reliance on forest products for food and income with some cultivation of swidden rice as staple; swidden - a heavy reliance on swidden cultivation of upland rice, swidden/paddy – combined swidden and paddy cultivation, and paddy – primarily reliance on paddy cultivation (see detail in SEMFOP, Part 3). Rice is the main staple food produced by swidden and paddy cultivations, and meat and vegetables are regularly harvested from the forest and rivers, while sales of timbers, NTFPs and wildlife and some livestock are main source of income for villages to exchange for necessary goods, e.g., clothes, medicine and other supplies.

All livelihood systems above clearly indicate that food security of all ethnic groups in the watershed and periphery is primarily relevant to hunting, fishing and NTFPs collection combined with agriculture. The WMPA has recognized that without sustainable use of forest resources, there would not be ongoing food security produced by forest, and the loss of biological resources will exacerbate the poverty, and likewise, poverty will become a major threat to biodiversity. On the other hand, if there is no livelihood development, e.g., increased agricultural productivity, there would be an over reliance on forest resources by people leading to a rapid decline of biological resources. Therefore, achieving food security through agricultural development and improved management systems for forest resources are primary goals of the watershed management to ensure that current livelihood system are sustained in a manner consistent with conservation objectives. In this regard, the participatory integrated conservation and development approach (PICAD) is adopted as key management tool to address all those emerging threats that the Watershed is experiencing today (see detail in Part 2, SEMFOP I). The focus is therefore on building local capacities, both at individual and institutional levels, to meet all the conservation and development aspirations of the people.

The PICAD provides the link between three main components;

A. Forest resources and land use planning, allocation and management (FLUPAM)

- B. Participatory Protected Area Management (PPAM)
- C. Livelihood Development for Conservation (LDC).

## **1.6. LEGAL FRAMEWORK FOR BIODIVERSITY CONSERVATION IN NT2 WATERSHED**

The Social and Environmental Management Framework and Operational Plan (SEMFOP) has been prepared in accordance with the provisions of legislation set up to manage the watershed area. The SEMFOP II is the interpretation and integration of a range of policies, treaties, strategies, commitments, contracts and legislative requirements into a folio that provides an essential framework to guide management of NPA and the NT2 Watershed, and assure the public that the areas are being responsibly managed. The purpose of this SEMFOP II is to ensure the watershed area is managed to achieve objectives of legislation (e.g., decree 471/PM), stakeholder visions, the corporate goal, and conservation management objectives.

The Decree 471/PM, dated on 11<sup>th</sup> November 2010, provides the primary legislative framework for planning and management of the NPA and NT2 watershed area. The decree is the enabling legislation for the continued management and operation of the NT2 WMPA and as such is the principle document that shapes the content of this SEMFOPII. For example, objectives and actions needed to deal with emerging threats that are of priority concerns for the next five years. The decree empowers the WMPA to strengthen “protection, conservation and management of the Nakai Nam Theun 2 watershed and its rich biodiversity and forest to supply enough water with low sedimentation to the NTPC multi-purpose project”, through working partnership with local communities and other stakeholders to achieve these following objectives:

1. Protection and Rehabilitation of Forest Areas
2. Implementation of the Government Letter of Implementation Policy (GLIP)
3. Adherence to the NT2 Concession Agreement
4. Conservation of Bio-diversity
5. Institutional Capacity Building
6. Participatory Development and Livelihood Improvement
7. Customary Rights Use, Residency and Access
8. Effective Management of Funds

Other legislations, such as Forestry Law, Wildlife and Aquatics Law, Decree of Prime Minister 285, also provide additional direction for conserving, protecting and promoting biodiversity values of the NNT NPA and the NT2 Watershed (see table 1).

**Table 1:** A summary of principle legal instruments referred to SEMFOP II

Legal instruments	Key provision
<p><b>Decree of Prime Minister No. 471/PM, 11/11/2010</b></p> <p>The decree No. 471/PM has been updated or modified from the last decree No. 39/PM (2005) and No. 25/PM (2001) in response to meet the current situations, and increased effectiveness of NPA and watershed management. The decree No. 471/PM has replaced the previous two decrees and is currently being used to guide management objectives in WMPA.</p>	<ul style="list-style-type: none"> <li>○ <b>Prohibited Activities</b> (<i>Article 8</i>): <ul style="list-style-type: none"> <li>• Commercial logging;</li> <li>• Hunting of aquatic animal and wildlife;</li> <li>• Mining; and</li> <li>• Destruction of forest for other objectives.</li> </ul> </li> <li>○ <b>Restricted activities:</b> <ul style="list-style-type: none"> <li>• Customary utilization of resources;</li> <li>• Household and livelihood utilization of resources.</li> </ul> </li> <li>○ <b>Promoted activities:</b> <ul style="list-style-type: none"> <li>• Land conservation and river bank protection;</li> <li>• Community development and livelihood improvement;</li> <li>• Forest conservation and regeneration;</li> <li>• Protection of biodiversity and wildlife conservation.</li> <li>• Ecotourism in the form of conservation and in a participatory manner.</li> <li>• Environmental friendly production of agricultural and forestry products and goods; and</li> <li>• Research and Study</li> </ul> </li> </ul>
<p><b>Government Letter of Implementing Policy (GLIP)</b></p>	<ul style="list-style-type: none"> <li>• Prohibited commercial development (including roads, logging, mining and other resource extractive activities) in the NT2 watershed (NNT NPA and its two corridors)</li> <li>• All land use within the watershed is fully consistent with the community-based forest and land use planning and management process</li> <li>• Monitor and regulate in-migration into the watershed and reservoir area</li> <li>• Ensure capable and qualified staff are assigned to work on a permanent basis in WMPA</li> </ul>
<p><b>Decree of Prime Minister No. 285, 13/10/2009, on the Poverty and Development Criteria</b></p>	<ul style="list-style-type: none"> <li>- Define criteria for individual poverty based on income per capita <ul style="list-style-type: none"> <li>• in National Level: 192,000 kip/month/capita</li> <li>• in Rural Area: 180,000 kip/month/capita</li> <li>• in City: 240,000 kip/month/capita</li> </ul> </li> <li>- Household poverty is any household that has the average income less than the amount stated above</li> <li>- Village Poverty is any village that has lack of development condition as follow: <ul style="list-style-type: none"> <li>• more than 51% of poor households in the village</li> <li>• lack of primary school or more than one hour travel by foot</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• lack of medicine bag, pharmacy, dispensary or district hospital which is more than 2 hours travelling by foot</li> <li>• lack of clean water</li> <li>• lack of access or only access in the dry season</li> </ul>
<b>Forestry Law (1996), updated in 2007</b>	<ul style="list-style-type: none"> <li>• Establish distinct zone within and adjacent to NPA, namely, Totally Protected Zone (TPZ), Controlled Used Zone (CUZ), Corridor Zone (CZ), Buffer Zone (BZ)</li> <li>• Develop local rules and regulations with villages in relation to management and permitted uses of above land categories, and penalties for violation or improper use</li> </ul>
<b>Advisory Note 822/MAF, 02/08/1996</b>	<ul style="list-style-type: none"> <li>• Identify and zoning village-use land into five forest categories and two agricultural land types</li> <li>• Detailed eight major stages of LUP/LA</li> </ul>
<b>Land Law, 1997</b>	<ul style="list-style-type: none"> <li>• Rights to possess, use forest and forest land</li> <li>• Provide legal land-use right certificates to families and individuals in those zones set aside for agricultural products.</li> </ul>
<b>Wildlife and Aquatics Law, 2007</b>	<ul style="list-style-type: none"> <li>• Update lists of protected (Category 1) and managed (Category 2 and 3) species</li> <li>• Category 1 is not allowed for harvest anywhere and at anytime</li> <li>• State activities, management and development on wildlife and aquatic animals</li> </ul>
<b>The Water and Water Resources Law, 1996</b>	<ul style="list-style-type: none"> <li>• Within the protected areas, there shall be no construction, agro-forestry production or industry, livestock, quarrying, mineral excavation, soil, sand, dumping of trash, waste, waste water, poisons, chemical substances, bombs, etc.</li> <li>• Prohibitions of cutting trees within water origination protected areas or around water sources, digging, drilling, excavating, and modifying of land surfaces, which will cause erosion in the catchment areas</li> </ul>
<b>The Prime Ministerial Decree 248/PM on National Nutrition Policy, 1/12/2008</b>	<ul style="list-style-type: none"> <li>• Describes roles of nutrition in poverty reduction, and adverse impacts on food and nutrition as a consequence of inadequate enforcement of national regulations (e.g. illegal wildlife trade)</li> <li>• Encourage sustainable planning, usage, and management of biodiversity resources for increased household food security</li> <li>• Promote and enforce environment regulations for stable household food security (e.g. arresting illegal wildlife trade)</li> <li>• Increase nutrition awareness campaign for mobilization and propagation of nutritional message</li> </ul>

## 1.7. INSTITUTIONAL AND MANAGEMENT FRAMEWORK

The management of the NNT NPA and the NT2 Watershed is under the NT2 Watershed Management and Protection Authority (WMPA), a unique conservation organization first established under the Prime Ministerial Decree 25 in 2001, but operated under the mandate provided by PM's decree 471, see annex 4). This mandate includes responsibility for coordinating and implementing of the conservation, maintenance and enhancement of NPA and the watershed and to fulfill these following objectives (Article 6 in the Decree):

1. To guarantee sufficient volume of water with low sediment load, flowing into or from the Nam Theun 2 Reservoir by protection and rehabilitation of forest areas in the Nam Theun 2 Watershed Area;
2. To fulfill the commitments of the Government under Government Letter of Implementation Policy, No. 198/CPI, dated 7 March 2005;
3. To perform the obligations of the Government as defined in the Concession Agreement of Nam Theun 2 Power Project specified as being the responsibilities of the WMPA;
4. Preserve, and protect the natural biodiversity system and facilitate the maintenance and increase in naturally occupied populations of plants and animals in the Nakai- Nam Theun National Protected Area and Nam Theun 2 Watershed Area, particularly the conservation or multiplication of habitat of rare, endangered or near extinct wildlife and aquatic life species;
5. Strengthening capacity building of the Authority and other stakeholders to effectively implement management activities of the Authority's objectives;
6. Contribute towards and facilitate the improvement of the livelihoods of the multiethnic people living in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area, focusing on poverty reduction of the watershed inhabitants through an integrated, community-based conservation and development approach, which assure that any/all development activities do not exert a net impact on the environment, and sound participatory and acceptable decision-making by ethnic groups in local areas;
7. Protect and acknowledge freedom of the multi-ethnic people that live within and around the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area in their place of residence and movement as defined by the law; the Authority acknowledges the customary rights of the multi-ethnic people in use of natural resources within the area that are consistent with regulations, laws and binding agreements with the Authority; and
8. Prudent management and effective use of fund, (income, expenditure, cash reserve and other assets) for the purpose of furthering the above objectives.

In the purpose to achieving above objectives, the Decree clearly specifies the functions of the Authority as followings (article 10 in PM's decree 471):

1. Coordinate and manage all activities included in the Management Plan and Operational Plan in accordance with the Authority's objectives;
2. Provide comments to the relevant authorities on all activities in the Peripheral Impact Zone surrounding the NNT NPA and the NT 2 Watershed Area that will impact on the environment in within and around the Nam Theun 2 Watershed Area, and the Authority's objectives;

3. Consultation and planning with all stakeholders to develop the Management and Operational Plans for the watershed/NPA, and also implement and improve the plans accordingly to compliance with the Authority's objectives;
4. Prepare detailed annual budget plans based on the Management Plans and Operational Plans;
5. Coordinate, facilitate and finance, as necessary, the implementation of Management Plans and Operational Plans that are executed by Implementing Agencies;
6. Receive, disburse and account for funds provided by NTPC and other donors to the Authority to be used for the implementation of activities accordingly to the Authority's objectives;
7. Coordinate with NTPC and the Reservoir Management Committee on issues relating to the water usage rights with and prevent any activity liable to affect such rights through the following measures:
  - a. Develop regulations and system for authorizing and licensing that is effective in the NNT NPA and NT2 Watershed Area for different activities that may exert an impact on the Authority's objectives;
  - b. Enforce, monitor and control the application of regulations and license system effective in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area; and
  - c. Monitor and control the Authority's Management Plan and Operational Plan implementation.
8. Promote and encourage scientific and socio-cultural surveys, technical research and information collection in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area, including the promotion of ecotourism;
9. Cooperate with local administrative authorities and other stakeholders in enforcement of laws and regulations liable to affect the Authority's objectives in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area, including Special Conservation Areas and surrounding locations in the implementation of duty in the aspect of forestry and forest land under the own responsible areas;
10. Facilitate the improvement of living conditions for the multi-ethnic people living in and around the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area aimed at poverty reduction through sustainable and environmental friendly development in ways that are consistent with the Lao Government's Letter regarding the implementation of policy on Nam Theun 2 Project;
11. Enter contracts with different parties such as: hiring contracts with experts, universities, scientists and various conservation organizations in order to carry out scientific and socio-cultural research, implementation of activities, monitoring, and assessments in Nam Theun 2 Watershed Area and facilitate the implementation of the activities of the said- above parties;
12. Purchase, own and sell movable and fixed assets;
13. Receive assistance, donations and other assets, and to be the keeper and user of such assistance for investment and application in accordance with the Authority's objectives;
14. Open and manage bank accounts under its own name within and/or outside the Lao PDR in order to receive and disburse money received in compliance with the regulations of the Bank of Lao PDR;
15. Review, comment on and provide conditional or unconditional non-objection to proposed development projects in surrounding areas when such projects are deemed as liable to affect the Authority's objectives. In case of conflict the project proposing party shall submit such conflict to the Government for consideration or refusal of the project;
16. In compliance with the laws of Lao PDR, the Authority has the right to perform its functions within and outside the Lao PDR and has the right to cooperate with the parties concerned or other individuals as deemed appropriate by its Board of Directors such as right for forest and forest land inspections in accordance with the scope of their responsibilities; and

17. Execute and perform other duties that are compliance with the Authority' objectives, approval made by its Board of Directors. The Authority's powers and duties described under this Article shall not be restricted by the local administrative authorities except national defense and security matters.

The WMPA's organization structure has two main components, the Board of Directors and the Executive Secretariat. As there is no precedence for such an authority in the Lao PDR, the WMPA's relationship to other Government institutions requires continuing time to evolve and develop, such evolution being highly influenced by the new Decree and following conditions:

i) most of the NT2 Watershed/NPA is in Nakai District, and conversely most of Nakai District is in the NT2 Watershed-NPA;

ii) the mandate of the WMPA covers many of the functions of the range of Government agencies active at the local level, i.e., there is much functional overlap with District agencies which needs to be resolved;

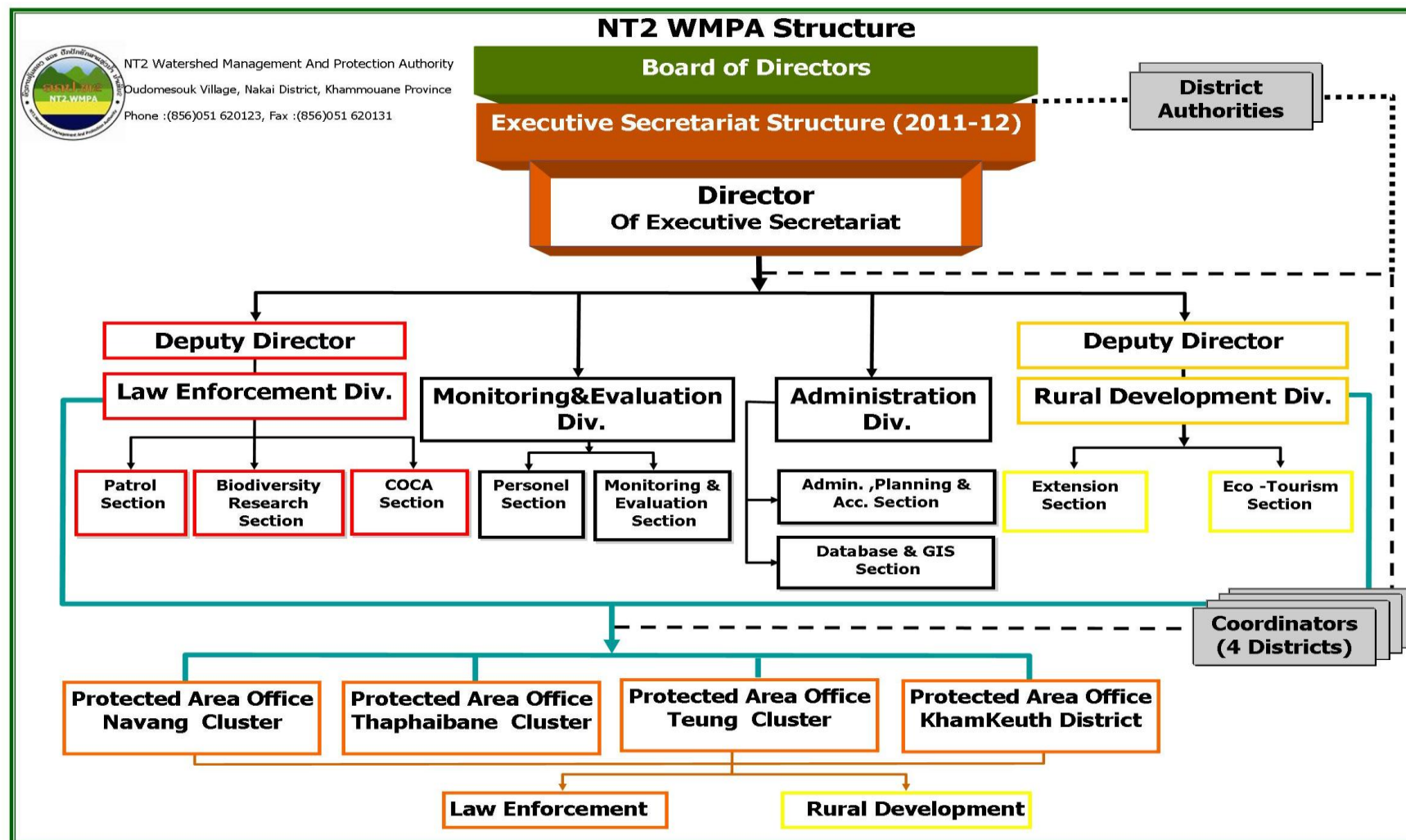
iii) the WMPA and RMU together will provide most, if not all, funds for development and basic support activities in 80% (n = 66 of Nakai Districts villages, and these funds will be far more than the District has ever dealt with before;

iv) the current capacity of Nakai District and its agencies is still challenged, and it will no doubt seek to strengthen its staff capacity. The risk of the Nakai District being overburdened with responsibilities and tasks exists as the hand-over of re-settlement villages approaches in 2014. As such, it will need considerable support in taking the lead role in implementation of the SEMFOP II for the NT2 Watershed/NPA. Under the new decree and the decentralization process the general organizational structure of the WMPA will undoubtedly evolve over time as well, and transition plans need to be set in place to manage these changes envisioned over the next 5 years of the SEMFOP II. Presently the NT2 WMPA consists of:

A: Board of Directors consists of representatives from multiple government agencies, both at local and central levels, and a nominee of NTPC, which is chaired by the provincial governor of Khammouane province.

B: Executive Secretariat, the operational unit of the WMPA, with a relatively large number of staff in the following units: i) a Directors Cabinet; ii) Operational Divisions; iii) Support Units and Field Offices (See Figure 3).

Figure 3 The NT2 WMPA Secretariat structure approved by the BOD's Agreement No. 643, dated 7 November 2011





## 1.8. CAPACITY NEED ASSESSMENT

Strengthening capacity building of the Authority and other Implementing Agencies<sup>2</sup> to effectively implement management activities is one of the WMPA's objectives specified SEMFOP. The Decree 471/PM states clearly that the WMPA plays the important role in coordination with other Implementing Agencies to ensure effective management of the NT2 watershed. The Implementing Agencies include Nakai DAFO and other government agencies who are and will be involved in implementation of management activities to achieve the goal of conservation and protection of values of the watershed. Therefore, the capacity of WMPA, DAFO and other Implementing Agencies needs to be periodically evaluated.

An initial questionnaire survey was made to assess the capacity building need of the WMPA and other Implementing Agencies, aiming to provide an update on current capacity and particular training needs. The assessment focuses not just only on the staff and skill levels, but also on staff composition and facilities that support management activities. Results are summarized in the following sections.

### 1.8.1. STAFF QUANTITY AND QUALIFICATION

#### 1.8.1.1 WMPA Secretariat

The table 2 indicates the current WMPA staff and their qualification. WMPA Secretariat consists of 66 staff (10 females and 56 males), of which 30.3% (n=20) is administrative staff, 65.2% (n=43) are technical staff, and 4.5% are supervision.

The majority of WMPA staff (more than 42.5%, n=28) hold Bachelor and High Diplomas, 4.5% (n=3) receive M.Sc. degrees, 39.4% (n=26) hold Mid-level certificates and vocational training certificates, and 13.6% (n=9) have no academic backgrounds such as boat and car drivers, guards, and office cleaners. At present, three key WMPA staff (Director and Deputy Director) have long experience and knowledge in natural resources management and rural development, and take the lead in designing and implementing programmed activities such as planning, managing, monitoring, researching, and reporting.

WMPA technical staff are composed of different fields of education backgrounds. Half of them are specialized in forestry, four are specialized in Livestock, two are Agronomy and Irrigation staff, one is from Gender Development Study (with MSc.), and one staff (with MSc.) is specialized in natural resource management. Other education background of WMPA staff is from Business Administration, Accounting, Civil Law, and GIS.

**Table 2: WMPA Staff Quantity and Qualification**

No.	Item	Quantity (Persons)	Percentage (%)
<b>I</b>	<b>Gender</b>		
1	Female	10	15.2
2	Male	56	84.8
3	Total	66	100
<b>II</b>	<b>Classification</b>		
1	Admin	20	30.3
2	Technical	43	65.2
3	Supervisor	3	4.5
	Total	66	100
<b>III</b>	<b>Qualification Level</b>		

<sup>2</sup> Implementing Agencies (or stakeholders) refer to agencies entering a contract with the Nam Theun 2 Watershed Management and Protection Authority for the execution of Management and Operational Plans. Such those agencies may include parties concerned, NGOs, and private or other entities without limitation.

1	MSc. Degree	3	4.5
2	BSc. Degree	11	16.7
3	High Diploma	17	25.8
4	Mid Level Certificate	21	31.8
5	Vocational Training Certificate	5	7.6
6	Non Degree	9	13.6
7	Total	66	100
<b>II</b>	<b>Specialization</b>		
1	Forestry	33	50.0
2	Other (Car/boat drivers, guards, housekeepers, cook)	13	19.7
3	Livestock	6	9.1
4	Accounting	4	6.1
5	Agronomy	2	3.0
6	Business Administration	2	3.0
7	Irrigation	2	3.0
8	Natural Resources Management	1	1.5
9	Gender Development Study	1	1.5
10	Civil Law	1	1.5
11	GIS	1	1.5
12	Total	66	100

### 1.8.1.2. Nakai DAFO

Nakai district includes a large proportion of the NPA and the Nakai DAFO is a key stakeholder in conducting most management activities. The table 3 shows a summary of Nakai DAFO staff quantity and qualification. The DAFO is consisted of 92 staff (23 females and 69 males), of which 45.7% (n=42) of them are fulltime government staff. The office also had recruited 2 contract staff and 48 volunteers, accounted for 2.2 and 52.2 percent respectively.

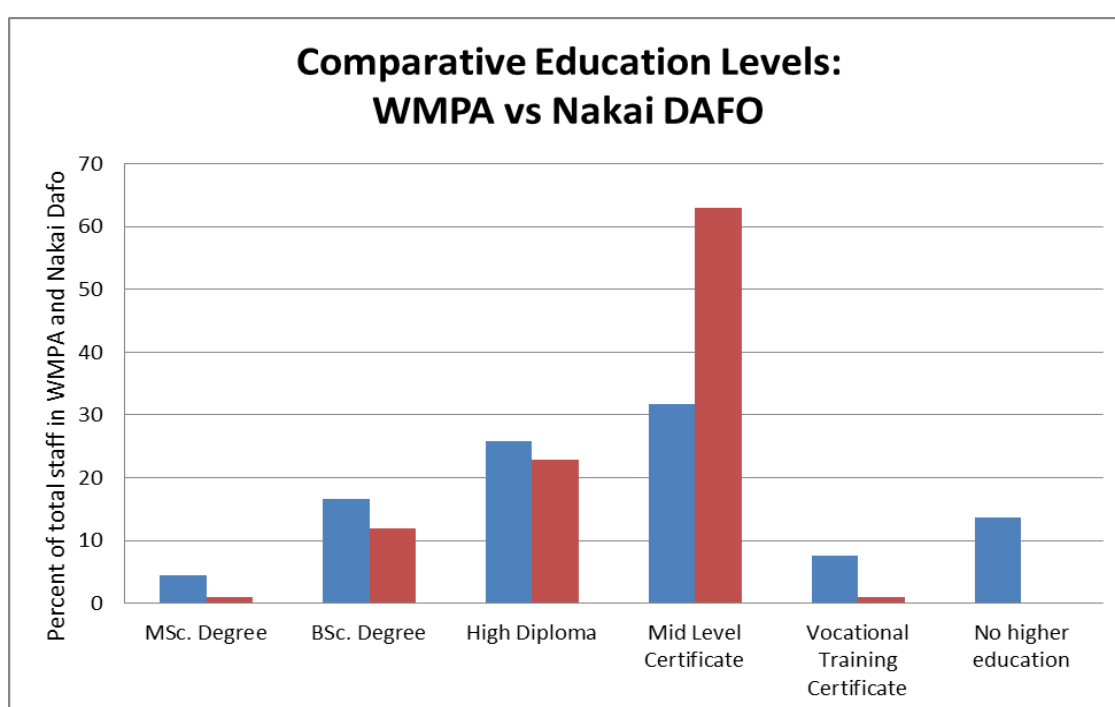
The quantity of DAFO staff is relatively high but staff qualification levels are also quite low. Most of them have hold High Diplomas and Mid-level certificates, accounted for 22.8% (n=21) and 63.0% (n=58), respectively. 12.0% (n=11) DAFO staff, held Bachelor Degrees, while only one staff has Master Degree. The staff specializations are in good proportion including agronomy, livestock, forestry, and irrigation, which are accounted for 33.7% (n=31), 22.8% (n=21), 39.1% (n=36), and 4.3% (n=4), respectively. These academic backgrounds are essential for NT2 Watershed Management in terms of implementing conservation and development activities under SEMFOP.

**Table 3: Nakai DAFO Staff Quantity and Qualification**

No.	Item	Quantity (Persons)	Percentage (%)
<b>I</b>	<b>Gender</b>		
1	Male	69	75.0
2	Female	23	25.0
3	Total	92	100.0
<b>II</b>	<b>Type of Employee</b>		
1	Fulltime government staff	42	45.7
2	Contract staff	2	2.2
3	Volunteer	48	52.2
4	Total	92	100.0
<b>III</b>	<b>Qualification Level</b>		
1	MSc. Degree	1	1.1

2	BSc. Degree	11	12.0
3	High Diploma	21	22.8
4	Mid Level Certificate	58	63.0
5	Vocational Training Certificate	1	1.1
6	Total	92	100.0
<b>II</b>	<b>Specialization</b>		
1	Agronomy	31	33.7
2	Livestock	21	22.8
3	Forestry	36	39.1
4	Irrigation	4	4.3
5	Total	92	100.0

In order to assist comparison of skill levels Figure 4 is provided below which shows the percentage of each agencies' staff at the range of education levels.



**Figure 4** Percentage of total staff in WMPA and Nakai DAFO at different education levels

Since much of the implementation undertaken by WMPA in the past has relied on the large number of staff in the middle education levels, the transfer of these staff to DAFO would significantly enhance their role as a key Implementing Agency. That many of these staff originated from Nakai DAFO or Khammouane PAFO and have received considerable capacity development during their tenure at WMPA would indicate that the capacity development transfer process is already in place.

### **1.8.2. STAFF CAPACITY PROBLEM ANALYSIS IN THE WMPA**

The WMPA had organized a one-day workshop on 19 October 2011 to review and evaluate its staff performance, and lesson learnt in the past five years. Also, the workshop focused on problem analysis of staff capacity within the WMPA, and the workshop results show as followings.

#### **1.8.2.1. Staff Capacity Problems**

Although the number of staff is not critically low (table 1), the WMPA has quite few staff with postgraduate and graduate qualifications, of which only one has education background in the subject of natural resources management, while others have academic background in forestry, livestock and gender development. Limited in both staff and skill levels, the WMPA has experienced inadequate professional staff in conducting and implementing science-based management and research. Staff changeover is another concerning issue, which is sometimes occurs in similar positions such as with the Accountant.

### **1.8.2.2. Impacts of Low Capacity of Staff**

Given the problems above the analysis lead to the following results;

- Inadequate understanding WMPA's vision, objectives, and purposes;
- Unclear about the roles and responsibilities, and also related legislation;
- Weakness in management ownership, and their commitment
- Weak analytical and management skills;
- Unable to identify target groups/beneficiaries for development of conservation models
- Improper management or inconsistency in field data/information including collection, storing, processing, reporting, and publicizing.

### **1.8.3. CAPACITY STRENGTHENING REQUIREMENT**

#### **1.8.3.1. Training Topics and Methods**

WMPA will be still operating for a long period. It will closely cooperate with Implementing Agencies such as DAFO, District Health Office, and District Education Office. To overcome the staff capacity problems, it is necessary to prepare both short-term and long-term staff capacity building plans for both WMPA and the Implementing Agencies.

In the short-term the training needs to emphasize problem analysis (e.g., conceptual model development), project planning and management, participatory planning and implementation process (PRA and RRA), data collection/processing/management/reporting, GIS, MIST, financial management, office equipment management, computer and IT application, and English language. In order to enhance efficiency and effectiveness of those trainings, the WMPA will recruit highly qualified staff to follow up and pass on those skills onto Implementing Agencies through provided on-job training.

In the long-run, WMPA needs to support and promote long-term staff education upgrading in Bachelor and Master levels in the necessary related fields such as Agronomy, Livestock, Agricultural Extension, Natural Resources Management, Wildlife Management, Rural and Community Development.

#### **1.8.3.2. Staff Performance Evaluation**

Staff performance will be evaluated towards the end of each one year contract (or on annual basis) by the secretariat director. This will ensure that staff application to works, and the effectiveness and technical quality of the work is up to the standard required by WMPA. Evaluation findings will be passed to the BoD for adjudication as to whether they will be continued or replaced. By doing this, the WMPA can identify staff who are lack of enthusiasm for the tasks or lack of obligation to the biodiversity and to the livelihoods of the watershed residents, and/or incompliance with regulations on management and accountability practices and the application of safeguards, and thus termination of his/her contract if necessary.

### 1.8.3.3. Facilities and Supports

Our experience indicates that protected area management capacity is not merely about the human resource capacity but also about whether there are adequate facilities and equipment necessary to enable the execution of proper management tasks such as office spaces with appropriate furniture, communication systems, equipments as well as vehicles (e.g., cars, boat, motorbikes).

The WMPA' headquarter is now located in the Nakai district, and its field coordination offices are based in three districts, namely Kham Kert, Boualapha, and Gnomalath, and also in three clusters inside the NPA. For all existing facilities and equipments and those to be replaced and purchased are as followings;

**Table 4: Facilities and equipment needs for WMPA**

No	Items	Existing (in SEMFOPI) <sup>a</sup>	Need to replace/buy (SEMFOPII) <sup>b</sup>
I	Transportation/communication		
1	Cars (1 Toyota Land Cruiser, 6 Toyota hylux, 1 Toyota minivan)	8*	3** (Toyota Hylux) to replace the old ones)
2	Boats with engines	10	6 (engines)
3	Motorbikes	10	6
4	Phone (radio) for ranger's station	0	12
5	Internet (head quarter, district, cluster)	1 set	Improving network
6	Fax/phone ((head quarter, KK, 1 cluster)	1 fax/3 phones	2 phones
II	Office equipment		
1	Computers (desktop)	20	5
2	Notebooks	11	2
3	Printers	18	4
4	Scanners	3	1
5	Photocopy	2	1
III	Field Equipments		
1	GPS	14	3
2	Compass	7	0
3	Cameras	17	0
4	Videos	5	1
III	Building		
1	Cluster offices	4	0
2	Ranger' stations, checkpoints	7	10
3	Visitor Center***	0	1

Note: <sup>a</sup> – items that WMPA has today (or purchased in SEMFOPI), <sup>b</sup> – numbers of items need to be purchased during the SEMFOPII to replace the old ones. \* – Three of six Toyota Hilux trucks, purchased in SEMFOPI, need to be sold out due to their bad condition associated with high maintenance cost. \*\* – 3 new Toyota Hilux trucks need be purchased during the SEMFOPII to add or replace the old ones. \*\*\* – renovate the existing building (known as restaurant) for exhibition and visitor center.

### 1.8.3. THE NEW WMPA' STAFF REQUIREMENT

To follow the PM' decree 471 and increase effective implementation of the SEMFOP2, based on the past experience and lessons more than six years of the watershed management, the WMPA will transfer some well-trained government staff who had a long experience with WMPA to relevant implement agencies, and will maintain approximately 35 qualified staff including three directors at WMPA to function its duties. Details are provided as followings;

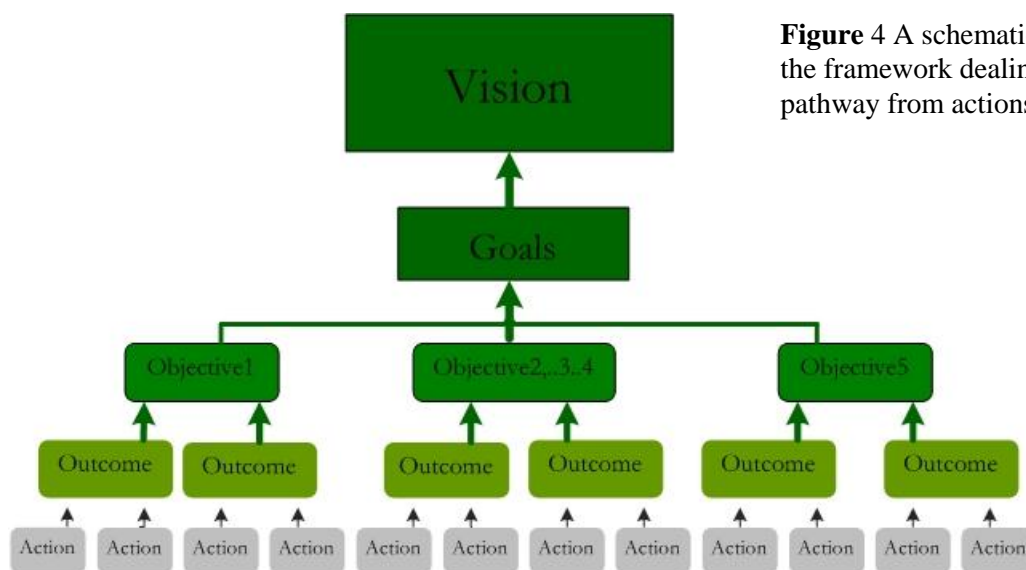
**Table 5: The required staff members for WMPA in the SEMFOP**

Sectors	Quantity	Qualification	Capability
Administration	7	BSc. in finance, administration	General office operation management, and financial management, tracking and reporting
Livelihood development for conservation	4	MSc., BSc. in rural development, agriculture	Capable of conducting CDD approach, PRA, data analysis, design, implement, M&E, reporting, coordination, management
Biodiversity Conservation	17	2 MSc., BSc. and high diploma in forestry, certificates in law enforcement	Capable of designing, patrolling, M&E, reporting, coordination, management, data analysis, communication of results
Conservation outreach	3	BSc. degree and certificates in conservation communication	Designing/conducting awareness campaign, coordination, management, reporting.
M & E	4	1 MSc. in gender development, 2 Bsc. in forestry and agriculture, 1 IT data base	Capable of leading in monitoring for biological, and livelihood, data base design/management, coordination, data analysis

# **PART 2: OPERATIONAL PLAN**

## 2.1 INTRODUCTION

The SEMFOP II's operational plan presents first the shared long-term vision for the century, followed by goals for five years, and thirdly, five main objectives to achieve the goals (Figure 3). The plan then identifies several realistic outcomes necessary to achieve the objectives, which are finally followed by specific actions considered as urgent or priority activities in the next five years (2012-2017, table 1). The SEMFOP II also addresses, depending on performance of the actions, according to systematic monitoring for both interventions and target conservation, that the plan needs to be regularly revisited during the next five years period, and that wherever necessary, and within the requirements of PM471 and therefore the CA<sup>3</sup>, outcomes or actions will be adapted (and added) to ensure that those realistic objectives are met given changing situations. The progress report of the SEMFOP I (2004-2011) was used as baseline for determining priorities in the next five years plan of SEMFOP II.



**Figure 4** A schematic diagram of the framework dealing with the pathway from actions to success

## 2.2 VISION

The national Growth and Poverty Eradication Strategy (2004)<sup>4</sup> shed light on sustainable development in that the

national development process must reflect ecological, economic, social, cultural and spiritual values of the local people. It also emphasizes that maintenance of healthy and productive forest ecosystems and sustainable use of natural resources are key to achieve the Lao government's goal for sustainable economic growth and poverty eradication.

***Vision: “A healthy forest ecosystem with its flora and wildlife diversity maintained and the cultures, livelihoods and well-being of its human inhabitants safeguarded and fostered across the Nam Theun 2 watershed.***

The management mandate given by the government to the WMPA, under PM's Decree 471 (2011), is the conservation and protection of biological and cultural values of the NT2 Watershed. In this regard, the WMPA has recognized that biodiversity, in addition to providing for food, fuel, shelter, medicine and livelihoods, provides the critical 'ecosystem services' on

<sup>3</sup> CA obligation (CA Vol 2A Sch No.4 Part 3 cl 2.3 (b) (ii) “to consult and plan with the Informed Participation of Stakeholders to prepare, implement, modify or amend Management Plans and Operational Plans”.

<sup>4</sup> The National growth and poverty eradication strategy of Lao PDR, 2004. *Vientiane: Prime Minister's Office*



which socioeconomic development depends. These services include air and water purification, soil conservation, disease control, and reduced vulnerability to natural disasters such as floods, droughts, landslides and pest epidemics. Biodiversity loss exacerbates poverty, and likewise, poverty is a major threat to biodiversity. So, poverty reduction will only be achieved with the maintenance of the nation's biodiversity.

The vision recognizes that biodiversity conservation and community development objectives need to be integrated and reconciled. The WMPA will ensure that any/all development activities within the watershed need to support for both the conservation of biodiversity and improvement of living condition and welfare of watershed inhabitants. Benefits, in form of both direct and indirect services, provided by healthy ecosystems will significantly contribute to the quality of life and health of people. Its unique biological and cultural diversities may make the area one of the most popular trekking destinations of tourism in Lao PDR. Tourism<sup>5</sup> is one of the fastest growing industries in the Lao PDR, contributing substantially to the overall growth of national economy, and ranked as a second after mining. It is envisaged that along with benefits generated from the NT2 hydropower, the watershed will provide an opportunity to generate additional income through nature-based tourism. In turn, this potentially provides villagers with the incentives to support an environmentally sustainable livelihood, and be used as a tool directly linked with conservation. Achieving our vision, and the NT2 watershed becomes a model for fostering the economic development that is ecologically, socially/culturally sustainable and balanced in Lao PDR.

## 2.3 GOAL

The overall goal of management for Nakai-Nam Theun National Protected Area is to restore, maintain and enhance the biodiversity, habitats and conservation values as well as the cultural values of the NPA in collaboration with the local communities and other key stakeholders AND THUS INTER ALIA TO HELP SECURE A sufficient volume of water with low sediment load, flowing into or from the Nam Theun 2 Reservoir. Within the next 5 years (October, 2012 – September, 2017), the WMPA aims to achieve these following goals;

- (i) Maintain/increase forest cover over the NT2 watershed area, with a particular focus on rehabilitation and management of riparian vegetation and sustainable use of riparian ecosystem. Although forest cover across the watershed area is targeted, the WMPA will work with DAFOs, Natural Resources and Environment Offices, and local villages to focus our efforts on rehabilitation and maintenance of riparian habitats and enhance sustainable management of riparian ecosystem to protect river banks from erosion.
- (ii) Maintain and increase biodiversity and its habitat with particular reference to populations of rare and endangered wildlife species. The WMPA will focus its conservation efforts on the increased effective control of poaching by engagement of all stakeholders to conduct strategic patrolling in high biodiversity conservation area through the integrated foot-patrols and biological monitoring, and conduct routine and responsive patrols along routes inside and outside the watershed areas, and areas unchecked by rangers' stations across the NT2 watershed area
- iii) Improve livelihood of local people living inside and around the watershed through community driven development approach. WMPA will work with concerned government agencies to support local livelihood development through the community driven development approach by conducting annual need assessment at 31 villages inside the watershed area, and peripheral impact zone prior annual planning and allocation of fund for extension of livelihood activities. However, attention is given that any livelihood extension activities do not degrade

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<sup>5</sup> *The National Ecotourism Strategy and Action Plan 2004-2010.*

biodiversity and its habitat, and all decisions are made according to shared commitment or recognition of legitimacy of fair, effective and sustainable alternatives.

(iv) Strengthen capacity and ownership of both local people and other government stakeholders, including the Implementing Agencies<sup>6</sup>, in sustainable management of natural resources. The mandate given by the government to WMPA is to work with local people and Implementing Agencies to ensure sustainability of both biological diversity and living condition and welfare of watershed inhabitants. The WMPA believe that the NPA and the watershed will ultimately have to be managed by the local people themselves in perpetuity. Therefore, the focus is on building local capacity, both at the institutional and individual levels, for Implementing Agencies to ensure they take lead in most management activities, and meet standards required by WMPA and stakeholders.

## **2.4 OBJECTIVES**

Given challenges outlined above (Section 4), the SEMFOP II aims at strengthening the effectiveness and the progressive achievement of the following five major objectives, which already detailed in the SEMFOP I (specified in Article 4 of Prime Minister's Decree 471, 2011 and also in Article 6 of PM's 471, 2011). Even though the WMPA has made stride towards achieving those major objectives to some extent over the past five years, its experiences suggest that effectiveness of management interventions need to be strengthened.

### ***Objective 1. Protection and Rehabilitation of Forest Areas***

One key management objective given by the government to WMPA is the protection and rehabilitation of forest in the NT2 watershed/NPA to guarantee sufficient volume of water with low sediment load, flowing into or from the Nam Theun 2 Reservoir.

The first SEMFOP made progressive achievement toward this objective, and this SEMFOP II will focus on both protection and rehabilitation of forest cover throughout the watershed area, but particular attention is given to enhanced protection and management of riparian vegetation along rivers or streams to protect stream-bank erosion. The outcomes to be achieved for this objective include:

- i. Forest cover and forest types including riparian habitat are identified, maintained and sustainably managed
- ii. Land use planning and land allocation for villages inside NPA and PIZ are completed and effectively managed
- iii. Conservation zones including Totally Protected Zones (TPZ) and Controlled Used Zones (CUZ) are identified, zoned, and effectively managed
- iv. Regeneration of native vegetation in degraded land (e.g., in unstocked forest) and along river or stream banks is enhanced
- v. Human induced stream-bank erosion through direct activities, livestock or agricultural techniques and controlled and managed, and existing zones or human induced erosion are rehabilitated.
- vi. Monitoring system of forest protection and rehabilitation is established and fully operated

(For detailed activities can be found in the Annex 1)

### ***Objective 2. Conservation of Bio-diversity***

This objective is to conserve, maintain, and protect the biodiversity and its natural ecosystems in the Nakai- Nam Theun National Protected Area and Nam Theun 2 Watershed Area, particularly to facilitate the maintenance and increase in naturally occupied populations of plants and animals, and the conservation or multiplication of habitats of rare, endangered or near extinct wildlife and aquatic life species.

The experience in SEMFOP I suggests that improved effective law enforcement, coordination and cooperation among stakeholders, and strict control of trans-boundary crossings and PIZ' villagers are identified as the utmost urgent priorities at the present, while systematic monitoring and scientific research need to provide important information for evaluating the progress toward to the objective and goals or to know where we are now, and also to assess that resources are worthy spent, i.e., payment is based on good performance, not on the regular monthly-basis.

The outcomes to be taken in the next five years include:

- i. Scientific sound research by suitably qualified research institutions for fauna and flora species' occurrence, abundance and distribution are supported through provision of permits and logistical support.
- ii. Priority areas important for key wildlife are identified and effectively managed
- iii. Fish stocks and riparian vegetation, are established and effectively managed to ensure their sustainability and subsequently, good water quality.
- iii. Critical, special conservation areas are identified, and zoned accordingly to maintain biodiversity values
- iv. Outreach activities are strengthened to increase awareness of laws and regulations for both local communities and government officials.
- v. Legislative protection of key fauna and flora species, and their habitats are developed and approved
- vi. Improved patrolling regimes at local levels to strengthen effective law enforcement
- vii. Focused anti-poaching patrol of key forest sites using the integrated biological monitoring and foot patrols, and intelligence-driven control of illegal trades in wildlife and other forest products are improved.
- viii. NPA's TPZs and CUZs are zoned, boundary demarcation are completed, and regulations are developed, monitored and enforced
- ix. NPA's management tools are developed based on best practices and lessons learnt.
- x. Strengthened local capacity building, both at the institutional and individual levels, to meet NPA's conservation and management objectives
- xi. Increased trans-boundary enforcement coordination, and cooperation to reduce trans-boundary incursion by Vietnamese
- xii. Monitoring of patrolling efforts and threats using MIST

### ***Objective 3. Sustainable Livelihoods Improvement***

This objective ensures the facilitation of improved livelihoods for the multi-ethnic inhabitants in the Nakai-Nam Theun National Protected Area and Nam Theun 2 Watershed Area through the community driven development approach by focusing on poverty reduction through environmentally and culturally sustainable development and those development activities must be undertaken within the framework of participatory integrated conservation and development, and participatory NPA management. This SEMFOP II is built on the past experiences, which

focus on improvement of food security and well-being for the watershed inhabitants through enhancement of sustainable management of natural resources and supporting development activities that are environmentally friendly, and are of urgent needs for local villagers. To move forward socio-cultural research will be needed on such topics as indigenous knowledge pertaining to the environment, local land and water use production systems, and the social organization of the different ethnic groups.

The major outcomes to be achieved include:

- i. Strengthened empowerment of local communities using community driven development approach to encourage local participation in planning and making decision process, and consequently enhance the integrated biodiversity conservation and livelihood development.
- ii. Improved livelihood of the watershed inhabitants, based on annual-based assessment of needs, with a major focus on the increased food security through enhanced sustainable management of natural resources and improved agricultural productivity.
- iii. Quality of life of the watershed inhabitants are elevated through improved sustainable social development (e.g., participation in village planning, good health, improved education, higher levels of nutrition, and increased gender awareness), market access, and environmentally cared infrastructure including electricity.
- iv. Livelihood monitoring by conducting annual socio-economic data at household level in target villages, and consultative workshops to assess progress toward achieving both conservation and development goals are established and functionally operated.

#### ***Objective 4. Institutional and staff Capacity Building of WMPA and Implementing Agencies***

Continued capacity building and strengthening of the Authority and other stakeholders to effectively implement management activities is a focus of the WMPA. In the SEMFOP II, following the Decree No. 471/PM, the NPA management activities are largely decentralized to local government agencies and villagers for implementation. However, the WMPA will take the lead in coordination with all Implementing Agencies to ensure smooth and effective transition of management interventions, providing technical training if necessary, and improve monitoring capacity of WMPA and other Implementing Agencies (both institution and staff) for measuring the progress or success of both conservation and livelihood activities toward the objectives and goals of the watershed conservation.

The major outcomes are:

- i. Institution transitional plans developed through a series of consultation workshops, assessment of readiness and training needs, and development of Term of References and contract.
- ii. The NT2 WMPA capacity, both institution and staff qualification, are strengthened, capable of working and coordinating effectively with local communities and other stakeholders, and also oversee capacity building requirement of stakeholders.
- iii. Improved other government institutions and staff qualification in implementing SEMFOP II and other participatory management tasks.
- iv. Improved village institution and individual's capacity to strengthen ownership and participation in management of NPA and the watershed.
- v. Increased institutional capacity building in monitoring of efficiency and effectiveness of conservation interventions

#### ***Objective 5. Effective Management of Funds***

Strictly manage the financial resources of the Authority, (income, expenditure, cash reserve and other assets) and effectively use the Fund in order to realize the Authority's above-mentioned objectives.

The key outcomes to be achieved are:

- i. Qualified personnel, both long-term and short-term, in executing the WMPA management tasks
- ii. Increased efficiency and effectiveness of using and managing funds
- iii. Efficient, effective systems, procedures and policies are operational and consistent with donors and government requirements for the realizing of NT2 WMPA objectives.
- iv. Improved systematic monitoring for effectiveness and efficiency of fund management.

## **2.5 IMPLEMENTATION OF MANAGEMENT PLAN**

The recent Prime Ministerial Decree No. 471 emphasizes clearly that the NT2 WMPA acts as a focal for coordinating in the implementation of all other sector activities in the NT2 watershed management area. This implies that most of the watershed management interventions need to be implemented by the local government agencies as well as other organizations including NGOs. The authority has the right to summarize and prioritize proposed programs, plans, and project of concerned sectors, and based on those documents to allocate the budget and technical assistance to support and assist the concerned sectors to implement them. The WMPA shall have the powers and duties to monitor and evaluate the implementation of those activities and to report to the government.

SEMFOP's overall strategy is to create an effective Watershed Management and Protection Authority that can work effectively with local communities to implement a range of programs to protect the watershed. Although SEMFOP II is built upon the SEMFOP I and continues to contain and support the three core programs identified below.

### **2.5.1 SEMFOP II STRATEGY: FOCAL ACTIVITIES**

The SEMFOP II is built upon the SEMFOP I and continues to contain and support the three core programs:

1. Forest and Land Use Planning, Allocation and Management at the village and NPA levels;
2. Biodiversity Resource Survey, Monitoring, Research and Protection;
3. Village Livelihood and Social Development.

In addition to these core programs, SEMFOP II considers at least three other functions, as important in achieving the goals of SEMFOP:

- i. Community Outreach and Conservation Awareness;
- ii. Special Conservation Area Management;
- iii. External resources to supplement and support core funding.

The identification of the functions and tasks of the SEMFOP II required to achieve the WMPA's goals is based on a balanced, integrated approach to Protected Area Management. This approach focuses on the need to find a balance between regulation enforcement and community participation, between sustainable forest and land use planning and conservation and village development, and of building partnerships between local stakeholders in the management of Protected Areas.

The main elements of the development strategy which will continue to be applied as in the first SEMFOP are to:

- a) seek to steadily improve food security for NPA and PIZ villagers;
- b) recognize customary rights by providing villages with usufruct rights of their areas and improve the management of natural resources through realistic and effective land and forest use planning and management;
- c) foster the diversification of livelihoods and land use patterns towards more sustainable livelihood and farming systems according to villager needs and aspirations;
- d) avoid development of inappropriate infrastructure such as vehicular roads, electrification networks, and the like;
- e) develop and support appropriate, water based access into and out of the NPA, and good track access between key village in the NPA;
- f) maintain current population levels, or less, by family planning, the control of in-migration and facilitating out migration through upgrading villager capacity; and
- g) improve health and education levels, and village institutions in line with their cultural and ethnic heritage and identify.

*Management of an NPA based on all these principles can certainly be effective, but only if the integrated conservation and development functions are clearly presented in activity plans and the linkages between them explicitly understood and incorporated in the programs.*

Please be noted that the implementation of this SEMFOP II will refer to overall approach and methodologies detailed in the SEMFOP (see SEMFOP I Report). All management tools provided in the SEMFOP will be guided management activities identified in SEMFOP II.

## **2.5.2 SEMFOP II STRATEGY: IMPLEMENTATION APPROACH**

### **2.5.2.1 ADAPTIVE MANAGEMENT APPROACH**

These new management actions or solutions to the complex problems faced recently by the NT2 watershed in this SEMFOP II are created by multiple concerned stakeholders, including local villagers, village cluster's heads, district, provincial, and WMPA's staff, coming together to share experience, insights, and understanding, and to make decision what need to do in the future. Therefore, this management plan should function as a guide, a tool and incentive for the management team (i.e., WMPA and other stakeholders) to work efficiently and effectively towards the clear goal of conservation and protection of the watershed biodiversity and cultural values to guarantee long-term adequate water flow with low sedimentation to the NT 2 reservoir.

However, successful implementation of this SEMFOP II will depend on effective feedback and learning process. This involves continual improvement of management strategies and practices by learning from the outcomes of the application based on the combination of sound scientific and socio-economic information. In the sprit of adaptive management, the WMPA want to conduct systematic monitoring to serve the need of the project and team, helping the team learned from experience and integrated those lessons into management planning and decision making. Given a monitoring result, we are able to measure what the effects of the actions prescribed in the plan is and whether they are combining to achieve the objectives and attain the goal, thus adapt and modify them in line with changing circumstances.

### **2.5.2.2 APPLICATION OF GUIDELINES IN THE GLIP**

The Government of Lao PDR (GOL) agreed to an implementation framework, set out in the Government Letter of Implementation Policy (GLIP, 2005), to guide project implementation (see detail in Annex 6). The GLIP focuses on five areas in particular: (i) revenue management; (ii) environmental and social performance outcomes; (iii) consultation and participation; (iv) monitoring and evaluation; and (v) activities complementary to the NT2 project. The GLIP was approved by the WB's Board on March 31, 2005 and by the ADB's Board on April 4, 2005. The ADB, Nordic Investment Bank, European Investment Bank, COFACE, Agence Française du Développement (AFD) and the International Development Association (IDA) participated in the mission, which took place February 20-24, 2006. The "Decision Framework for NT2" called for; (i) establishing and implementing a viable development policy framework and program for poverty reduction and for environmental protection; (ii) ensuring that the technical, financial, implementation, and economic aspects of the proposed project, as well as the design and implementation of safeguards policies, are sound; and (iii) obtaining broad understanding and support from the international donor community and global and local civil society for Lao PDR's poverty reduction program and the proposed project.

### **2.5.2.3 ENSURING COMPLIANCE WITH THE CA OBLIGATIONS ASSIGNED BY GOL TO WMPA**

Whilst the WMPA's CA obligations as assigned by the GOL are summarized below the definitive reference is the NT2 Concession Agreement 2005, as amended, and should therefore be referred to when elaborating on these responsibilities.

In brief the WMPA responsibilities are agreed between the GOL and NTPC to be:

- (a) the NT2 WMPA Decree is promptly implemented in accordance with the provisions thereof; and
- (b) the NT2 WMPA at all times observes the provisions of the NT2 WMPA Decree which are applicable to it and duly performs its functions thereunder, namely:
  - (i) to co-ordinate and manage all activities in the management and operational plan in accordance with the NT2 WMPA Objectives and participate in the decision-making process or approval for all activities in the PIZ that may impact on the NT2 WMPA Objectives and environment within the NT2 Watershed Area and the PIZ such as construction of industrial plant processing, mining activities, road building, logging and other activities that are subject to the Authority's comments and no-objection;
  - (ii) to consult and plan with the Informed Participation of Stakeholders to prepare, implement, modify or amend Management Plans and Operational Plans consistent with the NT2 WMPA Objectives;
  - (iii) to prepare detailed annual budgets based on the Management Plans and Operational Plans; (iv) to co-ordinate, facilitate, and as necessary, fund implementation of the Management Plans and the Operational Plans by the Implementing Agencies;
  - (v) to receive, disburse and account for moneys paid to the NT2 WMPA by the Company and other donors to implement activities in accordance with the NT2 WMPA Objectives;
  - (vi) to coordinate with the Company and National Protected Areas with regard to water usage rights and not allow any activity that may impact on the said rights by the following measures:

- (A) developing rules and regulations, systems of permits and licences applicable in the Nam Theun 2 Watershed Area for activities which may impact on the NT2 WMPA Objectives;
  - (B) enforcing and monitoring enforcement of such rules and regulations, systems of permits and licences applicable in the Nam Theun 2 Watershed Area; and
  - (C) monitoring implementation of Management Plans and Operational Plans of the NT2 WMPA;
- (vii) to promote and support the carrying out of scientific surveys, technical research and data collection in the Nam Theun 2 Watershed Area and the PIZ including ecotourism;
  - (viii) to collaborate with local authorities and agencies concerned in the enforcement of laws and regulations against any activity that may impact upon the NT2 WMPA Objectives in the NT2 Watershed Area including in the Special Conservation Area and the PIZ;
  - (ix) to facilitate improved livelihoods for inhabitants of the Nam Theun 2 Watershed Area by focussing on poverty reduction through environmentally sustainable development; and
  - (x) to perform such other activities consistent with the NT2 WMPA Objectives as may be approved by the Board of Directors,

In the CA the GOL has verified that it has prepared and developed the SEMFOP in order to create during the period thereof a prioritised and focussed work program to serve as the first Management Plan and Operational Plan contemplated by the NT2 WMPA Decree. GOL has also committed to ensuring that the NT2 WMPA prepares and develops MFOPs and OPOPs for implementation as contemplated by the NT2 WMPA Decree.

The GOL has agreed that it shall ensure that the NT2 WMPA incorporates the following regulatory activities into the OPOPs:

- a) control of shifting cultivation in the Nam Theun 2 Watershed Area;
- b) control of logging in the Nam Theun 2 Watershed Area;
- c) control of hunting and other measures to protect wildlife in the Nam Theun 2 Watershed Area;
- d) registration of guns in the Nam Theun 2 Watershed Area;
- e) control of use of fertilisers in drawdown zones of the Reservoir; and
- f) registration of boats in the Reservoir Area.

The WMPA also assumes responsibility for a number of activities initiated by NTPC as part of the Environmental Measures described in CA Vol 2A Sch No.4 Part 2 clause 9. These include:

- a) In subsection 13: Wildlife program element B – Fish impacts in upstream and downstream rivers. The CA requires that the GOL (through the NT2 WMPA) will take over responsibility for undertaking special species and habitat monitoring in the NPA and corridors from the Company one year after the Commercial Operations Date (COD). Although this date occurred on 30 April 2010, NTPC agrees that it is yet to complete is planned activities under this program and these will be handed over to WMPA on the conclusion of the report by the Fish Biodiversity specialist, Maurice Kottelat around mid-2012.
- b) In subsection 14: Wildlife program element C – Terrestrial animals in the inundation area. The CA requires that the GOL (through the NT2 WMPA) will take over the post-impoundment species management plan for the NPA and corridors at least one year after the Commercial Operations Date. The end of the NTPC obligations will



occur with the release of the final report of the Senior Ecologist, Robert Timmins, which is expected in quarter 1 of 2012.

- c) In subsection 15: Wildlife program element D – Development of a transitional strategy for Reservoir impoundment. The WMPA is responsible for taking responsibility for this plan's implementation one year after COD, however no elements of the plan are presently required.
- d) Under subsection 16: Asian Elephant Program, the responsibility for this program rests with NTPC for the whole of the Concession Period. NTPC, however, has contracted WMPA to maintain the eight artificial mineral licks that have been constructed within the NNT-NPA. The other part of this program, Human Elephant Conflict, and managed under contract by the Nakai DAFO.
- e) In subsection 17: Wetland conversion and formation – The GOL (WMPA) will take over the post-impoundment species management for the NPA and Corridors, and Special Conservation Areas one year after the Commercial Operations Date. The GOL (WMPA) will be responsible for patrolling the Special Conservation Areas of the Reservoir the pre and post impoundment, and for implementing their licensing and permitting program, some of which have conservation implications, in the area of the Reservoir outside of the Special Conservation Areas.
- f) In subsection 18: Control and enforcement of wildlife protection. Hunting controls shall be introduced and enforced by the GOL in the Resettlement Areas. WMPA is not referenced in this section and it is assumed that this is the responsibility of the Nakai DAFO.
- g) In subsection 19: Wildlife program element E – Adaptive management program. Under this obligation the WMPA and NTPC (EMO) jointly chair the Wildlife Adaptive Management Committee which meets regularly to discuss the findings of the wildlife studies, patrolling effectiveness and to make recommendations for improving the effectiveness of wildlife programs as required under this CA section. This work will continue throughout the life of this SEMFOP II.

#### **2.5.2.4 APPLICATION OF THE WORLD BANK SAFEGUARDS**

The World Bank safeguards requires the WMPA to consider carefully protected area values, including minimizing potential negative effects on natural, social, economic and cultural features, deciding whether and how to implement most project activities. The legal requirements are presented in the World Bank Safeguards (See detail in Annex 7), and some key issues to be taken into account include;

1. Environmental Assessment is used to identify, avoid and mitigate the potential negative impacts associated with the Bank's lending. The World Bank's environmental assessment policy and recommended processing are described in Operational Policy (OP)/Bank Procedure (BP) 4.01: Environmental Assessment. This policy is considered to be the umbrella policy for the Bank's environmental 'safeguard policies'.

2. Natural Habitats: The Operational Policy 4.04 seeks to ensure that World Bank-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats provide to human society. The Bank's current forests policy (Operational Policy/Bank Procedure 4.36) aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development. The new proposed Forest Strategy suggests three equally important and interdependent pillars to guide future Bank involvement with forests:

- Harnessing the potential of forests to reduce poverty,
- Integrating forests in sustainable economic development, and
- Protecting vital local and global environmental services and forest values.

3. Physical Cultural Resources: Cultural resources are important as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. The loss of such resources is irreversible, but fortunately, it is often avoidable. The objective of OP/BP 4.12 on Physical Cultural Resources is to avoid, or mitigate, adverse impacts on cultural resources from development projects that the World Bank finances.

4. Involuntary Resettlement: The Bank's Operational Policy 4.12: Involuntary Resettlement is triggered in situations involving involuntary taking of land and involuntary restrictions of access to legally designated parks and protected areas. The policy aims to avoid involuntary resettlement to the extent feasible, or to minimize and mitigate its adverse social and economic impacts. It promotes participation of displaced people in resettlement planning and implementation, and its key economic objective is to assist displaced persons in their efforts to improve or at least restore their incomes and standards of living after displacement.

5. Indigenous Peoples: The World Bank policy on indigenous peoples, OD 4.1, Indigenous Peoples, underscores the need for Borrowers and Bank staff to identify indigenous peoples, consult with them, ensure that they participate in, and benefit from Bank-funded operations in a culturally appropriate way - and that adverse impacts on them are avoided, or where not feasible, minimized or mitigated.

## 2.6 MONITORING AND EVALUATION

Monitoring is the collection of data and information in a consistency manner over time. Consistency is most important because it allows comparison of results over time, and from place to place. Through monitoring, we are able to learn, and share information about success or failures and adapt as necessary and as resources are available, thereby improving our ability to manage the protected area successfully. Most importantly, monitoring allows us to measure the success of efforts in meeting conservation and development objectives outlined in SEMFOP II, and evaluating if conservation and development resources are well spent. Monitoring tracks changes over time and this distinguishes it from a survey, which estimate conditions at a single point of time. Instead monitoring uses survey results at many instances in time.

Monitoring supports the assessment of effectiveness of management actions in two ways;

- To evaluate implementation of the management actions.*** This type of monitoring is an audit of performance to determine if activities given in the management plan were carried out, “did we do what we said we would do?”. This examination shows the degree of management plan implementation and allows us to assess whether the remaining actions are still relevant and sufficient to guide implementation or there is a need for a re-write to establish new actions. In this regard, the progressive achievement of actions in SEMFOP II can be assessed by using indicators specified in Annex 1.
- To determine the effectiveness of management actions.*** This monitoring is to track progress over time toward the goals and objectives laid out in the plan. Monitoring provides a means to establish the baseline condition of specific value in the protected area and track change in the condition of those values over time, thereby allowing assessment of whether or not threats are decreasing or whether our interventions actually lead to what we want to achieve or if they are wasted efforts. In this management plan, the improved states of forest cover with a

particular reference to riparian vegetation, key wildlife populations, and community livelihood are the ultimate indicators of success of this SEMFOP II. As a result, the monitoring is designed for assessing the effectiveness of both conservation interventions and target as described below.

### **2.6.1 MONITORING OF LAW ENFORCEMENT (MLE) AND THREATS**

MLE provide regular information about status of threats and capacity of management to effectively respond to those threats. MIST (Management Information System) is an information management tool designed for ranger-based law enforcement monitoring. For example, changes in illegal activity are reflected in shifts in the spatial distribution of encounters with poachers and illegal camps, snaring or trapping incidents, illegal logging or forest clearance. Accurate and timely reporting via MIST helps to inform and alert PA managers of these changes, allowing teams to alter their enforcement strategy through changes in the allocation of resources to the new hotspots, thereby improving the effectiveness. In this regards, indicators of LE effectiveness are not just to focus on patrol efforts, e.g., number of days or kilometers of walks, but rather on numbers of snares/traps encountered in the forest as well as numbers of poachers caught or arrested, apprehended, and persecuted.

### **2.6.2 MONITORING OF LIVELIHOODS**

Given the complexity of the WMPA's interventions, to foster quality delivery and performance and to track progress and achievements of the interventions on the ground, monitoring of livelihood is sufficiently essential.

Monitoring of livelihood concerns regular routine information collection of WMPA's interventions such as activities, outputs, outcomes, and impacts which are stated in the Matrix. The main question to be answered by the monitoring is "Are we doing things right?" Therefore, we need to monitor the progress of the livelihood improvement through community empowerment, food security, income generation, and villager quality of life.

In order to deliver effective monitoring, WMPA will setup a section in the M&E unit to be responsible for specifically monitoring of livelihood. The staff in the section will have the mandates in designing M&E framework, M&E annual work plan, data collection tool, database system, data analysis, and report. Thus, this unit must consist of a qualified staff to handle the responsibility. As NTPC is already undertaking extensive monitoring of these parameters, WMPA will seek to identify any aspects of their work that can inform the development of an efficient and informative monitoring system that allows some level of comparison with the resettled community.

### **2.6.3 MONITORING OF CONSERVATION TARGET**

Forest and biodiversity values are the primary beneficiary of this plan so the success of any conservation actions will be reflected in their status (percentage of cover, abundance and distribution) and dynamics. So, indicator of success should normally be measured in forest cover and its change, and occupancy and abundance of selected key wildlife species to assess whether they improve when our interventions are implemented successfully. For example, are Saola numbers increasing as a result of the reduction of snares or outsiders? As these wildlife data are so difficult to obtain and the magnitude of the results so small, changes in their values will be of little value unless they are quite dramatic. Sighting the first Saola in an area over a given period will be significant in that their continued existence is confirmed. Seeing an additional two or even five would not be able to be interpreted in terms of management success or their ongoing viability since there is no intrinsic evidence that the threats are removed and they could not be hunted out the next day. For that reason the WMPA will focus its efforts on the protection of key habitats from poaching with biodiversity monitoring being used to hone the knowledge base on where key species exist and therefore on where patrolling effort should be concentrated.

### **2.6.3.1 MONITORING OF FOREST COVER**

The aim of monitoring forest cover and land use change in the Watershed is to detect improvement in forest cover including riparian vegetation through mapping and measurement. It is expected that this can be used as a proxy for the effectiveness of conservation interventions to increase forest protection and rehabilitation resulting from land use planning and allocation, sustainable livelihood development, conservation outreach, and law enforcement. Forest cover and change monitoring approach involve performing analyses using relatively high resolution satellite imagery, such as Landsat data, to map the forest cover extent and forest types. Advance tools such as remote sensing coupled with GIS (Geographic Information System) is reliable for monitoring changes in land cover at the local level. Our attention will be given to estimates of baseline forest cover through conducting surveys which include the use of satellite imagery with extensive ground truth survey efforts to ensure that interpretation of satellite imagery accurately reflects the reality on the ground. In order to make it consistent, a technical report of forest cover analysis will be produced so that the team can follow and ensure the baseline information is reliably made. Recently, analytical tools are already available for REDD's projects (e.g., at the Forest Inventory and Planning Division, FIPD) so they should be useful guidance in monitoring forest cover and land-use change.

### **2.6.3.2 MONITORING OF WILDLIFE BIODIVERSITY**

#### ***2.6.3.2.1 CAMERA TRAP SURVEY TO OBTAIN WILDLIFE BASELINE DATA***

The camera trapping surveys were already designed and conducted in the four 200 sq. km sampling blocks across the NNT NPA in 2007-2008, and using occupancy model framework to generate occupancy rate, detection probability, distribution and abundance of wildlife species. The past experience suggests that the results are too small to infer anything and cannot inform management planning and decision making. So, in the SEMFOP II, given the current level of threats to the watershed, i.e., increased illegal harvests of timbers, NTFPs, and wildlife, the biological monitoring will aim to increase patrolling effectiveness to overcome those emerging threats rather than efforts to estimate abundance of wildlife populations. Camera trapping surveys with little statistical design will be conducted within high priority sites throughout the watershed area to support the ground coverage by foot-patrolling teams, allowing them to focus their efforts on strategic locations where poachers targeted, and thereby increase detection probability of illegal activities (i.e., snares, traps, poachers). Most important, the monitoring here will provide feedback, both wildlife and human threat information, in the timely manner, upon which the management planning and decision making can be made (i.e., payment must be based on performance rather than monthly regular basis), and then law enforcement (as well as other conservation interventions) can be adapted accordingly to meet the emerging threats.

#### ***2.6.3.2.2 LINE TRANSECT SURVEY TO OBTAIN PRIMATE AND OTHER ARBOREAL WILDLIFE POPULATION ESTIMATE***

Although line transect samplings were already set up sparsely across the NNT NPA, and the first ground surveys were undertaken by WMPA' Monitoring team in 2007-2008. Again, for SEMFOP II, the line transect surveys will be applied, when appropriate, at high priority sites to improve ground patrolling efforts, and/or for conducting scientific research of some targeted species at target sites.

### **2.6.4 DATA MANAGEMENT, DOCUMENTATION AND COMMUNICATION**

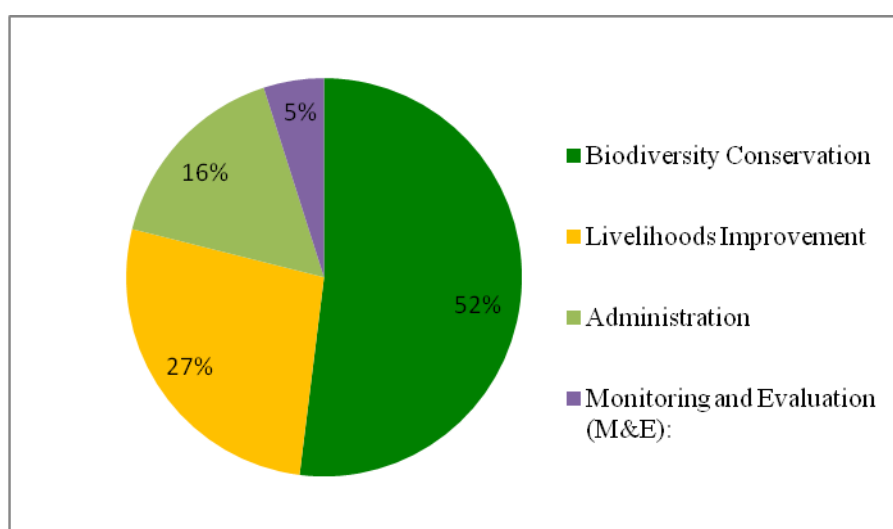
One of most important tasks in monitoring is that a system of storing and managing field data is required to ensure both integrity and quality of data is maintained. Field data are first recorded in notebooks or on hard-copy forms, then a system will be made available that transcribes these data into an electronic format that can be stored on a central computer. For example, MIST is used for ranger-

based law enforcement data and Excel-based or Access-type database is used for biological and socio-economic data. However, the database will be regularly backed up and the backup copy stored on a separate computer or location, to ensure that data is protected against any computer breakdown or virus. This will greatly facilitate and speed-up data analysis as well as ensuring that data is not lost following general deterioration or wear and tear of paper forms.

Data analysis and communication of results to the key decision makers or stakeholders in a timely manner are absolutely critical in management implication because the results can be used to adapt or modify management strategies to ensure that all hard work, time and efforts will put into the right hotspots. However, in order to ensure its reliability and utility for management, the results of monitoring data will be reviewed by an independent or scientific technical advisor or group.

## 2.7 BUDGET

The budget is allocated according to the annual installment of US\$ 1,200,000 from the NTPC. Approximately 52% of the total budget is allocated for forest protection and rehabilitation, and biodiversity conservation, in which it includes also US\$300,000 to pay back the front loaded fund to NTPC during the first three years (see Figure 6, and details in Annex 2), 27% of the budget is allocated for livelihood improvement, 16% is for administration, five percent is allocated for overall program monitoring and evaluation.



**Figure 6** The five years budget allocation for WMPA

# ANNEXES

**ANNEX 1. LOGICAL MATRIX OF ACTIONS, IMPLEMENTING AGENCIES,  
AND TIMELINES**

**ANNEX 2. DETAIL BUDGET PLAN**

**ANNEX 3. WATERSHED ACCESS RESTRICTION FRAMEWORK (WARF)**

**ANNEX 4. THE PRIME MINISTERIAL DECREE 471**

**ANNEX 5. MAP OF NNT NPA AND THE NT2 WATERSHED**

**ANNEX 6. THE GOVERNMENT LETTER OF IMPLEMENTATION POLICY  
(GLIP, 2005)**

**ANNEX 7. THE WORLD BANK SAFEGUARDS**