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**Participatory management of forest resources in Nakai-Nam Theun National Park, Nakai District, Khammouan Province, Case study: Navang areas and Teung areas**

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**Abstract**

This research focuses on participatory forest resource management within Nakai-Nam Theun National Park, specifically in the Navang and Teng Areas. The study aims to achieve the following goals: Evaluate Development and Conservation Efforts (2011-2017): Assess the effectiveness of conservation and development initiatives undertaken during this period, Investigate Participation: Analyze the roles and involvement of various stakeholders in preserving forest resources. Improve Implementation Strategies: Identify ways to enhance conservation efforts and stakeholder participation. Methodology: Qualitative Approach: The research employs a qualitative methodology, utilizing both secondary document analysis and targeted interviews, Target Group: Interviews were conducted with a total of 22 participants, including: 7 family representatives from 9 villages in the Navang area, 13 representatives from the Teng area and Navang area, Additionally, 5 representatives from mass organizations. Data Analysis: Document and content analysis were performed according to pre-defined issues.

Findings: Administrative Coordination (2005 to 2017): The implementation of administrative measures aligned with Decree 471/PM, which provided a structured approach to planning and task assignment. NT2 WMNA has been identified as a central coordinating body, ensuring periodic tasks were executed according to the set plan. Financial Management: Compliance with Decree 471/PM emphasizes the importance of financial resources in facilitating the preservation and development of the national park. Despite overall completion of initiatives, many at the provincial, district, and village levels stalled due to staffing shortages. Legal Enforcement: Enforcement of laws related to Nakai Nam Theun National Park is supported by Prime Minister's Decree No. 36/Ny (2019), which outlines governance for conservation and protection. The management of water sources and oversight of tourism have been integrated, with collaboration from domestic and

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international organizations for research and biodiversity monitoring. Regular patrol inspections are conducted to ensure compliance with laws, supported by Prime Minister Decree No. 25/Ny (2001), which established the framework for nature conservation. Awareness and Outreach: Initiatives to raise awareness about conservation included projects targeting students and local communities in the Nawang and Teng areas. These efforts utilized news articles, radio, television broadcasts, and other forms of communication to promote conservation messages.

**Keywords:** Participatory management, forest resources, Nakai-Nam Theun National Park, Navang areas, Teng areas.

## Introduction

Currently, hydroelectric power in the Lao People's Democratic Republic (Lao PDR) is experiencing rapid growth, as evidenced by numerous hydroelectric dams either under construction or already completed. The Nam Theun 2 Hydropower Project holds significant potential to contribute to the economic and social development of our country. Throughout the operational period outlined in the project contract, it is expected to generate over 2 billion US dollars in revenue. The Lao PDR is expected to receive approximately US\$80 million per year in the form of taxes, resource fees, and shareholdings. Once the concession agreement is finalized, the project will be transferred to the Lao government at no cost, with all revenues accruing to the Lao PDR. The Nam Theun 2 hydropower project has the capacity to produce 6,000 GWh of electricity, requiring an average annual water supply of 5,000 million cubic meters.

The dam is situated in Ban Sop Hei, encompassing an area of about 450 km<sup>2</sup>, of which 130 km<sup>2</sup> is designated as national park land, as established by Prime Ministerial Decree No. 164/PM in 1993, which declared the Nakai-Nam Theun National Park. Historically, this area has suffered from unsustainable activities such as hunting and illegal logging, leading to significant ecological degradation. Furthermore, the Nakai-Nam Theun National Park is also impacted by the basin of the Nam Theun 2 project.

The Government of the Lao PDR, in collaboration with the World Bank and the Nam Theun 2 Hydropower Company (NTPC), has established that NTPC must allocate an annual budget of \$1,000,000 for the protection and management of the Nam Theun 2 watershed, as well as the adjacent areas of Phou Hin Poon and Phou Hin Nam No. This funding aims to

support biodiversity conservation, ensure sustainable water resource management, and reduce flooding impacts in the southern region by approximately 3.6%. These efforts are crucial for the effective management of the watershed and the preservation of the Nakai-Nam Theun National Park, which provides water to the Nam Theun 2 reservoir. The Environmental, Social, and Environmental Management and Implementation Plan (SEMFOP I) has been formulated to align with Decree 471/PM, which outlines the responsibilities of NTPC under the concession agreement. NTPC is committed to providing financial support to the Nakai-Nam Theun National Park Authority (NNPA) over a period of 31.5 years, focusing on mitigating the ecological impacts and enhancing biodiversity conservation within the park and its connecting areas. This financial backing is vital for NNPA's ability to sustainably and effectively manage the protected area. Established under Prime Minister's Decree No. 25/PM on 26 February 2001, the Nakai-Nam Theun National Park and Linkage Management and Conservation Authority has the responsibility of conserving biodiversity and safeguarding the cultural heritage of indigenous communities. The authority's efforts are essential to maintaining an adequate water supply and minimizing sediment flow into the Nam Theun 2 basin. The forestry sector plays a significant role in the Lao economy; however, it has also been linked to illegal logging and wildlife trafficking, primarily involving impoverished communities around the Nakai-Nam Theun National Park. Since 2005, the Authority has implemented strategies under the Social Environment Management Framework and the first operational plan to tackle these issues and protect the park. Over seven years, these initiatives received a substantial budget and aimed at sustainable development and biodiversity protection. Despite these efforts, evaluations by the Independent Monitoring Agency (IMA), the Panel of Experts (POE), and the World Bank noted a continuing deterioration in biodiversity and habitats for both aquatic and terrestrial wildlife within the park by the end of 2012, as outlined in the 20th POE report and the IMA report. The long-term objectives of the Nam Theun 2 Watershed Management and Conservation Organization include enhancing forest cover, agricultural productivity, land management, and community development within the Nakai-Nam Theun National Park. This area is one of the largest and most biodiverse in the Lao PDR, offering significant conservation value in Southeast Asia. Notably, the park is home to the critically endangered Saola (*Pseudoryx nghetinhensis*), among other globally threatened species, emphasizing the urgent need for effective conservation strategies in this ecosystem.

## Research Objectives

1) evaluate Conservation and Livelihood Development: To assess the effectiveness and outcomes of conservation initiatives and livelihood development programs in Nakai-Nam Theun National Park, focusing on the Teng and Nawang areas.

2) Identify Stakeholder Participation: To examine the roles and contributions of various stakeholders in the conservation of forest resources within Nakai-Nam Theun National Park, Teng, and Nawang areas.

3) Enhance Conservation Implementation and Stakeholder Engagement: To develop strategies for improving the implementation of conservation efforts and increasing stakeholder participation in Nakai-Nam Theun National Park, Teng, and Nawang areas.

## Method

This scientific research employs a qualitative approach utilizing a multi-case study design. The study will conduct an in-depth evaluation of the implementation of conservation and development efforts during the periods of 2005, 2011, and 2017. It will analyze the participation of various stakeholders in the conservation of forest resources and assess the enforcement of laws pertaining to the preservation of Nakai-Nam Theun National Park through a range of scientific research methodologies.

In this study, key informants were selected through purposive sampling, focusing on the highest-ranking members of the executive board appointed by Prime Minister's Decree No. 122/PM, dated April 21, 2017, which oversees the Nam Theun 2 Watershed Management and Protection Agency. This committee represents various stakeholders, including central and provincial governments, district authorities, Natural Area Committees (NACs), and local communities in the Nawang and Tung areas—regions central to the implementation of NAC activities. The study aims to assess the causes, challenges, impacts, and community engagement in these two areas within the Nakai-Nam Theun National Park/Nam Theun 2 Watershed Area, located in Nakai District, Khammouane Province.

The researcher established the following selection criteria for participants: 1) Individuals affected by the construction of the Nam Theun 2 hydropower dam and related project activities; 2) Residents from the Nawang and Tung areas, including representatives from each village where conservation and livelihood development initiatives have been implemented; 3) People who have lived in the Nawang and Tung areas prior to the dam's

construction and continue to reside there; and 4) Individuals aged 18 and above, including members of the general public, village heads, district officials, and local leaders.

### 1) Board of Directors

- 1.1) Head of the Department of Agriculture and Forestry - 1 person
- 1.2) Head of the Department of Natural Resources and Environment - 1 person
- 1.3) Head of the Border Guard Division, Provincial Military Command - 1 person
- 1.4) District Governors of Nakai and Khamkeut Districts - 1 person
- 1.5) Head of the District Agriculture and Forestry Office - 1 person
- 1.6) Head of the District Natural Resources and Environment Office - 1 person
- 1.7) Head of the Secretariat of the National Forestry Office - 1 person

### 2) Uthiyan Area

- 2.1) Head of Nawang and Teng Area - 2 people
- 2.2) Heads of each village:
- 2.3) Teng Area: 13 villages
- 2.4) Nawang Area: 9 villages
- 2.5) Total: 22 villages
- 2.6) Head of the Nawang and Teng Area Village Conservation Committee - 2 people
- 2.7) Family representatives - 22 people (one from each village)

### 3) Mass Organizations within the Village

- 3.1) Representative of the Elders' Front (Nawang and Teng areas) - 1 person
- 3.2) Representative of the Women's Union (both areas) - 1 person
- 3.3) Representative of Youth (both areas) - 1 person
- 3.4) Representative of the Trade Union (both areas) - 1 person
- 3.5) Representative of the Police, Village Security - 1 person

### Analysis

In this research, the data were analyzed as follows:

Content Analysis: This method focuses on evaluating content based on the concepts outlined in the scientific research framework, ensuring that it provides accurate answers to the research objectives.

Typological Analysis: This involves classifying data into different types using the following approaches:

Theoretical Method: This approach classifies data from a single event into various categories, including actions, activities, meanings, relationships, participation, and social conditions. These categories serve as guidelines for analysis.

Non-Theoretical Method: This method involves comparative analysis of multiple events, categorizing them into different types of data. It facilitates the formation of conclusions or theories based on the comparisons made.

## **Result of research**

### **Assessment of Past Conservation and Development Activities (2005–2011 to 2017)**

The Nam Theun 2 Water Resources Management and Protection Authority (WMPA) is part of the Nam Theun 2 hydroelectric project, established to manage and protect the Nakai-Nam Theun National Park (NNT) and mitigate the severe negative impacts of the hydroelectric project on biodiversity.

The WMPA's work began in 2005 but faced interruptions for several years and is currently being relaunched. This delay stemmed from a consensus among stakeholders that the WMPA lacked the capacity to effectively manage and protect the Nakai-Nam Theun National Park. Technical capacity constraints and poor financial management contributed to the failure to implement necessary environmental activities. During this period, management responsibilities of the NAC were transferred from the Board of Directors to a specially appointed National Task Force, tasked with identifying and implementing a more effective management model before returning oversight to the Board.

The assessment of conservation and development activities revealed that the Nakai-Nam Theun National Park and the surrounding watershed are rich in flora and fauna, including many endangered species. Evidence of this includes fluctuations in the number of illegal poachers' camps, iron snares, gunshots, fishing nets, and turtle traps. Management focus tends to shift with each manager's term, influenced by the level of coordination and cooperation among sectors and local communities. Without continuous monitoring and effective collaboration with relevant sectors along the Lao-Vietnam border, these threats are likely to escalate, becoming both a national and international concern.

To ensure the sustainability of biodiversity and improve local livelihoods, the goals for the Nam Theun 2 watershed management area must be implemented. These goals include restoring and enhancing biodiversity, habitats, conservation, cultural values, and ensuring sufficient water supply for the Nam Theun 2 hydropower production. The study

indicates that the implementation of various activities is the responsibility of the designated sectors (provinces and districts) as outlined in Decree 471/PM. The WMPA has also assigned responsibilities and reorganized staff within the NWPA Secretariat to facilitate these efforts.

The evaluation of development work revealed the establishment of district and village committees responsible for maintenance and development, village patrol inspection teams, a data network, a village maintenance and development fund, and an organizational management system. Progress in managing the NAC has been notable, attributed to the close guidance and leadership of the Board of Directors, feedback from stakeholders, and timely approval of annual operating plans and budgets. Additionally, enhancing staff knowledge and awareness, along with the involvement of expert consultants, contributed to this success.

However, the assessment also highlighted that while the NAC has made significant strides in developing institutional and legal frameworks, it has struggled with certain development tasks, such as nature tourism and livelihood improvement. This struggle is primarily due to an emphasis on biodiversity conservation and infrastructure projects, which have exceeded the budget outlined in the master plan. Limited staff capacity has also hindered progress. The work of the watershed management and protection organization is still in its early stages; sustainable development can only be achieved after completing village development plans, organizing production groups, and providing capacity-building training. Although progress has been slow in previous implementations, it is expected to expand in the upcoming planning year.

### **Stakeholder Involvement in Forest Resource Conservation**

The NGF program emphasizes joint collaboration among various organizations, which are responsible for implementing and overseeing the 5-year work plan alongside NGF staff and other relevant parties. To effectively carry out this plan, these organizations must assign full-time staff to the NGF and integrate them into its organizational structure.

Local authorities and villagers are expected to engage actively and participatively in developing annual work plans and budgets for each activity. Historically, their exclusion from the NGF planning process has hindered cooperation, particularly with personnel from the Secretariat of the 2nd National Park and civil servants at the district level. If unqualified staff occupy these positions, it can lead to a decline in overall performance.

Successful management and protection of the Nakai-Nam Theun National Park necessitate knowledgeable individuals contributing to its planning. Embracing innovative approaches and recruiting experienced staff is essential for achieving optimal results. The Board of Directors should evaluate and monitor all staff involved in collaboration between the National Park and associated organizations.

### **Assessing Law Enforcement in Nakai-Nam Theun National Park Conservation**

The enforcement of regulations and laws within the Nakai-Nam Theun National Park and the Nam Theun 2 Watershed Area is crucial for preventing illegal logging of high-value timber, wildlife hunting, and unauthorized fishing. The strategic plan outlines several key activities:

Patrol Inspections: Focus on strictly prohibited areas, such as Thong Ka Chhang (9,500 ha) and Thong Klong-Nam Phae (12,100 ha). Collaboration with the Conservation Project and local patrol units is vital.

Sweeping Patrols: Conducted in partnership with Nakai District Armed Forces.

Mobile Inspections: Based on intelligence and information gathering.

Watershed Area Inspections: Coordinated with district forces, village offices, and fishermen.

Border Inspections: Conducted at Lao-Vietnam border crossing points with border forces.

### **Results and Trends**

Wildlife Traps: 15,474 traps were collected in 2015-2016, representing 10.97% of the total (Administrator No. 4).

Camps Destroyed: 412 camps were dismantled in 2009-2010, accounting for 17.96% of the total (Administrator No. 2).

Illegal Logging: The largest seizure of bamboo was 174.42 cubic meters (2005-2008), about 38.44% of the total (Administrator No. 1). Rosewood seizures reached 3,650 cubic meters in 2015-2016 (38.49% of total wood, 4th Administrator).

Wildlife Poaching: The highest number of monkeys poached was 638 in 2014-2015 (0.47% of the total, Manager No. 4). Red-footed monkeys saw 685 poached during the same period (2.70%, Manager No. 4).

Offender Trends: The peak number of arrests was 261 (44.69% of total) between 2005-2008 (Manager No. 1). The largest number of convicted offenders was 79 in 2012-2013 (33.61%, Administrator 3).

Seized Goods: The highest number of wooden boats seized was 79 in 2010-2011 (24.23%, Administrator 2). There were 137 shotguns seized in 2015-2016 (25.56%, Administrator No. 4).

The NFA's enforcement activities have been actively discussed to strategize and implement effective measures. This became a significant issue during the management transition, leading to the finalization of the SEMFOP II enforcement strategy. The NFA has commenced effective enforcement in Nakai-Nam Theun National Park and the Nam Theun Watershed 2. However, fishing activities have negatively impacted the NFA's objectives, costing fisheries 30% of the total enforcement budget, which appears to be ineffective.

Implementing strategies in this challenging environment is crucial for achieving the NFA's goals, particularly regarding the livelihoods of those in the national park area. Perspectives on livelihood development have varied with each management change in the NPC. Initially, there was a belief that half of the budget should support conservation and the other half development. However, the NPC lacks documentation to support certain development initiatives, which contradicts conservation goals. To ensure long-term development stability, it is essential to promote suitable livelihoods for villagers in the Nakai-Nam Theun National Park.

The NPC's responsibility for livelihood development should focus on "Development of Livelihoods for Conservation." However, gaps in planning and execution during management transitions have led to ineffective outcomes. Past mistrust and resource exploitation have hindered village participation and undermined the NMC's efforts in the park and watershed.

Effective village participation is a critical issue under the current model. To rebuild trust, all NMC Secretariat staff, the NMC Group, and local authorities must be honest and transparent in their dealings with villagers. Corruption must be addressed swiftly, with immediate dismissal of those involved. Villagers should be actively engaged in the planning process to ensure projects meet their needs, as previous efforts failed to consider their input. Many villagers' desires do not align with the NMC/Nam Theun Watershed 2 initiatives.

Therefore, the NEC must prioritize building genuine trust and mutual respect with the villagers through a participatory approach.

## Recommendations for Implementing Conservation and Development Work

**1. Strict Law Enforcement Strategies:** The NMC and district officials should enhance law enforcement to effectively manage and protect Nakai-Nam Theun National Park and the Nam Theun 2 Watershed by implementing the following measures:

- Conduct strict foot patrols in the special management areas of Nawang and Teng.
- Carry out foot patrols in priority watershed areas.
- Implement mobile patrols along roads and the reservoir.
- Establish a network of informants.
- Set up additional land and water checkpoints, including at all locations where Vietnamese government roads intersect the national park boundary.
- Limit unnecessary access to the national park for individuals and groups.

**2. Data Utilization:** Leverage data from wildlife surveys and reports from relevant agencies to conduct annual reviews of wildlife threats and illegal logging activities.

**3. Technological Integration:** Incorporate technology in patrol efforts using GPS for navigation and the MIST program for data recording and management.

**4. Strengthening Collaborations:** Establish and maintain partnerships with relevant organizations and neighboring countries to develop joint patrol plans and address shared national park challenges.

**5. Transition Preparation:** For the transition to a National Park status, engage stakeholders to clarify their roles, ensuring that all activities align with IUCN National Park criteria through comprehensive awareness programs.

**6. Technical Advisory Team Collaboration:** Recognize the Technical Advisory Team as a key partner rather than a service provider. It should be actively involved in planning and decision-making related to management issues.

**7. Direct Communication with Leadership:** Facilitate direct communication between the Technical Advisory Team and the NCC Board of Directors to enhance understanding and trust.

**8. NCC Secretariat Staffing:** Recruit qualified staff for the NCC Secretariat through a transparent process, avoiding rushed hiring. Coordination with international organizations for recruitment support is beneficial. Positions for Director and Deputy Director should be directly appointed by the government, while temporary staff can assist with field patrols in the interim.

**9. Resource Allocation for Enforcement:** Strategically allocate NEC resources to fulfill law enforcement goals. If NEC is to implement law enforcement alongside other strategies, additional funding should be provided. Review past expenditures for multi-point inspections and fisheries-related activities.

**10. Community Trust Building:** Address past shortcomings in community engagement by ensuring all NEC staff exhibit integrity and transparency. Rebuild trust with community members by demonstrating responsible budget management.

**11. Development for Conservation:** Plan development activities based on the principle of "development for conservation," which aims to stabilize or reduce the population in the Nakai-Nam Theun region by promoting health services, family planning, women's empowerment, and non-formal education. Ensure all resource use is sustainable to support livelihood development.

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