



(RESEARCH ARTICLE)



PEOPLE'S PARTICIPATION IN WILDLIFE CONSERVATION IN NAM ET-PHOU LOUEY NATIONAL PARK AT SONKUA VILLAGE, HUA MEUANG DISTRICT, HOUAPHAN PROVINCE

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International Journal of Science and Research Archive, 2026, 20(03), 536–543

Publication history: Received on 04 August 2026; revised on 13 September 2026; accepted on 15 September 2026

Article DOI: <https://doi.org/10.30574/ijrsra.2026.20.3.1759>

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ABSTRACT

This study aimed to examine local community participation in wildlife conservation and to identify problems and solutions related to community wildlife conservation in Nam Et-Phou Louey National Park, Sonkua Village, Houameuang District, Houaphan Province. The target group for this study encompassed 100% of the population in Sonkua Village, totaling 227 households. Data were collected using structured interview questionnaires and subsequently analyzed using descriptive statistics via SPSS software to calculate frequencies, percentages, means, and standard deviations. The findings revealed that:

The overall level of public participation was high, with an average mean score of 2.73. Categorized by specific dimensions, the highest mean score was found in Land Allocation and Livelihood Improvement (Mean = 2.83), followed by Ecotourism (Mean = 2.82), Information Dissemination and Awareness Raising (Mean = 2.69), Wildlife Monitoring and Evaluation (Mean = 2.67), and the lowest mean score was in Law Enforcement (Mean = 2.66).

The most prominent conservation issue identified was in Information Dissemination, specifically regarding insufficient coverage of promotional and prohibition signage, as well as unengaging communication methods. This was followed by Biodiversity Monitoring and Evaluation, where public disclosure of wildlife data attracted hunters; Land Allocation, caused by limited agricultural space and land degradation; Law Enforcement, due to a lack of strict execution; and Ecotourism, which was negatively impacted by the COVID-19 pandemic.

Regarding proposed solutions, residents recommended conducting awareness outreach at least once a year, installing comprehensive prohibition signs, clearly allocating land and boundary markers for the national park, actively involving the community as informants and monitors, securing funding to support livelihood development, holding regular planning meetings for tourist reception, and strictly enforcing laws.

Keywords: Participation, Wildlife Conservation, Nam Et-Phou Louey National Park, Wildlife, Sonkua Village

1 INTRODUCTION

Local community participation serves as a critical mechanism in managing protected areas, as residents are direct stakeholders who share ecosystem benefits with wildlife (1). However, Nam Et-Phou Louey National Park faces persistent challenges from unsustainable levels of hunting, impacting biodiversity and long-term ecosystem balance. Understanding attitudes and socio-economic factors determining community participation is central to formulating sustainable management strategies (3,13). Integrating local cooperation not only establishes equitable and sustainable resource management processes but also reduces potential conflicts arising from restricted natural resource access within protected zones (1,11). For Nam Et-Phou Louey National Park, conservation success hinges on balancing community economic benefits with ecological protection goals, where diversified participation renders wildlife conservation efforts more tangible (4,12). Conducting a study in Nam Et-Phou Louey National Park is essential due to the presence of long-standing native settlements and increasing poaching pressures that directly threaten wildlife security and prey availability in the ecosystem (5).

Wildlife conservation projects began activities in 2003 within the Nam Et-Phou Louey National Protected Area (currently Nam Et-Phou Louey National Park) due to its high-altitude topography and rich biodiversity, including several endangered wildlife species in Asian natural habitats. Past and present pressures on the national park include hunting, wildlife trade, natural fishing, agricultural encroachment, logging, and forest fires (8). These issues stem from a lack of active community collaboration, complicating management and highlighting the need for local involvement to foster effective park administration roles (6,10). This study covers Sonkua Village inside Nam Et-Phou Louey National Park to analyze resource reliance and participation barriers (7), providing vital baseline data for policymakers to design sustainable management strategies tailored to local socio-economic contexts (2).

Therefore, this study investigated public participation in wildlife conservation in Nam Et-Phou Louey National Park and analyzed problems and solutions to reduce inappropriate land and wildlife resource exploitation, laying a foundation for effective collaborative management.

2 MATERIAL AND METHODS

2.1 Target Sample

This study included 100% of households in Sonkua Village, comprising 227 households involved in wildlife conservation activities.

2.2 Household Interviews

Interviews were conducted with household heads or designated representatives capable of providing information using structured interview forms. The interviews focused on participation in wildlife conservation—such as awareness dissemination, law enforcement, wildlife monitoring, ecotourism, land allocation, and livelihood improvement—as well as community-perceived problems and solutions.

2.3 Data Analysis

Descriptive statistical methods were used. Survey data were entered into SPSS software to calculate frequencies, percentages, and mean values. Participation levels were evaluated using a 4-point Likert Scale categorized into four levels:

- **Mean 1.00 – 1.75:** Very Low Participation
- **Mean 1.76 – 2.50:** Low Participation
- **Mean 2.51 – 3.25:** High Participation
- **Mean 3.26 – 4.00:** Very High Participation

3 RESULTS

3.1 Community Participation in Wildlife Conservation in Nam Et-Phou Louey National Park

3.1.1 Participation in Information Dissemination and Awareness

Overall participation in information dissemination was high (Mean = 2.69). The highest item was participation in awareness campaign sessions and building conservation consciousness (Mean = 2.74), followed by attending National Aquatic and Wildlife Day celebrations (Mean = 2.73), while the lowest within this category was attending regulatory document dissemination meetings (Mean = 2.64) .

Table 1: Community Participation in Information Dissemination

No.	Indicator	Mean (X ⁻)	S.D.	Level
1	Attending meetings for disseminating regulations and wildlife management documents	2.64	0.92	High
2	Participating in wildlife conservation awareness campaigns and mindset building	2.74	0.9	High
3	Assisting in installing information signs, prohibition signs, and wildlife guide boards	2.68	0.87	High
4	Participating in the dissemination of boundary demarcation and park zoning	2.69	0.86	High
5	Participating in National Aquatic and Wildlife Conservation Day events	2.73	0.91	High
Overall Average		2.69	0.89	High

3.1.2 Participation in Law Enforcement

Overall participation in law enforcement was high (Mean = 2.66). The highest-rated items were participation in law enforcement activities and acting as village informants/monitors against violators (Mean = 2.72), followed by participating in poaching deterrence (Mean = 2.67), and the lowest was participation in enforcing penalties against illegal hunting and trade offenders (Mean = 2.58).

Table 2: Community Participation in Law Enforcement

No.	Indicator	Mean (X ⁻)	S.D.	Level
1	Attending consultative meetings to draft national park management regulations	2.64	0.95	High
2	Participating in feedback meetings on measures against aquatic and wildlife law offenders	2.72	0.95	High
3	Participating in forest patrol inspections within the national park	2.65	0.98	High
4	Participating in road and marketplace inspection patrols	2.66	0.95	High
5	Acting as village informants and monitoring wildlife regulation violators	2.72	0.95	High
6	Assisting in confiscating weapons and various hunting gear	2.65	0.96	High
7	Participating in anti-poaching and hunting prevention activities	2.67	0.95	High
8	Assisting in resolving wildlife-related cases (e.g., illegal hunting and wildlife trade)	2.61	0.91	High
9	Participating in enforcing disciplinary measures against poachers and illegal traders	2.58	0.92	High

Overall Average		2.66	0.94	High
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3.1.3 Participation in Wildlife Monitoring and Evaluation

Overall participation in monitoring and evaluation was high (Mean = 2.67). The highest rated item was acting as village informants against illegal poaching (Mean = 2.74), followed by participating in human-wildlife conflict resolution (Mean = 2.71), while camera trap installation had the lowest mean score (Mean = 2.59) (Table 3).

Table 3: Community Participation in Wildlife Monitoring and Evaluation

No.	Indicator	Mean ($\bar{X}$)	S.D.	Level
1	Participating in wildlife survey transect walks within the park	2.63	0.92	High
2	Participating in setting up wildlife camera traps	2.59	0.97	High
3	Acting as village informants to monitor illegal poaching	2.74	0.94	High
4	Assisting staff in evaluating all wildlife species in the park	2.68	0.93	High
5	Participating in human-wildlife conflict mitigation	2.71	0.92	High
Overall Average		2.67	0.94	High

3.1.4 Participation in Ecotourism

Overall participation in ecotourism was high (Mean = 2.82). The highest item was participating in ecosystem conservation within tourism zones (Mean = 2.89), followed by maintaining and improving tourism facilities (Mean = 2.86), and the lowest was participating in tourism boundary demarcation (Mean = 2.78).

Table 4: Community Participation in Ecotourism

No.	Indicator	Mean ($\bar{X}$)	S.D.	Level
1	Participating in defining and setting tourism zone boundaries	2.78	0.98	High
2	Attending various tourism-related operational meetings	2.81	0.94	High
3	Joining local tour guiding service groups	2.81	0.97	High
4	Participating in managing village funds generated from ecotourism	2.8	0.95	High
5	Sharing direct economic benefits from national park ecotourism	2.79	0.95	High
6	Assisting in the maintenance and improvement of tourism facilities	2.86	0.97	High
7	Providing local products and souvenirs for exhibition to tourists	2.85	0.98	High
8	Participating in ecosystem conservation within designated ecotourism areas	2.89	0.98	High
Overall Average		2.82	0.97	High

3.1.5 Participation in Land Allocation and Livelihood Improvement

Overall participation in land allocation and livelihood improvement was high (Mean = 2.83). The highest item was actively adhering to village land and forest management regulations (Mean = 3.05), followed by developing village livelihood promotion activity plans (Mean = 2.90), while participating in socio-economic data collection had the lowest mean score (Mean = 2.71).

Table 5: Community Participation in Land Allocation and Livelihood Improvement

No.	Indicator	Mean (X̄)	S.D.	Level
1	Participating in village socio-economic data collection processes	2.71	0.93	High
2	Co-formulating activity plans under livelihood enhancement initiatives	2.9	0.94	High
3	Joining village development activities aimed at livelihood improvement	2.75	0.95	High
4	Participating in village land allocation and agricultural zoning	2.78	0.92	High
5	Participating in village development funds for promotional activities	2.78	0.93	High
6	Actively taking ownership in implementing village land-forest regulations	3.05	0.9	High
Overall Average		2.83	0.93	High

3.2 Problems and Proposed Solutions in Wildlife Conservation

3.2.1 Conservation Issues

The primary issue reported by Sonkua households was Information Dissemination (133 households, 48.01%), specifically due to incomplete signage coverage and unengaging media content. Second was Biodiversity Monitoring and Evaluation (123 households, 44.40%), where public disclosure of wildlife presence unintentionally tipped off hunters. Ecotourism issues were reported by the fewest households (25 households, 9.03%), primarily due to COVID-19 travel disruptions (Table 6).

Table 6: Wildlife Conservation Problems in Sonkua Village

Category	Specific Issues	Households (n)	Percentage (%)
1. Information Dissemination	Inadequate and non-comprehensive installation of warning/prohibition signs	133	48.01
	Unappealing topics and dissemination methods	92	33.21
2. Law Enforcement	Lack of strict law enforcement implementation	67	24.19
	Persistent law violations by a subset of residents	34	12.27
	Legal proceedings against offenders without informing village authorities	27	9.75
3. Monitoring & Evaluation	Public disclosure of wildlife data attracting poachers	123	44.4
4. Ecotourism	COVID-19 pandemic preventing tourist visits	25	9.03
	Unclear division of responsibilities among tourism service groups	67	24.19
	Narrow scope of promotional campaigns to attract tourists	42	15.16
5. Land & Livelihoods	Unclear land-forest allocation and boundary demarcation	98	35.38
	Limited agricultural land leading to soil degradation and low crop yields	31	11.19

3.2.2 Proposed Solutions

The most frequently proposed solution was improving Information Dissemination (134 households, 48.38%), advocating for awareness activities at least once a year and installing comprehensive prohibition signage throughout village-managed areas (Table 7).

Table 7: Proposed Solutions for Wildlife Conservation

Category	Proposed Solutions	Households (n)	Percentage (%)
1. Information Dissemination	Conduct awareness outreach at least annually or more frequently	134	48.38
	Increase the density and coverage of warning and prohibition signs	45	16.25
2. Law Enforcement	Enforce criminal and civil regulations more stringently	23	8.3
3. Monitoring & Evaluation	Conduct continuous wildlife assessments across protected zones	77	27.8
	Foster community ownership and collective surveillance networks	90	32.49
	Periodically research and evaluate biodiversity status	65	23.47
4. Ecotourism	Promote continuous tourist outreach and marketing	26	9.39
	Mobilize local communities to protect wildlife and forests in tourist zones	41	14.8
	Broadly invite and market ecotourism attractions	32	11.55
	Hold regular operational planning meetings for tourist reception	88	31.77
5. Land & Livelihoods	Deploy projects to execute formal household-level land allocation	132	47.65
	Establish clear boundary posts between park zones and agricultural land	21	7.58
	Implement soil restoration/improvement support for farmers	56	20.22
	Attract development funding to improve community livelihoods	84	30.32

4 DISCUSSION

The overall level of participation among Sonkua Village residents in Nam Et-Phou Louey National Park was high (Mean = 2.73). This demonstrates positive community attitudes and responses toward national park management, aligning with Niu et al. (2019) who highlighted local stakeholder participation as a strategic cornerstone for sustainable protected area management.

- Land Allocation and Livelihood Improvement recorded the highest participation level (Mean = 2.83), particularly regarding community adherence to land-forest regulations (Mean = 3.05). This aligns with Balanay et al. (2026), indicating that socio-economic security and clear land rights dictate community willingness to conserve. However, limited farmland driving soil degradation remains a challenge (35.38%), corroborating Kiumbuku (2022) regarding trade-offs between livelihood survival and conservation goals.
- Ecotourism ranked second (Mean = 2.82), with strong participation in ecosystem protection within tourism zones (Mean = 2.89). This indicates that ecotourism provides economic incentives that alleviate hunting dependencies, as suggested by Gandiwa et al. (2013) and Vimal et al. (2018). Disruptions from COVID-19 (9.03%) and organizational role ambiguities (24.19%) were key barriers.

- Information Dissemination averaged a high score (Mean = 2.69), yet 48.01% of respondents cited incomplete sign coverage and uninspiring communication methods, highlighting the need for diversified and continuous communication channels.
- Wildlife Monitoring and Evaluation (Mean = 2.67) showed strong local assistance in poaching surveillance (Mean = 2.74) and conflict mitigation (Mean = 2.71). However, 44.40% raised critical safety concerns that publicizing wildlife locations inadvertently tipped off poachers, underscoring the imperative for strict confidentiality in biodiversity data management.
- Law Enforcement received the lowest average score among all categories (Mean = 2.66), with the lowest item mean being enforcement against offenders (Mean = 2.58). Key concerns included weak enforcement execution (24.19%) and lack of village authority involvement during legal proceedings (9.75%), supporting findings by Johnson (2012) and Htay et al. (2022) regarding poaching pressures and weak enforcement.

5 CONCLUSION

The evaluation of 227 households in Sonkua Village, Houameuang District, Houaphanh Province demonstrates high overall community participation (Mean = 2.73) in Nam Et-Phou Louey National Park conservation. Participation was highest in land allocation/livelihoods (Mean = 2.83) and ecotourism (Mean = 2.82), while law enforcement saw the lowest participation score (Mean = 2.66). Major challenges included insufficient outreach signage (48.01%), wildlife data security risks (44.40%), land constraints (35.38%), and weak enforcement coordination (24.19%). Key community recommendations emphasize increasing annual outreach frequency (48.38%), formalizing land boundaries and alternative livelihoods (47.65%), setting up local monitoring networks (32.49%), establishing structured ecotourism plans (31.77%), and executing firm law enforcement in close coordination with village leadership (16.25%).

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Acknowledgments

The authors would like to sincerely thank the members of the Faculty of Agriculture and Forest Resource, Souphanouvong University and Nam Et-Phou Louey National for their assistance in carrying out this research.

Disclosure of conflict of interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

Statement of ethical approval

This study involves human participants who voluntarily agreed to complete the survey. It carries no adverse impact on wildlife, but rather aims to promote active participation in future wildlife conservation.

Statement of informed consent

This study causes no negative impact on the individuals or sample population studied. It aims to provide guidelines for wildlife conservation and management, fostering sustainable growth of wildlife populations.

Author Contribution

Sysomphou INTHALEUXAY conceived the idea and designed the experiments. Sysomphou INTHALEUXAY, Anousith VANNAPHON, Hor MANYTHONG, Mongxiong and Kita CHANTHANOUVONG conducted the experiments. Sysomphou INTHALEUXAY analyzed the research data; Anousith VANNAPHON and Hor MANYTHONG wrote the manuscript. All authors read and agree to the submission of the manuscript to the journal.

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