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Investigating the Implementation of the Buffer Zone Approach in Development: A Case Study of Suklaphanta Wildlife Reserve, Kanchanpur, Nepal

Daman Dhoj D.C.[1]

[1]Teaching Assistant, Department of Rural Development, Tribhuvan University, Mahendra Multiple Campus, Nepalgunj

[1]Corresponding Author: damandangi55@gmail.com

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Abstract

The study conducted in February-March 2023 aimed to assess the socio-economic status of rural communities residing in the buffer zone surrounding Suklaphanta Wildlife Reserve (SWR) in Kanchanpur district, referred to as a zone of impact adjacent to the Conservation Area. The buffer zone covers various locations, including Bhim att, Bedkot municipality, Suklaphanta municipality, Beldandi Village municipality, and others. Data was collected through household surveys in five sample locations: Chathari, Sunderpur, Bagphanta, Nayagaun, and Lalpur. A total of 50 households were surveyed, with 10 sample households per location, using structured questionnaires and observation sheets. Findings from the study indicated an average family size of 6.08 individuals, with varying levels of education among adults. Approximately 74% of households were primarily engaged in agriculture, while other means of occupation included hotel business, trade, and service sector jobs. The study also highlighted the significant role of women in farming activities and childcare. Tourism was identified as an emerging economic activity in the buffer zone, with around 55% of visitors coming from different parts of the country to SWR. The Wildlife Reserve positively impacted the socio-economic environment by conserving natural resources, promoting greenery, and contributing to income and employment generation. Respondents acknowledged the buffer zone's importance in water resource conservation, with 90% agreeing that it was fruitful in this regard. However, around 6% reported facing challenges due to wild animals. Ultimately, if future initiatives align with the buffer zone's potential, the study concluded that rural poverty could be reduced, and the livelihoods of people in the area could be improved.

Keywords: bio-diversity, buffer zone, development, Suklaphanta, wildlife reserve,

Introduction

Nepal possesses abundant diversity of flora and fauna, both agricultural and wild, making it essential to protect and preserve these valuable resources for the country's socio-economic development. The National Parks and Wildlife Conservation Act of 1973 serves as the legal foundation for managing the protected areas in Nepal, which are classified into six categories, including National Parks, Strict Nature Reserves, Hunting Reserves, Conservation Areas, Wildlife Reserves, and Buffer Zones.

Among the three Wildlife Reserves in Nepal, the Suklaphanta Wildlife Reserve (SWR) was initially a hunting place but was later declared a Royal Hunting Reserve in 1969. In 1976, it officially became the Suklaphanta Wildlife Reserve, encompassing 305 sq km of Grassland, Wetland, mixed forest, and bushes, providing a diverse range of wildlife habitats. Notably, the reserve houses the largest grassland known as "Sukilaphanta" or "white grassland," offering a picturesque sight during winter when the grass blooms, appearing white.

The SWR is a prime location for observing wildlife, with a substantial herd of swamp deer visible during winter from various view towers. Controlled burning is employed to maintain suitable forage habitats for these deer. Additionally, artificial waterholes are strategically placed to draw wildlife away from poaching-prone areas, improving their habitat.

Various lakes within the reserve, such as Salgauditaal and Rani taal, attract an abundance of birdlife, while also serving as habitats for elephants, rhinos, and tigers. The reserve's geographical location lies at longitude 80.25" E and latitude 28.35" N, with an altitudinal range of 90-270 meters. Its boundaries are marked by protected forests, the Mahakali River, and the Indian national forest "Lagga Bagga."

The SWR plays a crucial role in safeguarding Nepal's biodiversity and natural resources, making it a vital area for conservation efforts. The reserve's headquarters are located at Majhgaun in Vimdatta Municipality.

The Suklaphanta Wildlife Reserve (SWR) encompasses a diverse buffer zone spread across 13 village development committees and one municipality in Nepal. This area is significant for tourism activities, especially around Salgauditaal, Suklaphanta grassland, and Rani Taal, where large herds of swamp deer can be observed. The establishment of buffer zone institutions aims to involve the community in various programs and capacity building, promoting self-reliance.

SWR, located in the Kanchanpur district of Far Western Development Region, was originally a hunting ground and later declared a royal hunting reserve in 1969. In 1976, it became the Suklaphanta Wildlife Reserve, covering 305 sq km, with an additional 243.5 sq km for its buffer zone. This reserve is renowned for its rich biodiversity, housing various species like swamp deer, Royal Bengal Tiger, beer, elephants, rhinos, and more. It boasts the largest herd of swamp deer globally and the highest density of Royal Bengal Tigers in any Asian habitat.

The reserve is a habitat for about 424 species of birds, including the highest population of Bengal florican, and 21 species of fish. SWR also supports numerous reptiles and wetlands that nurture diverse flora and fauna. The area experiences three main seasons, with warm and pleasant days from October to early April and hot temperatures from April to June.

Access to the reserve is possible through roadways and flights from different parts of the country and India. An entry fee is applicable for visitors, and certain regulations are in place, such as restrictions on purchasing illegal animal or plant products and prohibiting travel within the reserve area between sunset and sunrise.

Protected reserve areas and biodiversity conservation efforts hold significant importance in promoting socio-economic development, particularly in rural regions, where the well-being and prosperity of communities heavily depend on the diverse products and services offered by biodiversity. However, despite their crucial role, protected areas are not immune to various forms of damage arising from unregulated human activities and tourism, which can negatively impact the biodiversity within these areas.

It is essential to assess the socio-economic justifiability of conservation activities, specifically within national parks and their buffer zones, to ensure overall development and socio-economic sustainability in the surrounding regions. This evaluation should be conducted using a comprehensive approach that includes theoretical, practical, and scientific considerations, with a focus on the well-being of humanity and the promotion of sustainable rural development. By understanding the potential impact of conservation activities carried out by wildlife reserves, we can ensure the harmony between biodiversity conservation and the prosperity of communities while fostering long-term sustainable development.

Objectives of the Study

The primary objective of this research is to investigate the socio-economic status of the local population residing within the buffer zone management of Suklaphanta Wildlife Reserve. The specific objectives are as follows:

1. To examine the socio-economic status of the communities living in the buffer zone area of Suklaphanta Wildlife Reserve.
2. To analyze the challenges and opportunities presented by the buffer zone approach to community development.
3. To assess the effectiveness of community development programs implemented during buffer zone management.

Study Limitations: It is important to note that the data collected for this study is specific to the study area and may not be applicable to the entire buffer zone area. Additionally, the accuracy of the analysis is dependent on the information provided by the respondents, which could lead to potential inaccuracies. Furthermore, the study does not extensively cover the environmental and biotechnical aspects related to the buffer zone management.

Review of Literature

In Nepal, the management of protected areas is governed by the National Parks and Wildlife Conservation Act of 1973. The Act categorizes and recognizes various protected areas (Pas) into six distinct types:

1. National Parks: These areas are managed to conserve the overall environment, encompassing ecological, biological, geomorphological, and aesthetic aspects. Nepal currently has nine National Parks, including Chitwan National Park, Bardiya National Park, Shivpuri National Park, Khaptad National Park, Rara National Park, Shey

Phoksundo National Park, Langtang National Park, Makalu-Barun National Park, and Sagarmatha National Park.

2. Wildlife Reserves: These reserves are established for the conservation and management of wildlife and their habitats. Nepal has three Wildlife Reserves, namely Koshi Tappu Wildlife Reserve, Parsa Wildlife Reserve, and Suklaphanta Wildlife Reserve.
3. Strict Nature Reserves: These areas possess unique features and are utilized for scientific studies. Nepal has only one Strict Nature Reserve, namely Lower Barun Valley.
4. Hunting Reserve: This type of reserve is designated for recreational hunting. In Nepal, the Dhorpatan Hunting Reserve is the sole example.
5. Buffer Zone: Buffer Zones are designated areas surrounding national parks or reserves where the utilization of resources by local communities is regulated to ensure sustainable practices.
6. Conservation Area: These areas are managed with integrated plans for both conservation and sustainable use of their resources. Nepal has three Conservation Areas: Kanchanjangha Conservation Area, Makalu Conservation Area, and Annapurna Conservation Area.

To ensure effective conservation and biodiversity maintenance, collaborative efforts from all stakeholders, including policy makers and administrators, are essential. It is imperative to develop comprehensive strategies, plans, programs, and detailed actions to achieve satisfactory results in the preservation of biodiversity (Ojha, 2005).

Sthapit and Jarvis (2001) have provided a comprehensive account of in situ conservation methods for agricultural biodiversity on-farm, exploring diverse options for farmers to contribute to food security and potential income growth. In a study focusing on the agro-ecosystem of in-situ conservation sites for crop genetic resources in Nepal, Joshi et al. (2001) documented critical information on agro-biotic, socioeconomic, and farmer-managed factors across three physiographic regions (Jumla, Kaski, and Bara).

The national workshop "On-Farm Management of Agricultural Biodiversity in Nepal," conducted from 24th to 26th April 2001, produced valuable outcomes as highlighted by Sthapit et al. (2001). These outcomes played a pivotal role in achieving the four objectives of the CBD Work Program on Agricultural Biodiversity and contributed to raising global awareness regarding the significance of crop genetic diversity in agro-ecosystems for sustainable development (Jarvis, 2001). Sapkota (2001) observed that the scenario of agro-biodiversity is subject to change over time and space, presenting new challenges and opportunities in fulfilling national commitments to implementing the Convention on Biological Diversity (CBD) and the Global Plan of Action for Plant Genetic Resources for Food and Agriculture (GPA-PGRFA).

The SAARC Agricultural Information Centre, documented by Upadhyaya and Joshi (2003), has extensively captured the plant genetic resources of Nepal, their conservation, and management. The documentation outlines various indicators of diversity richness, covering a wide array of cultivated species, ecosystem types, aromatic rice varieties, flowering plants, medicinal flora, vegetables, wild edible plants, and more.

The Nepal Conservation Research and Training Center (NCRTC), established by Mahendra Trust for Nature Conservation (now National Trust for Nature Conservation) in 1989 within the Chitwan National Park (CNP), has evolved its focus over time. Presently known as the Biodiversity Conservation Center (BCC) since January 2002, it incorporates the human dimension in its conservation endeavors. BCC's emphasis lies in conservation and integrated development, aiming to conduct applied biological research and provide sustainable livelihood options to local communities, thereby minimizing conflicts between conservation management and local residents. BCC conducts various activities related to biodiversity conservation and management, including tiger and elephant monitoring, bird surveys, ungulate surveys, capacity-building programs, women empowerment initiatives, veterinary services, health, and sanitation programs, among others (KMTNC, 2005).

The literature review highlights several research gaps in the context of wildlife reserve and biodiversity conservation in Nepal. Additionally, research efforts should focus on exploring approaches to incorporate Participatory Management and Evaluation of Biodiversity (PAMEB) in the Nepal biodiversity strategy. This integration could foster collaborative conservation efforts and enhance biodiversity maintenance. Furthermore, there is a call for in-depth investigations into the agricultural biodiversity on-farm, agro-ecosystems, and the preservation of crop genetic diversity. Such research endeavors could contribute to food security and income growth for farmers while promoting sustainable development. Lastly, there is a need for more comprehensive documentation and studies on the plant genetic resources of Nepal, their conservation, and management. Addressing these research gaps will strengthen conservation policies and contribute to the long-term preservation of biodiversity in the region.

Research Methodology

Research Design

The research design employed for this study was both exploratory and descriptive, aiming to examine issues and present findings. The data collection process involved the use of structured questionnaires and sheets to gather primary data, along with unstructured instruments and techniques to acquire secondary data. Both independent and dependent variables were simultaneously observed and taken into consideration.

Description of the Field

The study was conducted in the Suklaphanta Wildlife Reserve and its Buffer Zone. Sample interviews and observations were carried out at selected sites, taking into account the location and extent of the Suklaphanta Wildlife Reserve and its Buffer Zone. The main study area for this research was the Bedkot Municipality. The sampling sites were strategically chosen to represent the entire area of influence of the Suklaphanta Wildlife Reserve and its Buffer Zone.

Nature and Sources of Data

This study relied on both primary and secondary sources of data and information. Primary information was collected through sample household surveys and observations, while

relevant secondary information was gathered from various sources to facilitate the analysis process.

Techniques and Tools for Data Collection

Structured questionnaires were used to conduct household surveys (personal interviews) and collect primary data. Local residents, particularly household heads, served as key informants for the study. The questionnaire was designed to cover aspects relevant to achieving the study's objectives. Visual observation and the collection of pertinent primary data and information were conducted by the researcher using observation sheets from the Suklaphanta Wildlife Reserve and its surrounding areas. Additionally, interactions with the Reserve's staff (e.g., Warden, Rangers, Game Scouts) were conducted to understand the conservation activities and processes undertaken in the Reserve and its Buffer Zone. Secondary data were obtained from sources such as the Department of National Parks and Conservation, Ministry of Agriculture Development, Ministry of Forest, Ministry of Science and Technology, Nepal Agriculture Research Council (NARC), Department of Forest research and survey, Tribhuvan University, Office of Suklaphanta Wildlife Reserve, and various INGOs/NGOs, including IUCN, ICIMOD, and WWF. Internet searches were also conducted to gather relevant data and information.

Method of Data Analysis

Upon collecting primary and secondary data, the research involved processing and analysis using various statistical tools and techniques, as well as relevant socio-economic analysis. The present status of rural people in the study area was assessed, and relationships among different socio-economic variables were analyzed, with interpretations and inferences made in the context of rural development and poverty reduction perspectives. The study also examined good governance in Buffer Zone management through data processing and analysis.

Data Analysis and Interpretation

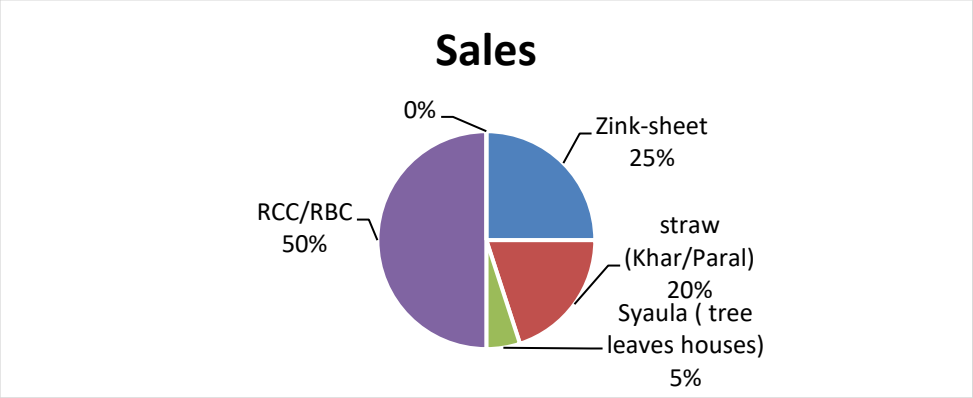
The study provides an analysis of the socio-economic implications of the buffer zone surrounding the Shuklaphanta Wildlife Reserve. It examines the attitudes of rural people in the study area with regard to their occupations, general livelihood, and the organizations involved in supporting rural livelihoods. The study highlights several key points, including the following:

Demographic and Socio-Economic Information: The buffer zone of the Shuklaphanta Wildlife Reserve is inhabited primarily by indigenous ethnic groups (Adhibasi/Janajati), namely the Tharu, Magar, and Rana communities. Additionally, there are other castes and ethnic groups in the area, including migrants from different parts of the country. The major caste and ethnic groups presently residing in the buffer zone are Brahnman, Kshetri, Tharu, Kami, Damai, Sharki, and others. Specifically, the Chathari settlement mainly comprises the Tharu community; Sundarpur is predominantly inhabited by Brahman and Kshetri communities; Bagphanta has a mix of Tharu, Brahman, and Kshetri communities; Nayagaun is inhabited mainly by Tharu, Brahman, and Kshetri communities, while Lalpur has a significant presence of Tharu, Brahman, and Kshetri communities.

Average family size in the study area, according to the sample survey, was observed to be 6.08 persons per family (5.9 in Chathari, 5.2 in Sundarpur, 6.6 in Nayagaun, 6.5 in Bagphanta, and 6.2 in Lalpur). The study also found that the majority of housing types in the buffer zone consisted of zinc-sheet roofed houses (25% of houses), followed by straw (Khar/Paral) roofed houses at 20%, and Syaula (tree leaves) roofed houses at 5%. Additionally, only 50% of houses were observed to be made of RCC/RBC (Reinforced Cement Concrete) construction. Figure 1 provides a visualization of the major housing types observed during the survey in the buffer zone of the Suklaphanta Wildlife Reserve.

Figure 1

The major houses observed in the Shuklaphand Wild Life Reserved in 2023.



Source: Field survey, 2023

According to the survey findings, the occupation patterns in the buffer zone predominantly revolve around agriculture, with approximately 75% of the households engaged in this sector. Apart from agriculture, other means of occupation observed in the buffer zone include Hotel Business, Trade, and the Service sector. The specific trend of occupation patterns in the Shuklaphanta Wildlife Reserve (SWR) buffer zone, as uncovered by the study, has been documented in table 1.

Table 1

Main Occupation of the Rural People Observed in the Buffer Zone of SWR

Study Area	**Occupation of the households observed (%)**				
	Farming	**Trade**	**Hotel Business**	**Service**	**Others**
Chatahri	100.00	0.00	0.00	0.00	0.00
Sundarpur	70.00	10.00	10.00	10.00	0.00
Bagphanta	80.00	5.00	5.00	5.00	5.00
Nayagaun	60.00	15.00	5.00	15.00	5.00
Lalpur	60.00	20.00	10.00	5.00	5.00
Average	**74.00**	**10.00**	**6.00**	**5.80**	**2.5**

Source: Field survey, 2023

Regarding the educational status of adults in the buffer zone of the Shuklaphanta Wildlife Reserve (SWR), the survey findings indicate that on average, approximately 20% of adults (11% male and 9% female) were found to be illiterate. Around 35% of adults (18% male and 17% female) were reported as literate, while approximately 52% of adults (27% male and 25% female) possessed secondary level education. Furthermore, the survey identified that an average of 45% of adults (27% male and 18% female) had attained higher education levels in the buffer zone. The overall population of adults in the study area consisted of 55% male and 45% female participants, as observed during the sample survey. Detailed information on the educational status of adult individuals in various sample survey locations within the buffer zone can be found in table 2.

Table 2

Adult Educational Status of People Observed in the Buffer Zone of SWR in 2023

Study area	Illiterate		Literate		Secondary Education		Higher Education		Total adult	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Chathari	4	3	5	6	12	12	3	2	24	23
Sundarpur	5	4	5	5	11	10	2	3	24	22
Bagphanta	3	4	3	2	8	7	4	3	18	16
Nayagaun	5	4	3	2	9	8	4	3	21	17
Lalpur	5	6	5	4	4	3	3	2	17	15
Total	**22**	**21**	**21**	**19**	**44**	**40**	**16**	**13**	**104**	**93**

Source: Field survey, 2023

Total household survey = 50 (i.e. 10 households per sample survey location).

Table 3

Role of Women in Different Household Activities Observed in the Buffer Zone of SWR in 2023

Study Area	Response on role of women on different household activities (%)							
	Child Care		Child Education		Guest Respect		Family Decision	
	Major Role	Minor Role	Major Role	Minor Role	Major Role	Minor Role	Major Role	Minor Role
Chathari	100.00	0.00	65.00	35.00	75.00	25.00	25.00	75.00
Sundarpur	90.00	10.00	35.00	65.00	95.00	5.00	40.00	60.00
Bagphanta	100.00	0.00	10.00	90.00	60.00	40.00	10.00	90.00
Nayagaun	90.00	10.00	40.00	60.00	90.00	10.00	35.00	65.00
Lalpur	90.00	10.00	60.00	40.00	90.00	10.00	10.00	90.00
Average	**94.00**	**6.00**	**42.00**	**58.00**	**82.00**	**18.00**	**24.00**	**76.00**

Source: Field survey, 2023

Total number of sample households observed (N) =50 i.e. 10 sample household per sample location.

Problems of Buffer Zone Approach

Infrastructures/Facilities Available

Infrastructure and facilities available in the 5 selected study locations was comparatively analyzed based on observation and discussion, especially in terms of facilities and services. The development of the study area was measured and analyzed in terms of infrastructures index, which was built on the basis of logical expression of 1 and 0 for the presence and absence of the facilities.

Table 4

Available infrastructures and facilities observed in the BZ of SWR in 2023

Study Area	Facility/Infrastructure Types								Total	Mean Index
	PS	SS	HP	PP	PO	EI	MF	BK		
Chathari	1	0	1	0	0	0	0	0	2	0.25
Sundarpur	2	1	1	0	0	1	0	0	4	0.5
Bagphanta	2	1	1	1	1	0	2	0	8	1
Nayagaun	1	1	1	1	0	0	1	0	5	0.63
Lalpur	2	1	1	1	0	1	2	0	8	1
Sum	**8**	**4**	**5**	**3**	**1**	**2**	**5**	**0**	**27**	0.675

Source: Field survey, 2023

PS=Primary School, SS=Secondary School, HP=Health Post, PP=Police Post, PO=Post Office, EI=Electricity, MF=Market Facility, BK=Bank

Table 5

Sufficiency of agricultural production observed in the buffer zone of SWR in 2023

Study Area	**Situation of agricultural production (%) Household**				
	No Agric. Production	**Sufficient for 4 months**	**Sufficient for 6 months**	**Sufficient for 12 months**	**Selling Surplus**
Chathari	10.00	60.00	10.00	20.00	0.00
Sundarpur	5.00	45.00	30.00	15.00	5.00
Bagphanta	20.00	10.00	60.00	5.00	5.00
Nayagaun	5.00	55.00	20.00	10.00	10.00
Lalpur	20.00	20.00	30.00	10.00	20.00
Average	**12.00**	**38.00**	**30.00**	**12.00**	**8.00**

Source: Field survey, 2023

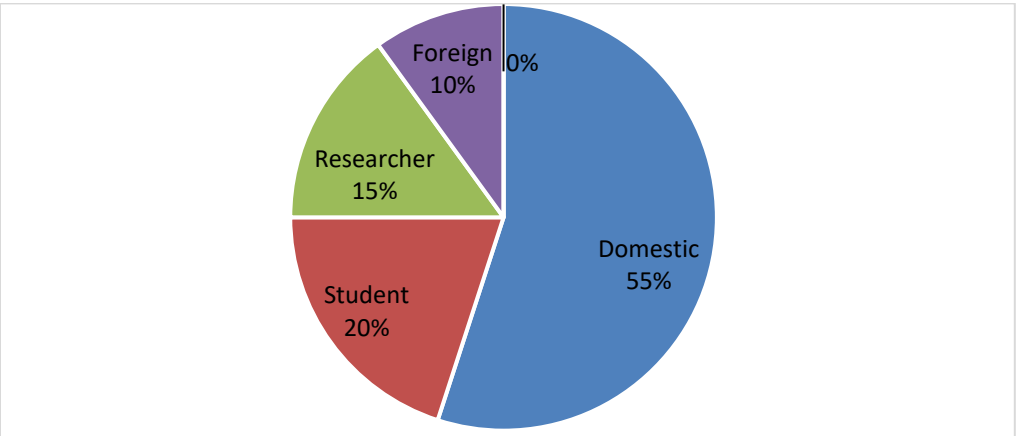
Total number of sample households observed (N) =50 i.e. 10 sample household per sample location.

Tourism Development

Tourism development has emerged as a significant activity in the buffer zone of the Shuklaphanta Wildlife Reserve (SWR). Through an analysis of local people's responses, it was found that approximately 55% of the visitors to SWR comprise domestic tourists from various regions of the country. Additionally, the remaining visitors to SWR and its surrounding areas consist of international tourists, students, and researchers.

Figure 2

Local People's Responses on the Types of Tourists Visiting the SWR



Source: Field survey, 2023

Tourists visiting the wildlife reserve and its surrounding areas play a significant role in generating income and employment for the local communities. This economic contribution occurs through various means, including charges for food and lodging, tourist guiding services, entrance fees to specific tourist destinations, and transportation charges, among others. The specific impact of tourism on income and employment generation in different locations within the buffer zone of the Shuklaphanta Wildlife Reserve (SWR) has been represented using multiple pie diagrams.

Resource Conservation and Utilization in the Buffer Zone

Moreover, the SWR also fulfills an essential role in conserving natural resources. As evident from the current survey conducted in the buffer zone, 90% of the local responses indicated that the wildlife reserve has successfully conserved floral and faunal resources. Additionally, 70% of the responses stated that the reserve has contributed to water resource conservation, while 20% revealed that the reserve supports the use of water resources for irrigation purposes. However, 15% of the responses expressed concerns about negative impacts from the wildlife reserve, particularly attributed to wild animals.

Table 6

Responses of the Local People in the Buffer Zone on the Resource Conversation Role of SWR

Study Area	Response (%) on Resources Conservation due to SWR			
	Water Resource Conservation	**Floral & Faunal Conservation**	**Use of Water Resource on Irrigation**	**Negative Impacts by Wild Animals**
Chathari	90.00	90.00	10.00	10.00
Sundarpur	100.00	100.00	10.00	0.00
Bagphanta	90.00	90.00	50.00	15.00
Nayagaun	80.00	100.00	0.00	5.00
Lalpur	90.00	90.00	0.00	0.00
Average	**90.00**	**94.00**	**14.00**	**6.00**

Source: Field survey, 2023

The Shuklaphanta Wildlife Reserve (SWR) annually issues public notices for a duration of 5-7 days to permit the cutting and collection of Khar grass (roofing straw) and other necessary forest resources by the rural communities residing in the buffer zone. Only during these specified days, the rural people are authorized to enter the wildlife reserve's forest area for the purpose of cutting and collecting Khar and other forest products. Any access to the SWR for timber product collection outside of these designated days requires prior permission from the SWR administration.

Impact on Agricultural Product

The Buffer Zone approach of SWR has significantly influenced the development process in the surrounding rural areas, particularly impacting the rural communities residing in the buffer zone. A comprehensive survey was conducted to assess the SWR's impact on the rural population, specifically focusing on its effects on agricultural production, environmental biodiversity, and the social and economic aspects of the people's livelihoods.

Impact on Bio-diversity and Environment

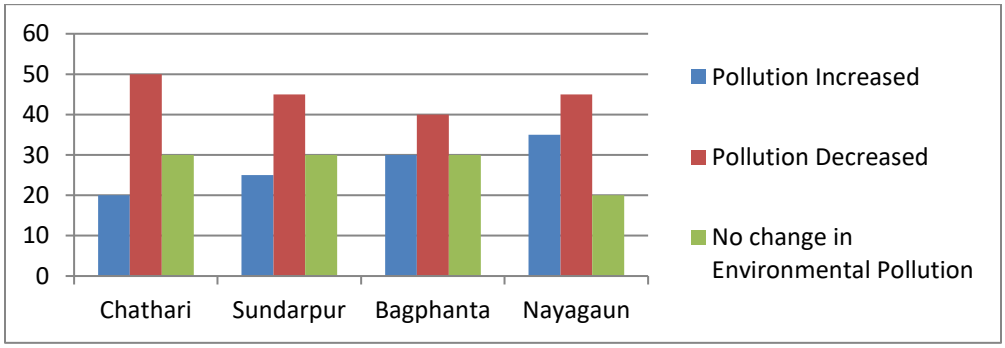
Regarding agricultural production, the survey indicates a positive impact of the SWR, with the majority of responses highlighting that the presence of the forest has led to an increase in rainfall, ultimately contributing to improved agricultural productivity. Additionally, the SWR has supported agricultural processes by facilitating soil fertility maintenance, irrigation, and soil conservation practices.

In terms of the environment and biodiversity, the survey reveals a positive impact of the SWR in reducing environmental pollution. Approximately 50% of respondents reported a decrease in environmental pollution in the surrounding areas after the establishment of the SWR,

while 30% indicated no significant change, and 20% reported an increase in pollution. These responses have been presented in the form of a multiple bar diagram in Figure 4.5.

Figure 3

Diagram Showing the Local People's Response on Impact of SWR on Environmental Pollution



Source: Field survey, 2023

Furthermore, the people's responses indicate that greenery has been promoted due to SWR in the surrounding area promoting floral and faunal diversity. And there is also positive impact of the SWR to the socio economic environment in the buffer zone. Table 7 further describes the impact of the SWR in surrounding rural areas environment and bio diversity, including socio-economic environment.

Table 7

Local People's Response on Impact of SWR on Environment and Bio-Diversity

Study Area	Percentage Response					
	Greenery Promotion	Degrading Environment	Promoting Bio Diversity	Negative Impact on Bio Diversity	Neg. Impact on Soc-Eco environment	Pos. impact on Soc-eco environment
Chathari	90.00	10.00	85.00	5.00	5.00	85.00
Sundarpur	80.00	20.00	75.00	10.00	5.00	75.00
Bagphanta	95.00	40.00	70.00	25.00	15.00	80.00
Nayagaun	75.00	5.00	60.00	0.00	10.00	85.00
Lalpur	95.00	10.00	80.00	10.00	5.00	70.00
Average	**87.00**	**17.00**	**74.00**	**10.00**	**8.00**	**79.00**

Source: Field survey, 2023

Socio Economic Impact

Survey shows that there is a positive impact of the SWR in terms of income and employment generation of the people in the buffer zone. On an average, 44% respondent desponded that income making and employment opportunities have been increased due to the SWR. However, 50% responses were stating that there is no change in income and employment

situation in the buffer zone and 6% responded that negative impact has been caused due to the SWR.

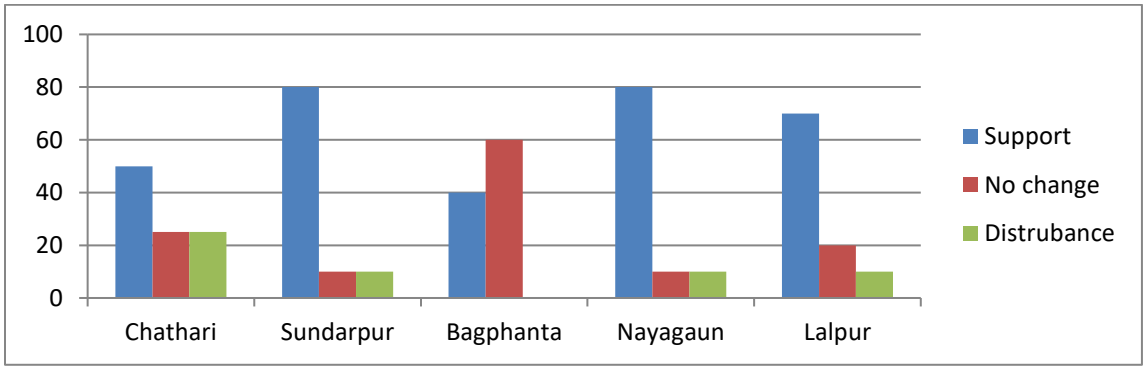
Impact on Women's Economic Activities

The presence and activities of the Shuklaphanta Wildlife Reserve (SWR) in the buffer zone have positively impacted women's economic activities, as revealed by the study. According to the survey findings, an average of 52% of respondents expressed that women's economic activities have been supported and enhanced through the various programs and initiatives of the SWR. However, 42% of respondents reported no noticeable change in women's economic activities in the buffer zone due to the impact of the SWR, while 6% stated that women's activities have been adversely affected by the reserve. Figure 4 illustrates the local people's responses in different locations of the study area concerning this matter, as gathered from the survey.

Women in the buffer zone are organized into various groups, enabling them to engage in diverse economic and social functions. These groups are involved in income and employment generating activities, such as vegetable farming, goat rearing, poultry farming, mushroom cultivation, sewing and cutting, among others. Additionally, some groups conduct savings and credit programs to benefit the farm households within the buffer zone of the SWR.

Figure 4

Local People's Response on Impact of SWR on Women's Economic Activities



Source: Field survey, 2023

Conclusion

The current study undertook an assessment and analysis of the attitudes and socio-economic conditions of rural inhabitants in the Buffer Zone (BZ). It also examined the impact of the Shuklaphanta Wildlife Reserve (SWR) on their livelihoods and poverty reduction efforts, particularly with regards to employment generation, agricultural development, and socio-economic implications. Several major issues pertaining to the interaction between the park and the local populace in the BZ were identified, including habitat quality deterioration, excessive pressure on reserve resources, limited livelihood alternatives and resources, inadequate coordination among stakeholders, and insufficient financial resources.

To ensure the conservation of natural resources within the SWR and promote sustainable rural livelihoods in the BZ, it is essential to increase public awareness. Furthermore, fostering proper coordination between the reserve management authority and the local communities is crucial for effective biodiversity conservation and sustainable rural development. Measures should be taken to combat poaching and wildlife smuggling through a coordinated and participatory approach. Encouraging the establishment and management of community forests in the BZ, with greater involvement of user committees, can alleviate the pressure on protected areas. The conservation of rare and endangered species necessitates a coordinated approach. Balancing the need for controlled access to protect forest resources and biodiversity with the requirement for the well-being of local communities is essential. Proper coordination is imperative for successful biodiversity conservation and the sustainability of rural livelihoods in the BZ. It is crucial to critically review the impact of conservation activities conducted by the Reserve, considering theoretical, practical, and scientific foundations for biodiversity preservation.

Transparency and accountability of the Reserve to the local people in the BZ is crucial, as their support is vital for biodiversity conservation and the prevention of exploitation of natural resources. Appropriate policies and programs are necessary to promote employment opportunities that align with Reserve conservation goals, such as sustainable farming, skill enhancement, and eco-tourism promotion in the BZ. Instead of displacing residents from protected areas, efforts should be made to encourage conservation-oriented development activities that improve their economic conditions. Achieving these objectives is undoubtedly challenging and requires sustained multidisciplinary cooperation and interaction.

References

Gurung, (2006). Country Representative's Message. In: *WWF Annual Report 2004-05*. P.B. box 7660, Baluwatar, Kathmandu, Nepal.

Joshi, K.D., P. Chaudhary, R.B. Yadav and B.R. Sthapit, (2003). Diversity assessment for the enhansment of selected rice landraces *Khari Kamodh* and *Llka Basmati* at Kachora, Bara. In B.R. Sthapit et al (eds.). On farm management of agricultural biodiversity in Nepal. Proceeding of a Workshop, 24-26 April 2001, Lumle, Nepal.

KMTNC, (2005). Biodiversity Conservation Center (BCC). In: *KMTNC Annual Report 2005*. KMTNC, P.O. Box 3712, Jawalakhel, Lalitpur, Nepal.

Ojha, E.R., (2005). *Biodiversity and its conservation*. Paper presented in the Lecture on Rural Development to the Master's degree students in Rural Development. CDRD/Tribhuvan University, Kirtipur, Kathmandu.

Sapkota, R.P., (2001). Foreword. In: *B.R. Sthapit et al (eds.). On farm management of agricultural biodiversity in Nepal. Proceeding of a Workshop*, 24-26 April 2001, Lumle, Nepal. NARC, LI-BIRD and IPGRI (2003).

WWF, (2006). *WWF Nepal Program: Annual Report 2004-05*. P.O. box 7660, Baluwatar, Kathmandu, Nepal.

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