



Human-Wildlife Conflict Management

Conflict to Coexistence (C2C) Strategy for
Mewang Gewog, Thimphu (2026-2030)

Divisional Forest Office, Thimphu
Department of Forests and Park Services
Ministry of Energy and Natural Resources



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Prepared by:

Lhaba, Deputy Chief Forestry Officer, Head, FRPMS
Chorten, Senior Forest Ranger, Khasadrapchu Range
Damchoe Lhamo, Section Head, FMIS
Tshewang Namgay, Forest Ranger I, Khasadrapchu Range

Inputs and Guidance:

Pema Wangda, Chief Forestry Officer, DFO, Thimphu
Phub Dorji, Nature Conservation Division, DoFPS, Thimphu

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Abbreviations

%	Percentage
AI	Artificial Insemination
BHU	Basic Health Unit
C2C	Conflict to Co-existence
DoFPS	Department of Forests and Park Services
FMID	Forest Monitoring and Information Division
GIS	Geographic Information System
HHs	Households
HWC	Human-wildlife Conflict
IKI	International Climate Initiative
M&E	Monitoring and Evaluation
NFE	Non-Formal Education
NWFPs	Non-wood Forest Products
QRT	Quick Response Team
RGoB	Royal Government of Bhutan
SMART	Spatial Monitoring and Reporting Tool
TAI	Tigers Alive Initiative
WWF	World Wildlife Fund



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Royal Government of Bhutan
Ministry of Energy and Natural Resources
Department of Forests and Park Services
Thimphu: Bhutan



Foreword



Human-Wildlife Conflict (HWC) remains a major challenge for conservation and rural livelihoods in Bhutan, particularly in forest-dependent communities like Dagala Gewog. As pressures from climate change and development increase, promoting coexistence between people and wildlife has become more urgent than ever.

The Conflict to Coexistence (C2C) Strategy for Mewang Gewog (2026-2030) is a timely, community-driven response developed

through field assessments and consultations across all Chiwogs. It focuses on reducing conflict with key species while strengthening livelihoods, protecting habitats, and enabling wildlife to thrive alongside communities through prevention, mitigation, and strong local participation.

With the support of the IKI-WWF Project, "Living Landscapes: Securing High Conservation Values in South-Western Bhutan," and close collaboration with local governments and partners, this Strategy provides a practical roadmap for sustainable coexistence. I extend my sincere appreciation to the communities of Mewang Gewog and the DFO Thimphu team for their dedication and stewardship in driving this important initiative forward. The Department of Forests and Park Services remains fully committed to its implementation to safeguard both biodiversity and community well-being for generations to come.

(Karma Tenzin)
Director

Acknowledgement

The C2C strategy for Mewang Gewog is the result of a collective and dedicated effort by the staff of the Divisional Forest Office, Thimphu. The Division sincerely acknowledges the commitment, professionalism, and teamwork demonstrated by all officers and staff who contributed their time, experience, and technical inputs toward the successful formulation of this strategy. Their sustained engagement throughout the process ensured that the document is comprehensive, practical, and grounded in field realities.

The formulation of this strategy was made possible through the unwavering support and guidance of the Department and WWF, Bhutan. The Division is deeply grateful for their strategic direction, technical advice, and continuous encouragement. The Division further expresses its sincere gratitude to the IKI Project, *“Living Landscapes: Securing High Conservation Values in South-Western Bhutan,”* for its generous financial support, which enabled the conduct of comprehensive socio-economic and field surveys. The data generated through these assessments formed a critical foundation for evidence-based planning and significantly informed the management interventions contained in this strategy. WWF-Bhutan, together with the Project Coordination Unit, played a pivotal role in facilitating the timely procurement of essential equipment and field gear, and in delivering capacity-building programs. These interventions greatly strengthened the technical capacity of the field teams involved in the assessment. Similarly, DFO Thimphu is truly grateful to Mewang Gewog Administration including RNR Sector for their support during field surveys and consultation meetings. We anticipate similar support during implementation of this strategy document.

The Division would like to extend special appreciation to Mr. Lhaba of DFO Thimphu, who played a crucial leadership role in guiding and coordinating the formulation of this strategy. His dedication, technical oversight, and leadership were instrumental in bringing the C2C planning process to completion. Finally, the Division extends its heartfelt thanks to all individuals, institutions, and stakeholders who, in various capacities, contributed to the development of this strategy. Their collective efforts have resulted in a key milestone that will guide Human Wildlife Conflict management and their co-existence in Mewang Gewog in the years to come.

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1. Introduction

Human-wildlife conflict (HWC) is a significant global challenge arising as result of interactions between human and wildlife that bring adverse consequences for both the sides (Conover, 2002; FAO, 2023). Although humans and wildlife have coexisted for centuries, increasing human population growth, developmental pressures, habitat loss and fragmentation have heightened the frequency and intensity of these conflicts (Caro et al., 2012; Kiogora & Gathoni, 2021). HWC commonly manifests as crop raiding, livestock depredation, property damage and human casualties, which disrupt rural livelihoods and exacerbate poverty (World Bank, 2023; Tobgay et al., 2019). In turn, retaliatory actions by human often threaten the already vulnerable wildlife populations, complicating conservation efforts (Adhikari et al., 2022; Sharma et al., 2021).

Bhutan, situated within the Eastern Himalayas, is one of the world's biodiversity hotspots, experiencing the complexity of HWC. With 69.71% of its land under forest cover and more than 50% designated as protected areas, the country harbors globally threatened species such as Bengal tiger, snow leopard, clouded leopard, and Asian elephant (FMID, 2023; Letro, 2021; NCD, 2023). At the same time, approximately 60% of the Bhutanese population resides in rural areas and depend heavily on agriculture and livestock for subsistence (RGoB, 2017; Bhutan Foundation, 2023).

Similarly, Mewang gewog being an agrarian community with majority of its population primarily dependent on agriculture and livestock as their main sources of income and livelihood is not an exception from HWC. Most settlements in the gewog are located within or near forests, which cover approximately 80% of the area, predominantly by conifer forests. The communities rely on forest for timber, fuelwood, leaf litter, top soils, NWFPs and many more. The community's reliance on forest resources creates a close connection. This close human-nature interface increases the frequency of wildlife incursions, resulting in significant crop losses, livestock predation, property destruction and threats to human safety (Yeshey et al., 2023). Despite numerous interventions such as age-old conventional mitigation measures, solar electric fencing and compensation schemes, the effectiveness of these measures is constrained by limited funding and short-term project support (Dendup et al., 2021a; Dorji, 2023). There is insufficient attention to spatial patterns of HWC, which are critical for identifying hotspots and prioritizing mitigation (Dhendup & Letro, 2016; Jamtsho & Katel, 2019; Sangay & Vernes, 2008).

To address such challenges, integrated and adaptive approaches are increasingly emphasized worldwide. The Conflict to Co-existence (C2C) Approach, developed in 2023 as a revision of the Safe Systems Approach

(SSA), provides a structured, seven-step methodology to guide systematic HWC management (WWF, 2023).

Building on lessons from Safe System Approach, which faced challenges in rapid assessments and implementation, the C2C model emphasizes on co-design with communities and stakeholders to ensure inclusive and context-specific solutions. By fostering collaboration, adaptive management, and innovation, the C2C framework seeks to balance biodiversity conservation with the protection of rural livelihoods, offering a pathway towards long-term co-existence in shared landscapes (Stone & Nyaupane, 2018; Wangdi et al., 2018).

2. Goal & Objectives

2.1 Goal:

“To ensure harmonious co-existence between wildlife and people through holistic approach”.

2.2 Objectives:

The objectives of the strategy are to:

- Safeguard people and their livelihood/assets alongside wildlife presence.
- Secure wildlife and its habitat to sustain healthy and resilient wildlife population.

3. Methodology

3.1 Site Description

Mewang which is one of the eight Gewogs under Thimphu Dzongkhag is located in the southern part of Thimphu district sharing boundaries with Geney Gewog to the south east, Shaba and Wangchang Gewog to the west, Naro Gewog and Chang Gewog to the North and Dagala Gewog to the East. Administratively, the Gewog consists of five chiwogs, comprising 50 villages with a total of 875 households. The area lies at an elevation ranging from 2100 to 6800 meters above sea level and is characterized by gentle to steep slopes. The Gewog has a total population of 7799 of which 4016 are male and 3783 are female (PHCB, 2017).

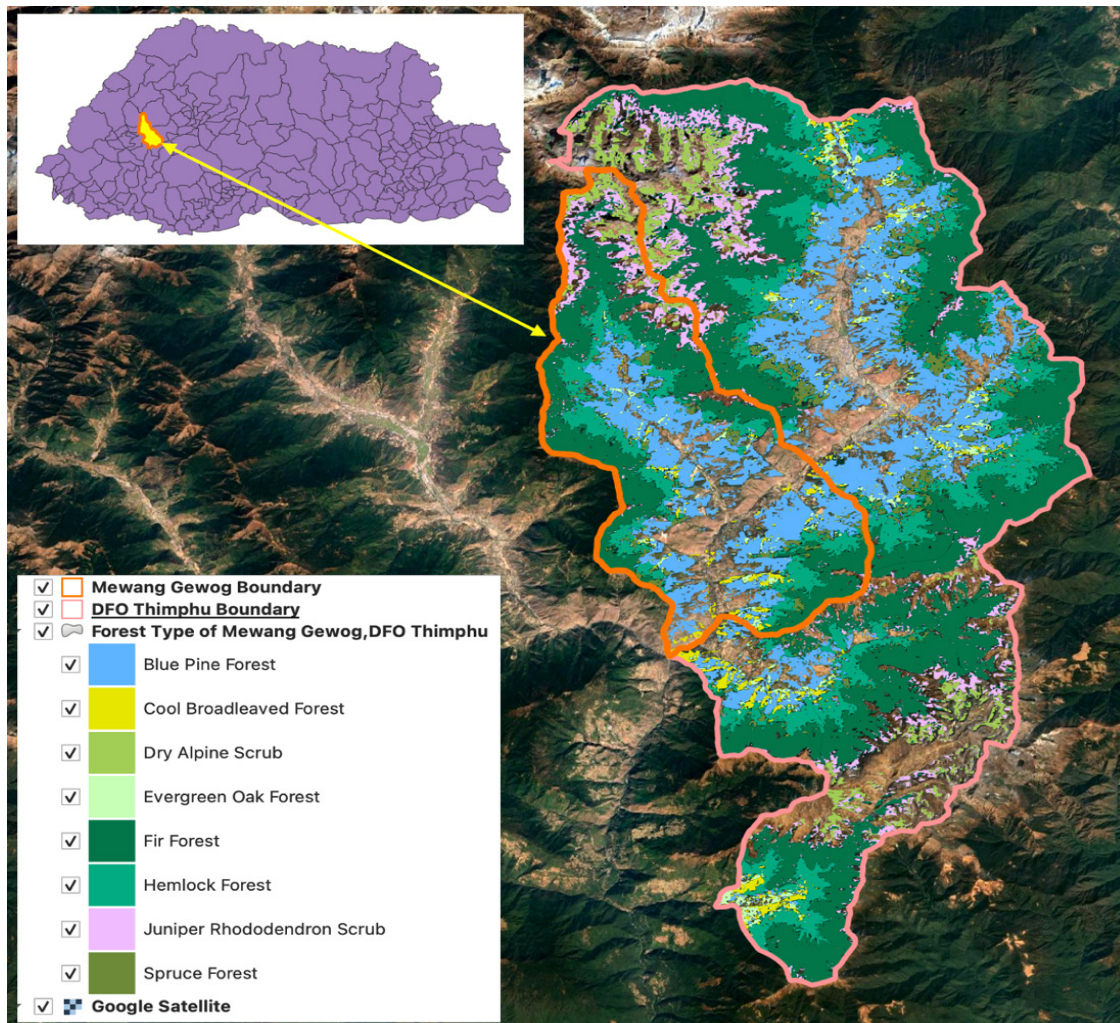


Figure 1: Map of Mewang Gewog

The Gewog is well connected by farm roads to all chiwogs with National highway running through the Gewog connecting Paro and Thimphu district. Majority of the households are agriculture and livestock dependent. However, off-farms activities are also becoming popular among the communities due to its vicinity to the capital city. The gewog has total agriculture land holding of 2335.84 acres (wet land, dry land and orchard combined) where average landholding per household is approximately 0.58 acres with as many as 4000 thram holders. All households within the Gewog have full access to electricity and mobile network coverage. In terms of public services and infrastructure, the Gewog has one Hospital at Gidagom, one middle secondary school located at Khassadrapchu, one old age care center at Sisina, two rehabilitation centers, two forest range offices located at Domtsangney and Khasadrapchu besides other offices like Bhutan Telecom, Bhutan Power Corporation Limited.

3.2 Methods:C2C Framework

The strategy has been formulated in alignment with the approaches and principles of the Conflict to Co-existence (C2C) framework. The C2C approach offers a structured and integrated framework designed to guide the systematic planning, implementation, and monitoring of Human-Wildlife Conflict (HWC) management. It is grounded in the core principles of holism, resilience, shared responsibility and tolerance. Built on the premise that achieving all four primary outcomes is essential for effective HWC management, the approach provides clear, step-by-step guidance to ensure comprehensive and sustainable results. It emphasizes on an integrated and holistic pathway that harmonizes long-term solutions with short and medium-term interventions, fostering a balanced and enduring co-existence between humans and wildlife (Figure 2).

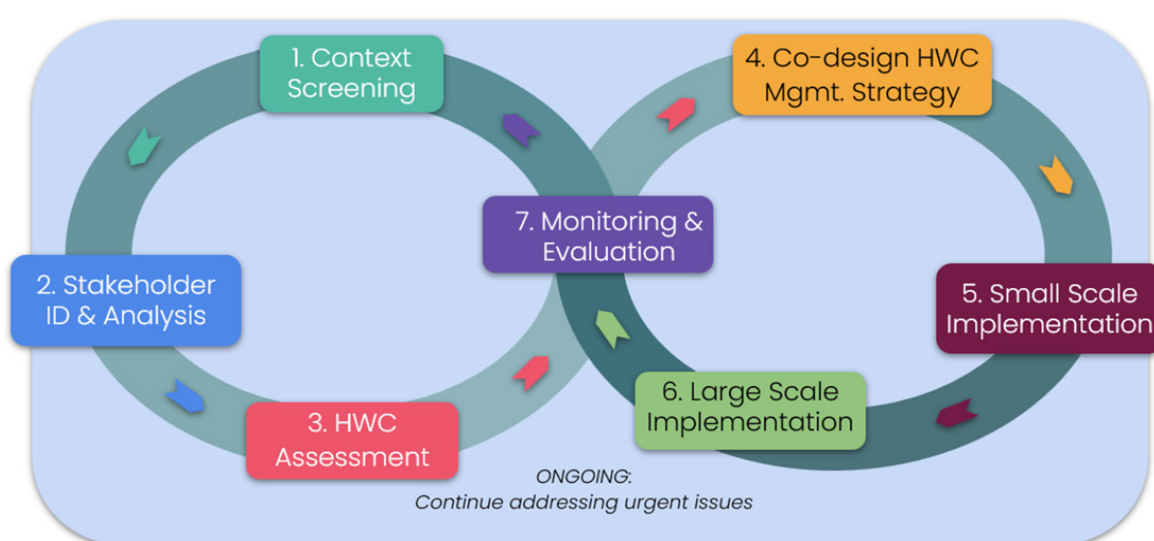


Figure 2: C2C framework to ensure effective and sustainable HWC management

3.2.1 C2C Process

Step 1: Context Screening

Context screening serves as the foundational phase of the assessment process, focusing on identifying and analyzing the unique characteristics of a landscape and its prevailing Human-Wildlife Conflict (HWC) dynamics. This phase entails the collection of comprehensive baseline information such as: household numbers, population data, land holdings, social landscape mapping and other relevant resources to develop a holistic understanding of the area.

The assessment is carried out using **C2C Tool 4**, which facilitates a detailed exploration of the landscape in terms of its demography, livelihood patterns,

trends in HWC, records of conflict species, frequency and severity of incidents, types of conflict, existing management interventions, and the underlying drivers of HWC which can be both human-induced and natural. Through this systematic process, context screening lays the groundwork for informed planning and targeted interventions.

Step 2: Stakeholder Identification and Analysis

Stakeholders are individual or group of individuals who have interest or stake in managing HWC. Typically, multiple stakeholders are involved in HWC management where some are directly impacted while others are responsible for its management. In addition, some stakeholders are not directly impacted but are highly influential. In the Conflict to Co-existence approach, it is crucial to understand the stakeholders involved in human-wildlife conflict (HWC) and their collaborative approaches.

A core team was constituted comprising of the Chief Forestry Officer, IKI focal, section heads, and Range Officers from DFO Thimphu and local government officials from Mewang Gewog comprising of Agriculture and Livestock Extension Supervisors and *Tshogpas* from five Chiwogs. The stakeholder identification and analysis were conducted employing the stakeholder analysis matrix, a C2C Tool 5, that involved clustering of stakeholders. The matrix employed a systematic evaluation process by answering a series of questions on a scale of 1 to 5, focusing on the following aspects:

- stakeholders' interest in HWC and its management,
- their influence on the long-term success of the HWC management strategy and
- their availability to participate in the co-design of the HWC management strategy.

Subsequently, the stakeholders were classified into two categories: duty bearers/service providers and community members where a total of 25 duty bearers/service providers and 288 community members were identified. The stakeholder analysis highlighted a diverse range of interest, influence and availability levels among the groups involved in HWC management.

Step 3: HWC Assessment

The field assessment/data collection was done through questionnaire survey built in SMART COLLECT for the two stakeholder groups viz Duty Bearers/Service Providers and Community Members. The structure captured diverse perspectives and compared how views align or differ across six elements: Policy, Prevention, Response, Understanding the Conflict, Mitigation and Monitoring for the four outcomes: People, Livelihoods/Assets, Wildlife and Habitat. Questionnaire addressed to Duty Bearers/Service Providers assessed the effectiveness and adherence to HWC policies and programs. Conversely, questions presented to Community Members evaluated their experiences, awareness and

perceptions of these initiatives, utilizing a Likert Scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The assessment intensity was determined applying the Yamane's (1967) formula at 95% confidence level where:

$$n = N / (1 + N \cdot e^2)$$

n = Sample Size; N = Total Population/HHs; e = level of precision at 5% or 0.05. The total household in the study area from five chiwogs is about 875 households under Mewang Gewog. Therefore, the sampling frame for the survey is determined at 275 households, which is further interpolated at Chiwog Level. However, a slightly higher SI (288 households) were taken to improve data reliability besides efforts being made to ensure equal gender representation to reduce biasness during assessment.

So, following the training session and pre-testing the household survey, data collection was undertaken in the month of April and May 2025 where One-on-one household survey was conducted in all chiwogs, interviewing 288 community members and 25 service providers/duty bearers working for the gewog.

Table 1: Households interviewed from each chiwog under Mewang Gewog

SI/No.	Name of Chiwog	Total Households	No. of HHs interviewed
1	Jigmena	145	41
2	Khasadrapchu	249	79
3	Namseling	205	66
4	Sisina	198	67
5	Tshaluna	78	35
	Total	875	288

Step 4: Co-design

The co-design of C2C strategy development involved stakeholder consultation with all the Chiwogs under Mewang Gewog. It was done on 20th October 2025 involving key stakeholders such as local government representatives (Gup and Tshogpa), RNR officials (Livestock and Agriculture), forestry officials and community members. The development of the C2C strategy followed participatory approaches to ensure that the strategy document is aligned with the needs and perspectives of the local communities.

A total of 35 households participated in the consultation process and co-designing of the strategy for Mewang Gewog, with 51% of participants being male (n=18) and 49% female (n = 17) as tabulated here under:

Table 2: Participants from Chiwog during Co-design consultation

Sl/No.	Chiwog	Nos. of Participants	Male	Female
1	Jigmena	7	3	4
2	Khasadrapchu	7	2	5
3	Namseling	7	5	2
4	Sisina	7	4	3
5	Tshaluna	7	4	3
Total		35	18	17
Percentage			51%	49%

During the consultation (co-design process), the results of the C2C assessment were presented to the stakeholders through a visual report detailing the HWC scenario, C2C framework, C2C process, outcome result, elements results, conflict species and specific conditions in each chiwog whereby allowing participants to validate the results. Additionally, Chiwog wise group activities were organized to identify various management intervention aimed at managing HWC, categorized into short-term and long-term actions, implementation sites and description of each action. The chiwog wise group presentation on the identified strategies/interventions were done to validate and refine the proposed actions based on overall HWC scenario. The compiled actions from the consultation (co-design) were further at the division before incorporating into this strategy document.

Step 5: Small Scale Implementation

The small-scale implementation basically focused on actions proposed by the communities and relevant stakeholders which are designed to execute within a shorter time frame depending on available resources. These activities are practical and manageable, enabling affected communities to take immediate actions in addressing the HWC. For Mewang Gewog, 11 actions have been identified as part of the small-scale implementation. These actions aim to provide quick and tangible solutions to mitigate the impact of HWC while building momentum for longer-term strategies.

4. Result and Discussion

4.1 Demography and Social Information

Understanding the demographic profile of community members is essential to capture perspectives from the community, providing inclusive and precise representation of their experiences and needs. The efforts were made to ensure gender-balanced participation both during the assessment and co-design process. The final sample comprised 60% female respondents ($n = 173$) and 40% male respondents ($n = 115$), indicating slightly higher female representation. In terms of age distribution, majority of the respondents (39%, $n = 113$) were aged between 41–59 years, followed by 31% ($n = 90$) in the age group of 18–40 years, which is closely followed by 28% ($n = 82$) in the age group of >60 years.

Regarding educational background, 45% of the respondents ($n = 130$) were illiterate, followed by primary education with 22% ($n = 65$). It is closely followed by respondents with secondary education representing 18.2% ($n = 54$). Similarly, respondents with Non-Formal Education and Tertiary/College/Technical correspond to 7% ($n = 19$) and 4% ($n = 11$) respectively.

The demographic profile aims to generate a comprehensive understanding of the community's structure, which is essential for designing effective, target oriented interventions in managing HWC. The communities found to be primarily subsistence farmers dependent on agriculture and livestock farming as their source of livelihood and income.

4.2 Overall Results of Mewang Gewog

4.2.1 Conflict Species of Mewang Gewog

Based on C2C assessment conducted through questionnaire survey using SMART COLLECT app, local communities of Mewang Gewog in one way or other face certain level of conflict with as high as 20 wildlife species. The perceived significant or priority human-wildlife conflict (HWC) species were rated by two groups viz Duty Bearers/Service Providers and Community Members/Rights Holders.

Overall, both groups recognize several common conflict-causing species, but their priorities differed notably where Community members (288 respondents) who were interviewed rated Leopard, and ungulates as the most significant conflict species, indicating the higher frequency of livestock predation and crop damage in their daily experiences. Conversely, duty bearers placed higher emphasis on Birds of Prey, Dhole, and Hog Deer, reflecting management or conservation perspectives guided by ecological importance and incident reports. The differences between the two groups highlight contrasting perspectives where community ratings reflect livelihood impacts, while duty bearer ratings focused on management priorities and ecological balance.

However, while carefully dissecting the assessment report in term of severity of impact and frequency and as validated during the codesign process, it is learnt that wild pig is the most important conflict species impacting the livelihood of local communities in all the five chiwogs. It is followed by birds, marking deer, bear and sambar.

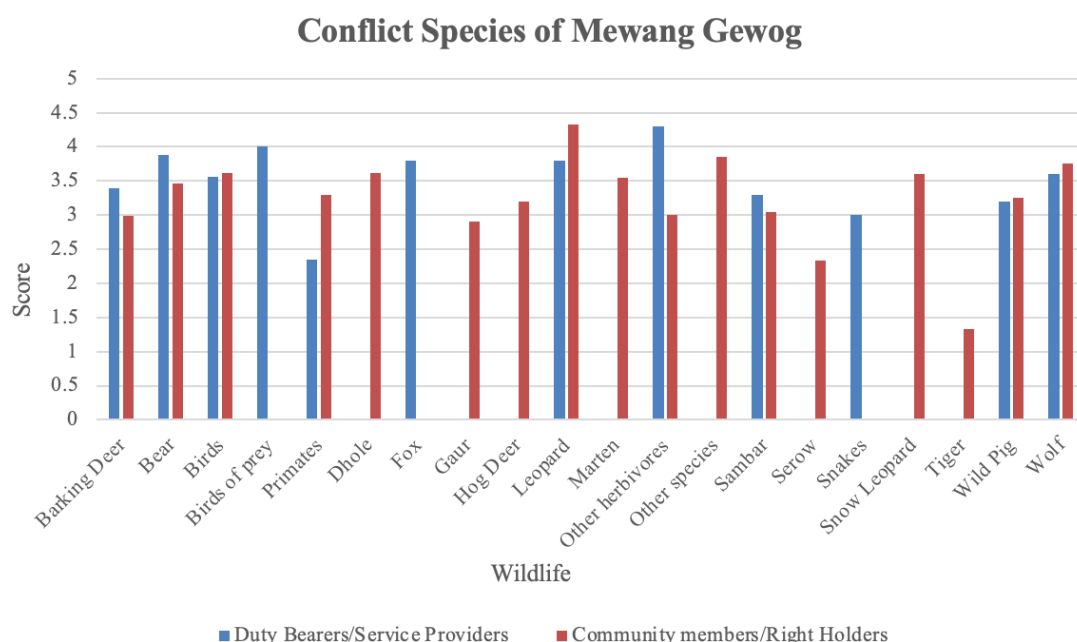


Figure 3: Conflict Species under Mewang Gewog

4.2.2 Status of outcomes at Gewog Level

As clearly shown in table 3 and figure 4, the perceptions of Human-Wildlife Conflict (HWC) in Mewang Gewog across four thematic areas/outcomes viz People, Livelihoods/Assets, Wildlife, and Habitat from two stakeholder groups: Service Providers/Duty Bearers and Community Members indicated that both groups view wildlife and habitat aspects as significant with Service Providers rating them slightly higher (3.62 and 3.55) compared to community members (3.07 and 3.04). This means that service providers recognize or perceive ecological dimensions of HWC are safer than the social dimensions (People and Livelihood)

To be precise, both the groups rated lowest for livelihoods/assets which received the score of 2.90 to 2.96 reflecting their greater concern for the immediate impacts of HWC on community wellbeing. Overall, the results highlighted a lower perceptual gap whereby integrated approaches and collaborations among relevant stakeholders with active participation from local communities are likely to address the challenges facing both environmental and social dimensions of HWC in the gewog.

Table 3: Score under each outcome by two categories of respondents

Outcome	Service Providers/Duty Bearers	Community Members
People	3.37	3.56
Livelihoods/Assets	2.90	2.96
Wildlife	3.62	3.07
Habitat	3.55	3.04

Note: The scores are between 1 to 5 for both the Service Providers and Community Members where 1 being Strongly Disagree and 5 being Strongly Agree.

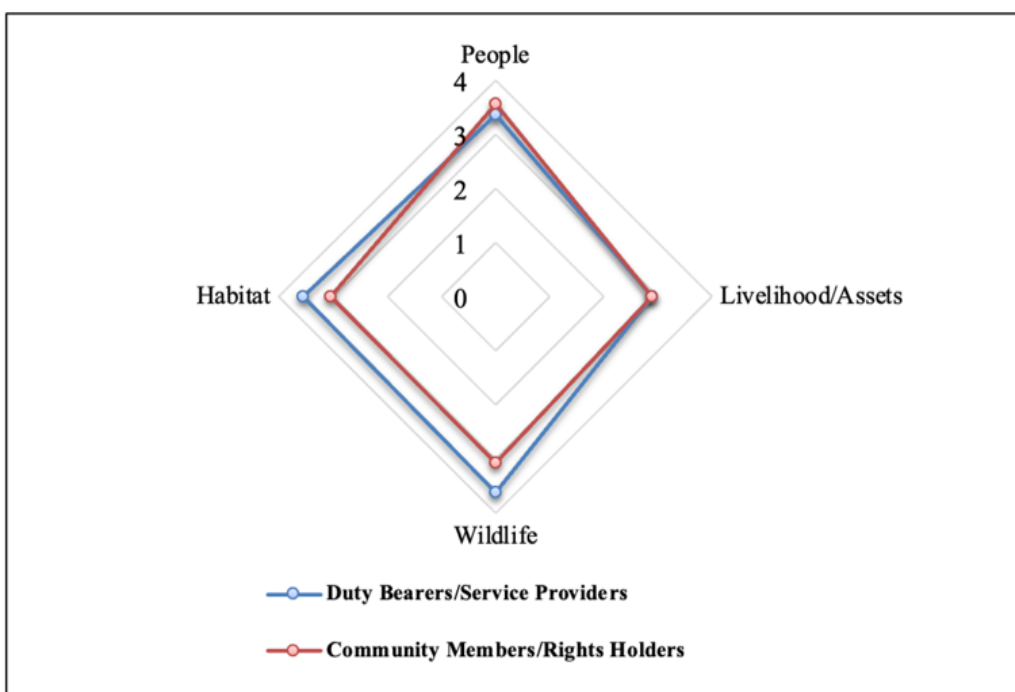
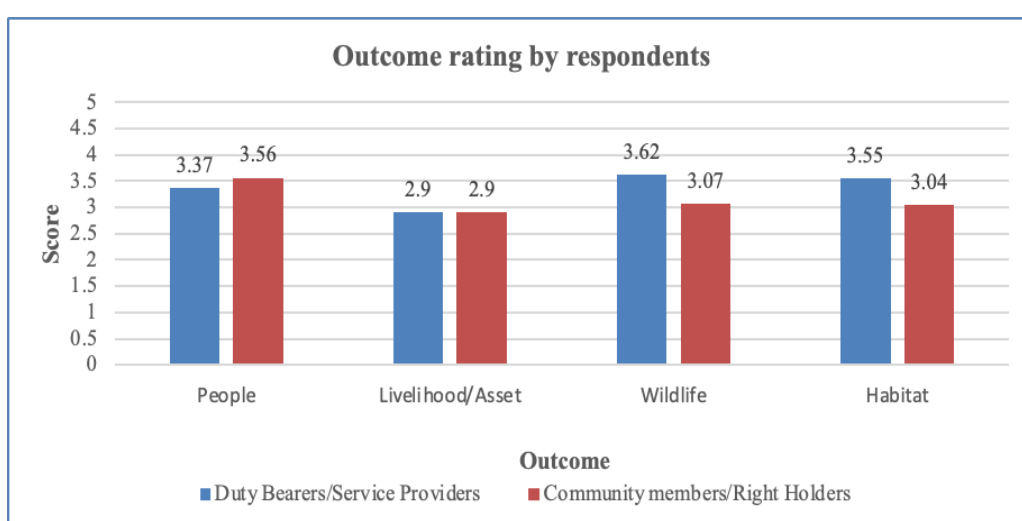
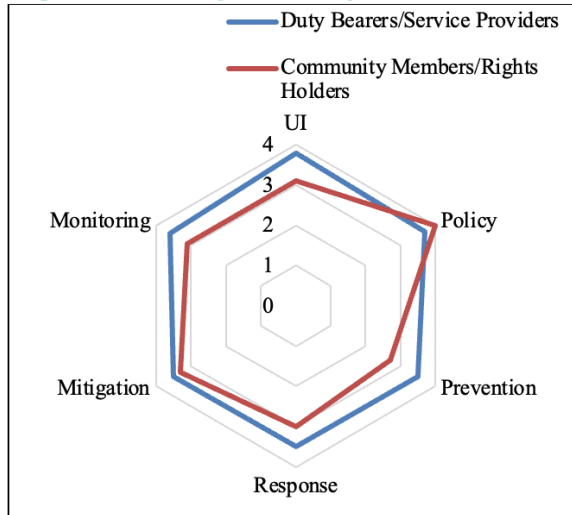


Figure 4: Result by outcome for Mewang Gewog

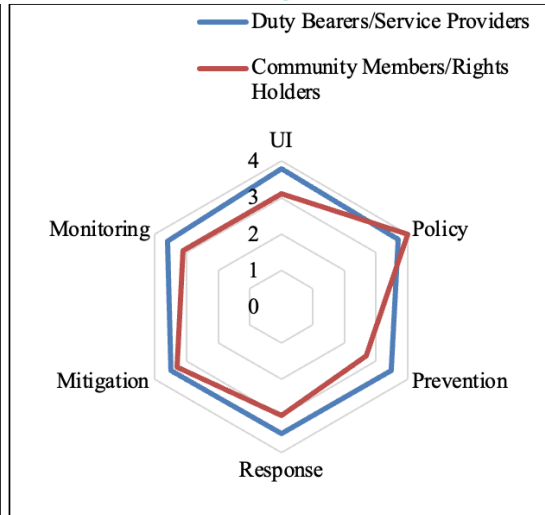
4.2.3 Status of Elements at Gewog level

To achieve the four outcomes, the six elements were taken into consideration, each of which was assessed under the respective outcomes. The following radar charts illustrate the perception of service providers/duty bearers and community members for different outcomes against six elements of co-existence framework.

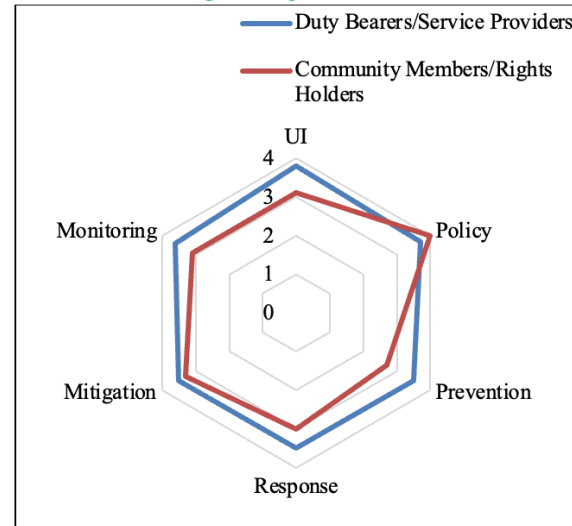
People Able and Willing to Live Alongside Wildlife.



Livelihoods/Assets Secured Against the Presence of Wildlife



Wildlife Thrives Alongside People



Habitat Sufficient to Ensure Sustainable Wildlife Populations

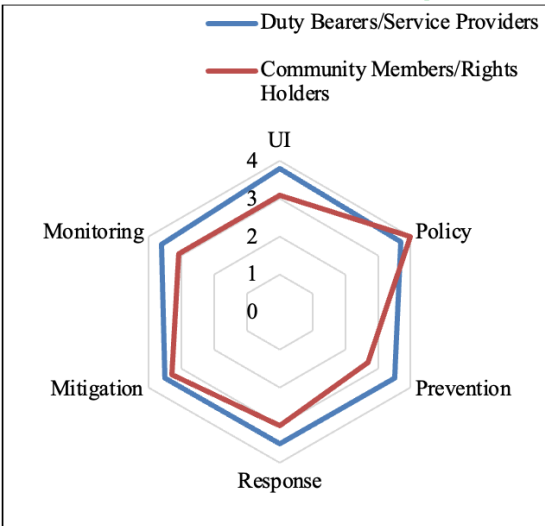


Figure 5: Results by elements for each of the outcomes

The assessment revealed six critical elements that must be considered under each outcome to effectively ensure human-wildlife co-existence. The results and findings in general at the Gewog level are as follows:

i. People Able and Willing to Live Alongside Wildlife

The radar chart compares the perspectives of Duty Bearers/Service Providers and Community Members/Rights Holders across six elements viz UI, Policy, Prevention, Response, Mitigation, and Monitoring related to human-wildlife conflict (HWC). Both groups display similar patterns, indicating shared understanding and willingness to coexist with wildlife, though slight variations exist. Community members rated higher in Policy and Mitigation, reflecting strong local interest in long-term strategies and co-existence frameworks. Service providers score slightly higher in Response and Monitoring, highlighting institutional focus on reactive and follow-up mechanisms. The close alignment across all elements suggests collaboration and mutual commitment to co-existence, where communities are not only willing but also capable of adopting co-existence strategies when adequately supported by responsive policies, effective prevention, and continuous monitoring. Overall, the diagram portrays a constructive balance between local engagement and institutional support for living harmoniously alongside wildlife.

ii. Livelihoods/Assets Secured Against the Presence of Wildlife

The radar chart inserted here above highlights a generalized perceptions of Duty Bearers/Service Providers and Community Members/Rights Holders in terms of efforts made towards securing livelihoods and assets in areas affected by human-wildlife conflict (HWC). Overall, both the groups expressed strong alignment whereby suggesting shared priorities and collaborative potential in ensuring human wildlife co-existence. Service providers rated slightly higher across most of the elements, particularly for UI, Response, and Monitoring which indicate confidence in institutional systems and interventions that protect community livelihoods. Community members, on the other hand, rated higher for Policy and Mitigation, reflecting their emphasis on practical measures and policies that prevent losses and promote sustainable co-existence. So, a relatively balanced score across all six elements implies that while there are minor perception gaps, both the groups recognize the need for integrated approaches that combine proactive prevention, responsive management and continuous monitoring. The shared outlook therefore suggests growing willingness and capacity among communities and institutions to safeguard livelihood and assets while allowing wildlife to thrive within the shared landscapes

iii. Wildlife Thrives Alongside People

The radar chart inserted in this document basically highlights on perceptions between Duty Bearers/Service Providers (in blue) and Community Members/Rights Holders (in red) across six thematic elements related to Human-Wildlife Conflict (HWC) management viz Policy, Prevention, Response, Mitigation, Monitoring, and UI (Understanding and Integration).

Overall, both groups show similar understanding and engagement levels indicating a shared commitment towards fostering co-existence where wildlife thrives alongside people. However, Duty Bearers rated slightly higher in areas such as Prevention, Response, and Monitoring, reflecting their active institutional roles in implementing HWC interventions. Community members, on the other hand, scored slightly higher for Policy which in reality indicate that local communities recognize and value policy frameworks that safeguard both human livelihoods and wildlife conservation.

The close alignment of both groups implies effective collaboration, yet the slight gaps highlight the need for stronger community engagement, participatory monitoring and capacity building to ensure balanced responsibility and co-existence between people and wildlife.

iv. Habitat Sufficient to Ensure Sustainable Wildlife Populations:

This radar chart inserted under status of elements at the gewog level illustrates the broad perspectives of Duty Bearers/Service Providers and Community Members/Rights Holders on key aspects of Human-Wildlife Conflict (HWC) management in areas where maintaining sufficient wildlife populations and healthy habitats is a priority.

Both groups show comparable perceptions across six thematic areas viz Policy, Prevention, Response, Mitigation, Monitoring, and Understanding & Integration (UI) which indicate a collective recognition of the importance of habitat-based co-existence. Duty Bearers rated slightly higher across most parameters, particularly in Prevention, Response and Monitoring, reflecting stronger institutional roles in habitat management and wildlife protection. Community members rated higher for Policy suggesting an appreciation for conservation policies that safeguard both livelihoods and wildlife habitats.

So, the close alignment of the two perspectives underscores a shared understanding of the need for balanced conservation where maintaining adequate habitats is expected to ensure a thriving wildlife population and minimizing the conflicts. However, the minor differences highlight the need to strengthen local participation in habitat management, monitoring and preventive actions, ensuring community ownership and long-term co-existence between humans and wildlife.

4.3 Status of Outcome at Chiwog level

4.3.1 Jigmema Chiwog

A total of 41 (25 female and 16 male) respondents were interviewed for the C2C assessment from Jigmema Chiwog where it revealed that Wild Pig is reported as the most important conflict species both in terms of severity and frequency. It is followed by barking deer and birds. Similarly, 7 duty bearers

who were interviewed from Jigmena Chiwog also reported wild pig as the most important conflict species followed by birds and bear. This was further reported or validated during the co-design process held on 20th October 2025.

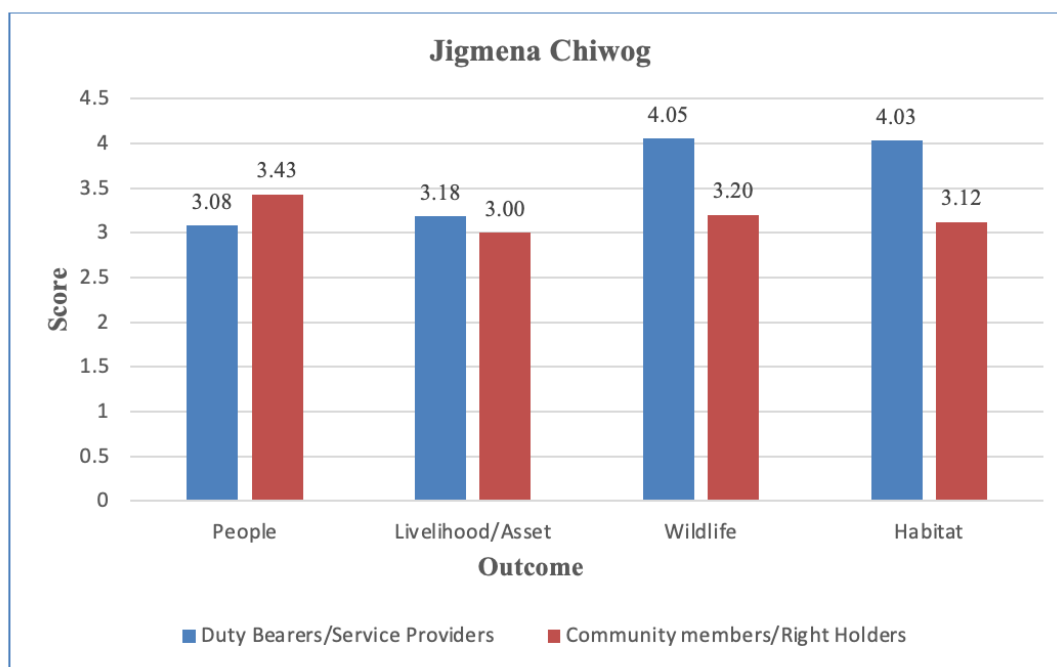


Figure 6: Results by outcome for Jigmena Chiwog

It is understood that the Livelihood/Assets has received the lowest score which therefore needs higher level of attention compared to other outcomes to address the human wildlife conflict within the Chiwog. It is observed that Habitat outcome also needs relevant interventions to balance the factors contributing to the conflicts.

In Jigmena Chiwog, majority of the elements were rated almost below the average score of three which therefore demand relevant interventions to address the human wildlife conflict issues and challenges.

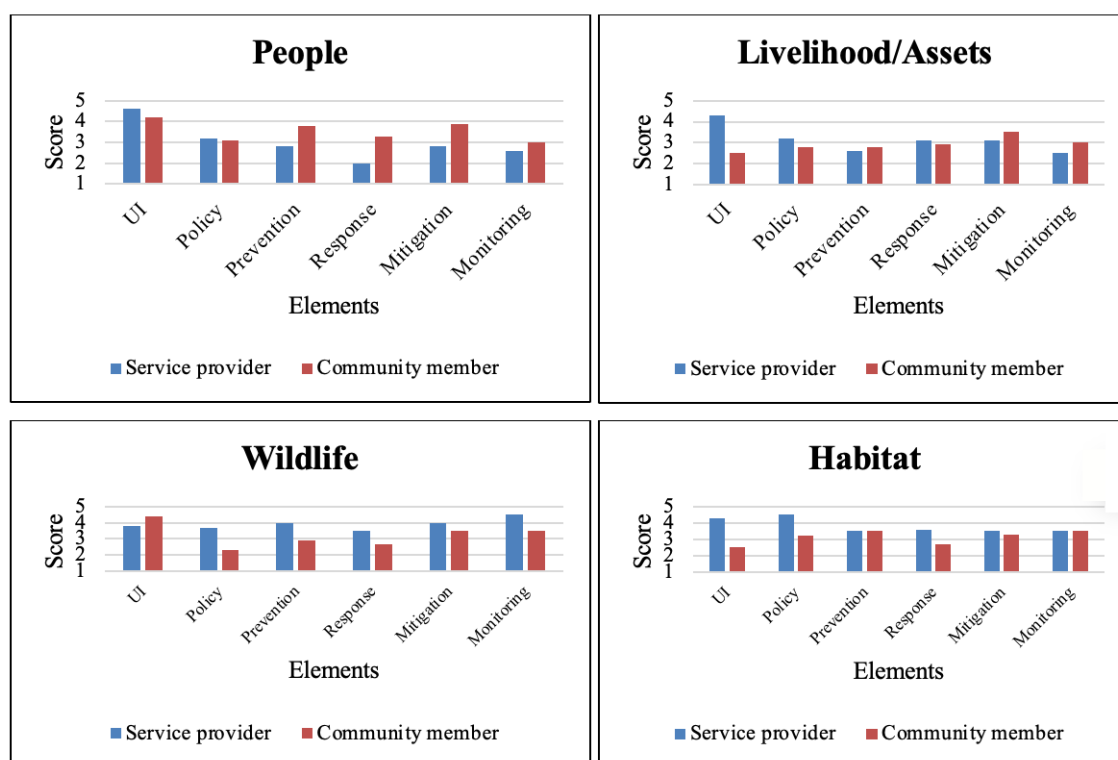


Figure 7: Result by elements for Jigmena Chiwog

4.3.2 Khasadrapchu Chiwog

Like, Jigmena, Khasadrapchu Chiwog also experiences HWC from as many as 12 wildlife species with wild pig being reported the most important conflict species both in terms of impact severity and frequency. Next to wild pig, people are affected by birds, bear and barking deer as revealed from interviews with as many as 79 respondents who represented and spoke for the chiwog. So, the bar graph below illustrates the perception ratings of Duty Bearers/Service Providers and Community Members across four parameters/ outcomes: People, Livelihood/Assets, Wildlife, and Habitat in Khasadrapchu Chiwog. In general, both the groups exhibited relatively similar perspectives with scores ranging between 2.9 and 3.6. However, the "Livelihood/Assets" received the lowest rating from both the groups (around 2.9), suggesting economic or resource-based vulnerabilities as result of HWC. Nonetheless, the results suggested a generally positive perception with minor differences in viewpoints, particularly between human and environmental dimensions.

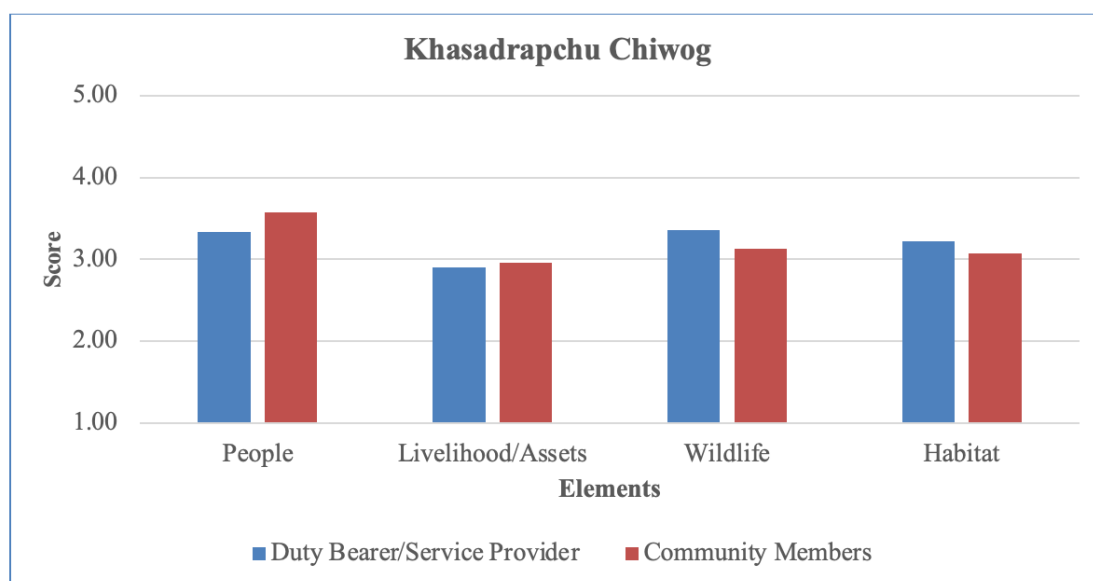


Figure 8: Result by outcome for Khasadrapchu Chiwog.

The following graphs depict the outcome by elements for Khasadrapchu Chiwog where Mitigation and Understanding the Interaction (UI) elements tend to impact the two social dimensions/outcomes of the HWC. Similarly, the chiwog has rated low in terms of Prevention element of the environmental dimension. To, summarize, the ratings by element against each outcome will guide towards identifying the relevant actions. The same information was presented to the local communities during the codesigning process held on 20th October 2025 where community members were given opportunity to reflect and propose interventions which may address existing challenges.

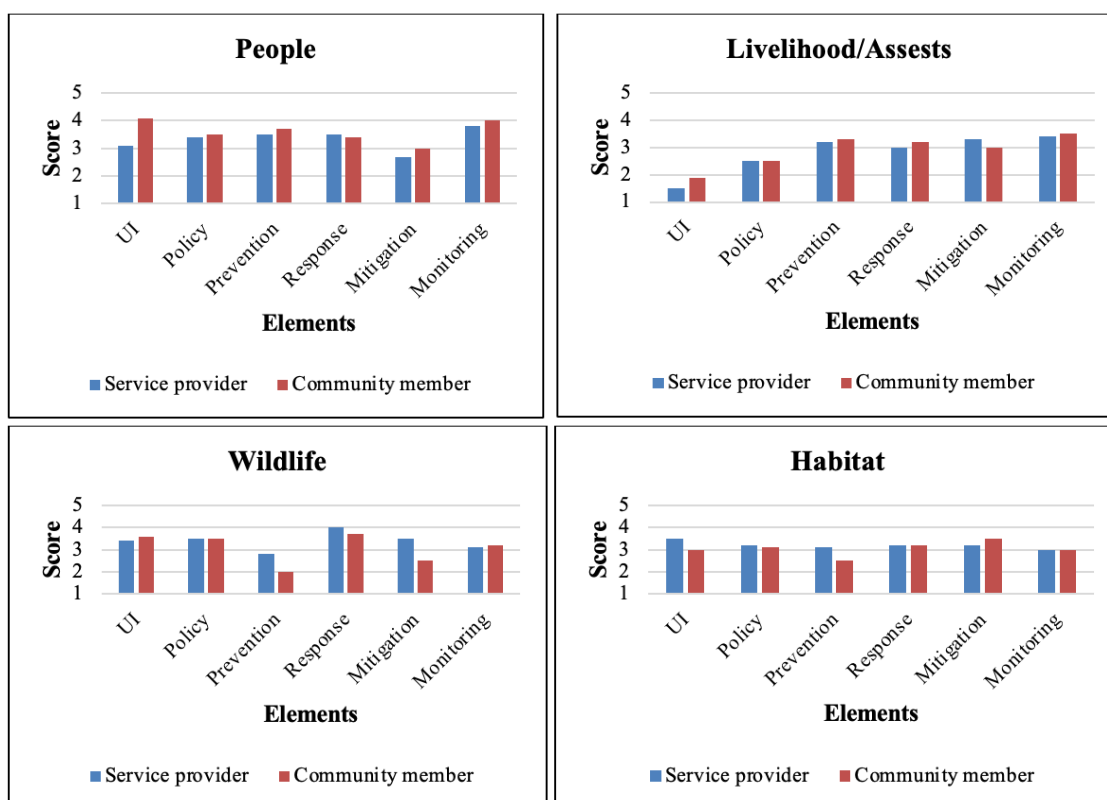


Figure 9: Result by elements for Khasadrapchu Chiwog

4.3.3 Namseling Chiwog

A total of 66 respondents (38 female and 28 male) were interviewed to assess and understand the HWC scenario of the Chiwog. Additionally, one duty bearer/service provider was also interviewed to understand the HWC from the perspectives of institutions and official serving for the Chiwog. The assessment report revealed that as many as 15 wildlife species are recorded which in one way or other impact people and their livelihood. Similar to other chiwogs, Namseling is not an exception in terms of impact brought by wild pig. The chiwog is also impacted by bird and barking deer besides other wildlife species. It is also reported that the Chiwog experienced impact from wild dog/dhole.

Outcome at Chiwog level revealed that both livelihood and habitat received similar score meaning both outcome parameters are impacted as result of HWC. It therefore underscores that similar level of interventions may be necessary to mitigate the issues and challenges as result of HWC and ensure co-existence in long run.

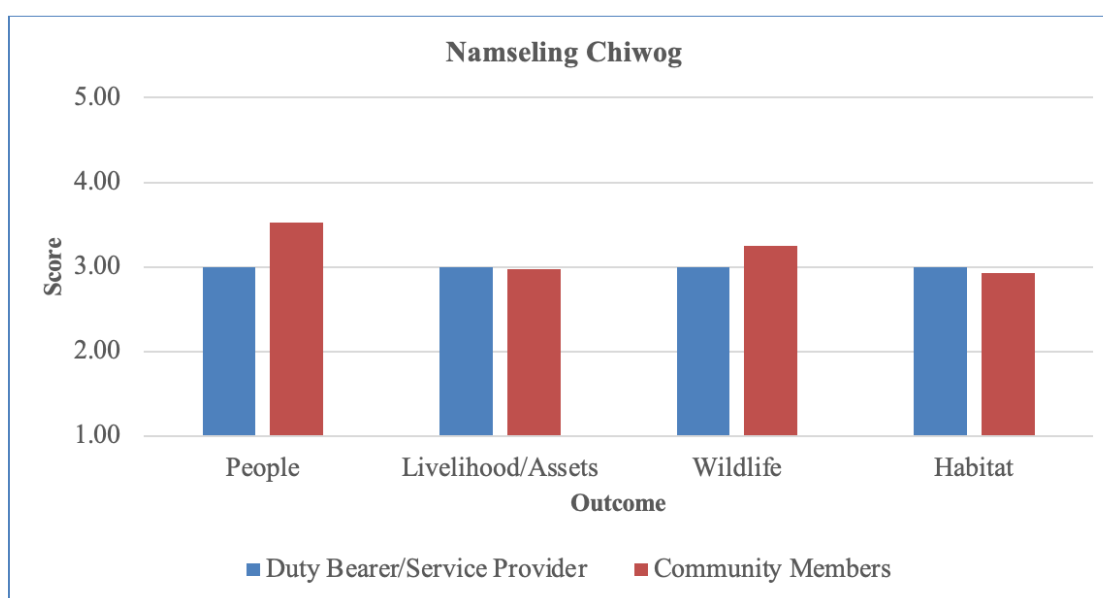


Figure 10: Results by outcome for Namseling Chiwog

Looking at individual outcomes by elements, Namseling Chiwog received the lowest score for Habitat which is an environmental dimension. Like other Chiwogs, Namseling Chiwog also received lower score for the livelihood/ Assets demanding remedial measures both in terms of habitat revival and livelihood enhancement to balance the four outcomes and ensure long term human wildlife co-existence.

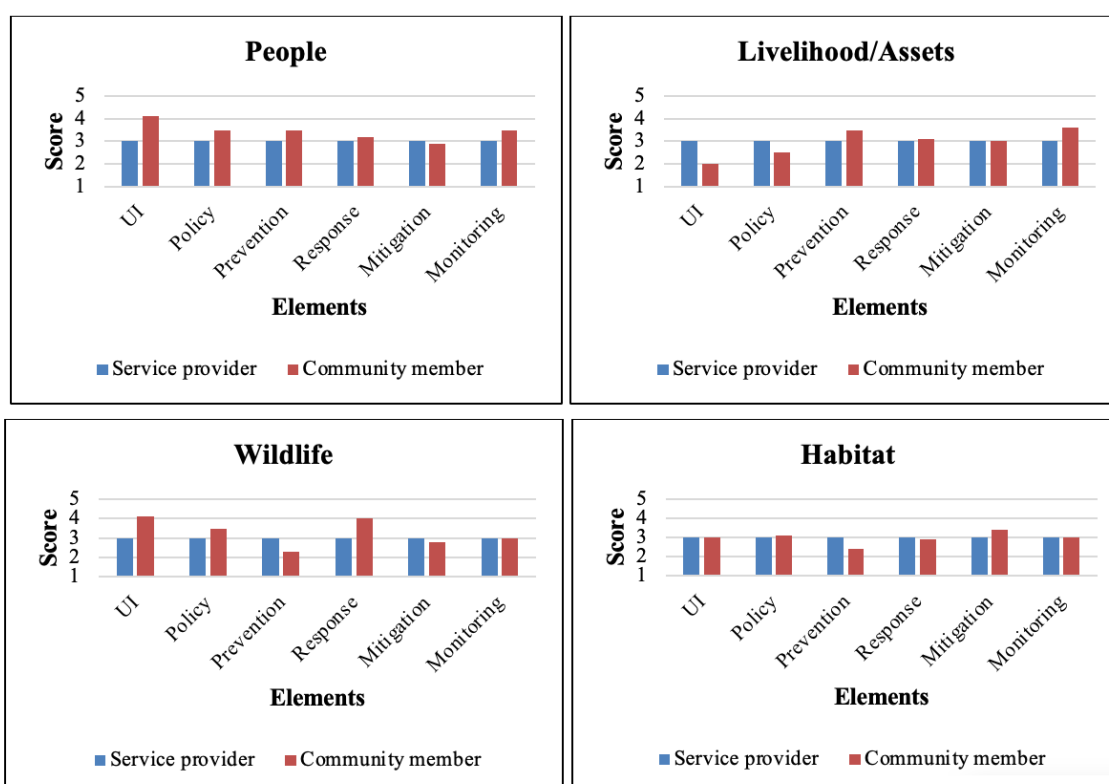


Figure 11: Result by element for Namseling Chiwog

4.3.4 Sisina Chiwog

The C2C assessment conducted in April–May 2025 interviewed as many as 67 community members (42 female and 25 male respondents) to understand the HWC scenario at the Chiwog level. The Assessment also took account of the duty bearers/service providers by interviewing at least two officials who work closely with local communities. The assessment report revealed that a total of 14 wildlife species impact people and their livelihood where wild pig is reported the most important conflict species both in terms of impact severity and frequency. This is closely followed by birds, bear and barking deer along with other species such as langur and sambar.

The assessment result for Sisina Chiwog presented the perception of Duty Bearers/Service Providers and Community Members regarding human–wildlife conflict (HWC) across four domains: People, Livelihood/Assets, Wildlife, and Habitat. Both groups rated “People” highest (3.5), indicating strong community cohesion and awareness of HWC issues. “Livelihood/Assets” received the lowest scores (around 2.8–2.9), highlighting that crop and livestock losses remain a major concern. Duty Bearers rated “Wildlife” (3.4) and “Habitat” (3.4) higher than Community Members (around 3.0–3.2), suggesting that officials perceive better wildlife management and habitat conditions than local residents do. This difference may reflect a gap between policy–level understanding and ground–level challenges faced by farmers. Overall, the findings suggest that while social resilience is strong, livelihood vulnerability due to wildlife impacts remains significant and requires targeted mitigation efforts.

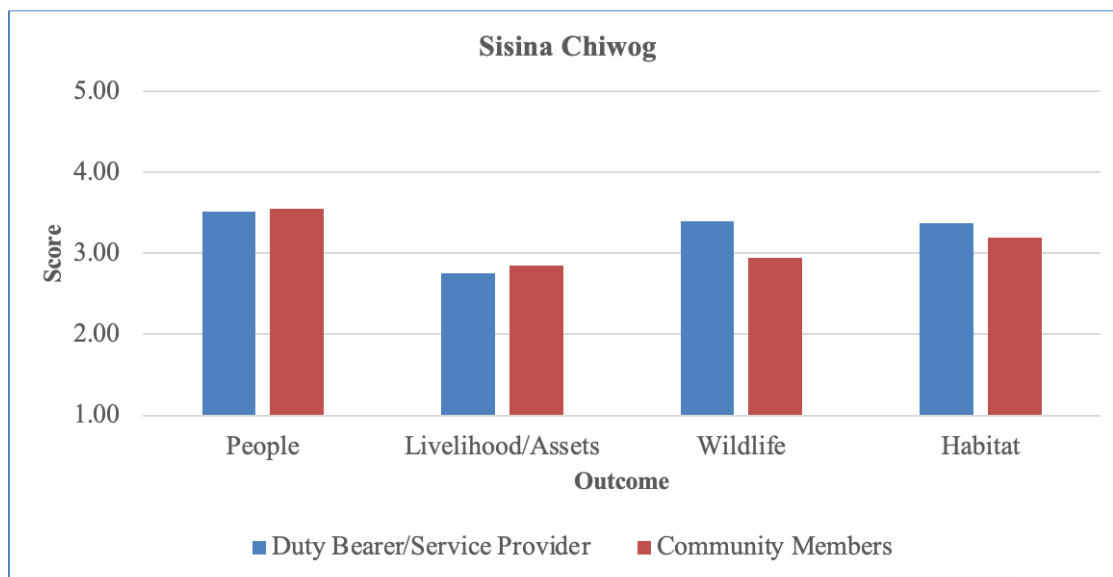


Figure 12: Result by outcome for Sisina Chiwog

At the element level for each of the four outcomes, Understanding the Interaction (UI) and Policy were rated the lowest for Livelihood/Assets indicating weakness in addressing HWC in the Chiwog. While people which is social component seems to stand resilient against HWC, the Wildlife and Habitat seem to suffer from interactions indicating weaker co-existence due to imbalance of the four outcomes. The graph will therefore guide the conservationists to draw appropriate interventions which can be both short-term and long-term actions.

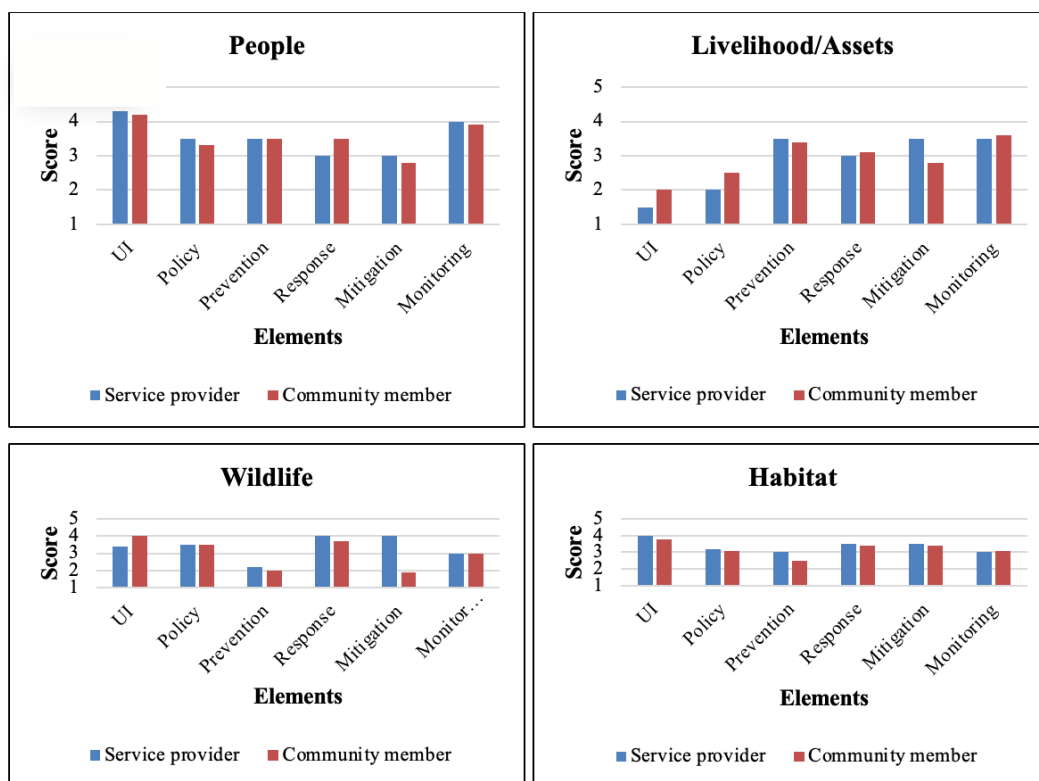


Figure 13: Result by elements for Sisina Chiwog

4.3.5 Tshaluna Chiwog

Tshaluna is one of the five Chiwogs under Mewang Gewog with relatively higher forest cover surrounding the settlements and agricultural land. Considering the forest cover and being in the Forest Management Unit with timber extraction on annual basis, local communities are expected to experience Human Wildlife Conflict. So, to understand the HWC scenario at the Chiwog level, C2C Assessment under Tshaluna covered as many as 34 households (17 female and 17 male). The assessment report revealed as many as 13 wildlife species which in one way or other impact people and their livelihood. Among the wildlife species, wild pig is reported to be the most important conflict species both in terms of impact severity and frequency. It followed by bird, bear, barking deer, langur and sambar amongst other conflict species. This has been validated during codesign process held on 29th October 2025 where community members reported the same conflict species based on their severity and frequency.

The bar graph for Tshaluna Chiwog reflects the perceptions of Duty Bearers/ Service Providers and Community Members on human-wildlife conflict (HWC) across four parameters: People, Livelihood/Assets, Wildlife, and Habitat.

The “Livelihood/Assets” received the lowest scores from both the groups (2.8–3.0) which indicates that crop and livestock losses remain major concerns and continue to affect rural livelihoods. Similarly, the “Habitat” domain shows a moderate difference, with Community Members rating it higher (3.1) than Duty Bearers (2.8), possibly implying that locals perceive habitat degradation pressures differently.

Overall, the results indicate a shared understanding of the challenges, but differing perspectives between community members and service providers on habitat condition and the effectiveness of interventions. The data highlights the need for stronger livelihood protection measures and inclusive, community-led conservation strategies to promote co-existence and reduce conflict incidents in the chiwog.

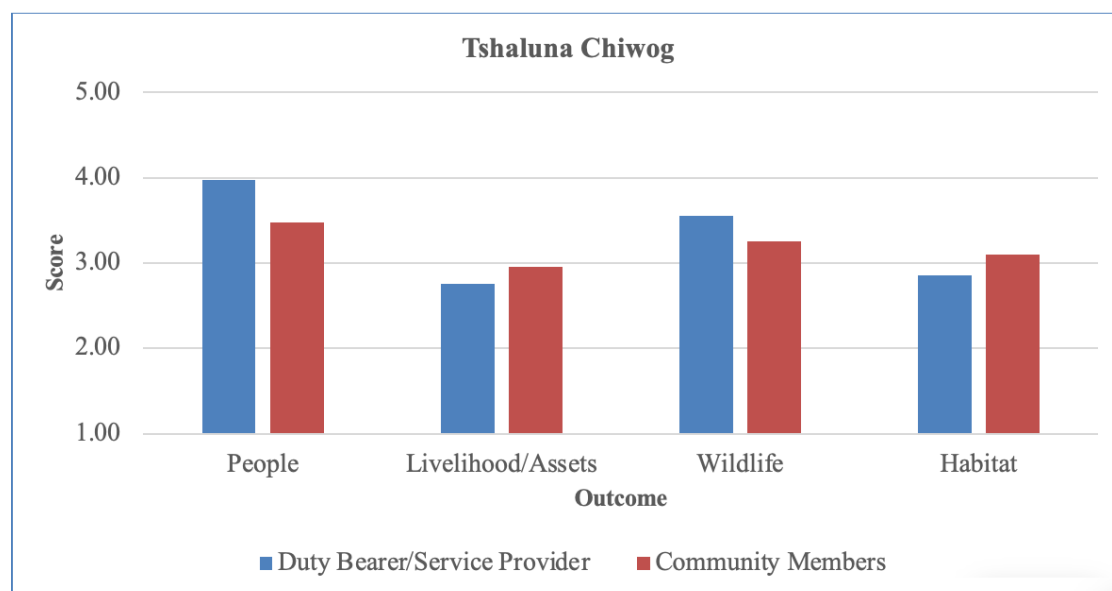


Figure 14: Results by outcome for Tshaluna Chiwog

At the element level for each of the four outcomes, Policy seemed to have received a relatively lower score followed by Response. This could be due to existence of active FMU operations whereby it tends to impact the environmental aspects of co-existence. However, unlike in other chiwogs under Mewang Gewog, the livelihood/assets parameter received a relatively higher score despite the existence of HWC. This could be due to opportunities created through FMU operations and other off-farm activities.

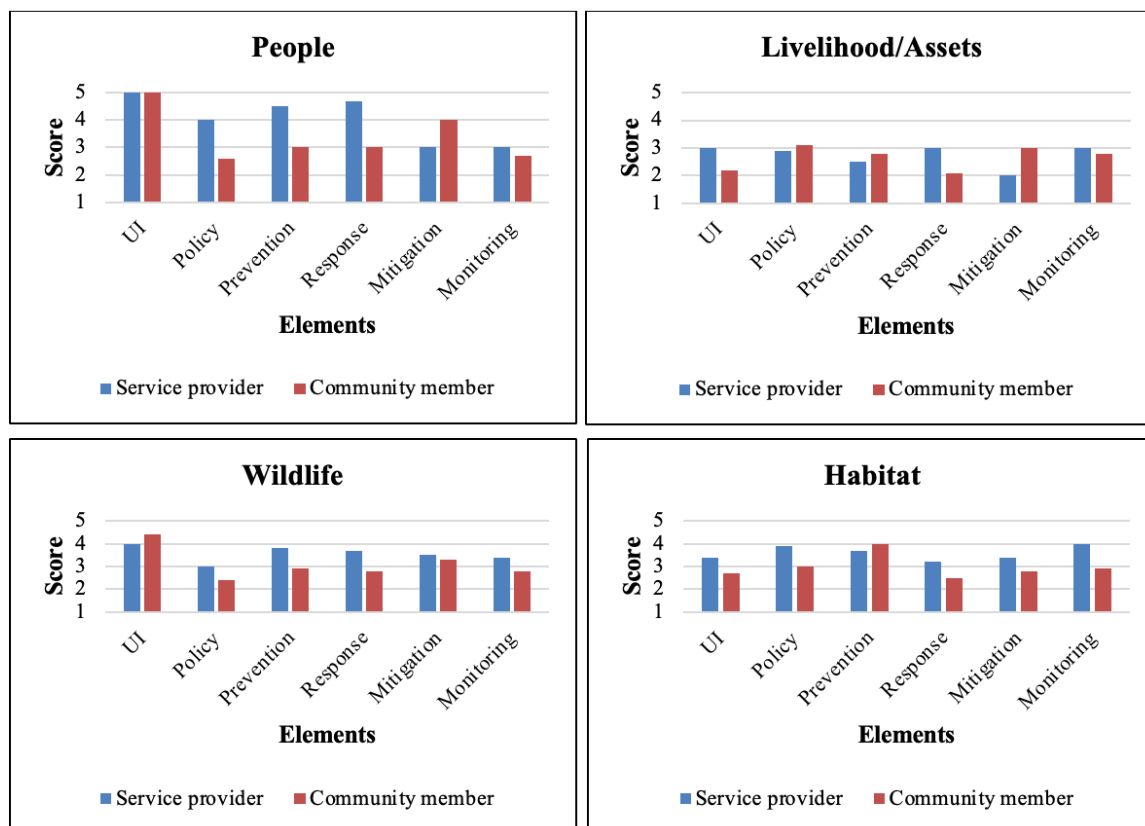


Figure 15: Result by elements for Tshaluna Chiwog

5. Conflict to Coexistence Strategy

The C2C management strategies and action plan for Mewang Gewog is designed to enable paradigm from HWC confrontation to co-existence by carefully understanding the underlying drivers, strengthening adaptive capacity and institutionalizing sustainable conservation agriculture and landscape management practices. Grounded in its insights from assessment findings, participatory stakeholder consultation or co-designing processes, the strategy emphasizes on evidence-based interventions, targeting the most conflict-prone area and species identified by local communities and service providers. The priority conflict species such as wild pig, birds, bear, barking deer, sambar deer amongst other wildlife species are identified both through face-to-face questionnaire survey and community consultation to identify relevant strategies and interventions.

Interventions are prioritized to safeguard community livelihoods and assets through integrated measures to improve crop protection and enhance production. Further, the interventions aim to strengthen sustainable livestock management and diversify income generation through alternative livelihood opportunities. Key to these approaches are the active community engagement and partnership with tailored programs which empower local communities and other stakeholders in managing human-wildlife confrontation through stewardship initiatives. Mitigation and prevention strategies will combine structural and non-structural solutions including installation of physical barriers such as live-fencing, electric fencing and chain-link fencing. In addition, the deployment of early warning system, initiation and enhancement of rapid response systems, adoption of nature-based solutions, wildlife resilient agricultural and livestock practices will be initiated and adopted to minimize crop and livestock losses.

Policy mainstreaming will ensure that wildlife conservation and conflict resolution mechanisms are embedded within local and national frameworks supported by clear implementation protocols. Continuous ecological monitoring will assess wildlife population dynamics, habitat conditions and effectiveness of the interventions, providing an evidence-based for adaptive management. Habitat restoration and land-use planning will reduce spatial overlap between human settlements and wildlife, thereby decreasing conflict risk. Multi-stakeholder collaboration, encompassing local communities, service providers, government institutions, civil society organizations and non-governmental organizations will be established to sustain long-term outcomes. This adaptive ecosystem-based and participatory framework seek to establish harmonious co-existence between people and wildlife, promoting ecological integrity while enhancing socio-economic resilience and community well-being.

The strategy outlines the strategic recommendations formulated to address the HWC challenges faced by the local communities of five Chiwogs under Mewang Gewog Administration. The strategy is built around two overarching objectives, supported by four core outcomes and **16** actions (Table 4). Among the activities, 11 actions are prioritized as short-term initiatives, while remaining 5 are identified as long-term interventions aimed at sustaining co-existence efforts.

The total projected financial outlay for the five-year Conflict to Co-existence (C2C) strategy plan (2026-2030) for Mewang Gewog under Thimphu Dzongkhag is estimated at **Nu. 84.30 million**. For this, the funding support is anticipated to be mobilized through various Conservation Partners including the IKI Project under WWF Bhutan which will end its first phase of funding support by early 2028. Besides funding support anticipated from conservation partners, it is also expected from Royal Government of Bhutan (RGoB) through plans and programs under Local Government.

Table 4: Implementation Plan and Financial Outlay

Outcome	Activities/Actions	Location	Category	Responsibilities		Budget	Funding Source	Timeline
				Lead	Collaborator			
People: able and willing to live alongside wildlife	Conduct awareness program on HWC mitigation and response mechanism including legal framework: FNCA, FNCRR and Guidelines (Nu. 2000/yr/chiwog whereby at least 20 participants/chiwog are made aware on C2C approaches/framework	All five Chiwogs	Short Term	DFO, Thimphu	Gewog	0.500	Conservation Partners/ RGoB	2026-2030
Livelihood/ Assets: secured against presence of wildlife	Support chain link fencing (2.5 km per chiwog	All five Chiwogs	Long Term	DFO, Thimphu	DoFPS & IKI Project, WWF	75.000	IKI Project WWF	2026-2030
	Clearing of bushes surrounding the agriculture field (1km/ yr)	Khasadrapchu and Jigmema	Short Term	Chiwog	Gewog, DFO Thimphu and DoFPS	0.250	Conservation Partners/ RGoB	2027
	Supply of sound repellent system (4 nos/set)	Khasadrapchu Chiwog	Short Term	DFO, Thimphu	WWF, Bhutan	0.200	Conservation Partners/ RGoB	2028
	Installation of sound repellent system	Khasadrapchu Chiwog	Short Term	Chiwog	Gewog, DFO Thimphu	0.000	NA	2028
	Enhancement of live fencing/natural barrier (Cactus and Rosa species for 1km)	Khasadrapchu Chiwog	Long Term	Chiwog	DFO, Thimphu, DoFPS	0.250	Conservation Partners/ RGoB	2029
	Support light-based repellent system	Namseling Chiwog	Short Term	Chiwog	Gewog, DFO Thimphu and BPCL	0.200	Conservation Partners/ RGoB	2029
	Improvement/ enhancement of solar fencing with higher voltage energizers and durable structure	Sisina Chiwog	Short Term	Chiwog	Gewog, DoA/ Dzongkhag	0.400	Conservation Partners/ RGoB	2027
	Facilitate to establish Payment for Environmental Services (PES)	Tshaluna Chiwog	Long Term	Gewog	DoW, Dzongkhag and DoFPS	0.200	Conservation Partners/ RGoB	2030

Wildlife: thrives alongside people	Create water holes/ revive natural ponds	Dalukha, Patserama, Kuenzadechey, Dadogeonpa	Short Term	Gewog Administration	DFO, Thimphu	0.600	Conservation Partners/ RGoB	2027- 2030
	Encourage to construct open irrigation channel or keep provision for wildlife drinking area along the climate- smart irrigation channels	Khasadrapchu Chiwog	Short Term	Gewog	DoA, Dzongkhag	0.100	Conservation Partners/ RGoB	2026- 2030
Habitat: sufficient to ensure sustainable wildlife population	Restoration of degraded forest ecosystem through reforestation/ enrichment plantation (2 ha/Chiwog)	All five Chiwogs	Long Term	DFO Thimphu	Gewog, DoFPS	5.000	Conservation Partners/ RGoB	2026- 2030
	Construct fire line around fire prone areas (Nu.20000/year/km)	Khasadrapchu Chiwog	Short Term	Chiwog	Gewog, DFO Thimphu	0.100	Conservation Partners/ RGoB	2026- 2030
	Awareness and education on forest fire (Nu. 20000/yr/chiwog targeting at least 20 participants per chiwog)	All five Chiwogs	Short Term	DFO Thimphu	Gewog, DoFPS	0.500	Conservation Partners/ RGoB	2026- 2030
	Protection of important wildlife habitat (Nu. 50000/yr to conduct 2 times long range patrolling in a year)	Siliphu, Tshaluna	Long Term	GFMU	DFO Thimphu, Gewog	0.250	Conservation Partners/ RGoB	2026- 2030
	Support/supply fire fighting equipment (water bag) to local communities. (0.15m/ Chiwog supplying at least 10 water bags per chiwog)	All five Chiwogs	Short Term	DFO Thimphu	DoFPS, Gewog	0.750	Conservation Partners/ RGoB	2026- 2030
Total budget (Ngultrum in million)						84.30		

6. Monitoring and Evaluation

Timely monitoring and evaluation of planned programs are crucial to ensure effective delivery of intended actions and achieve the outcomes. It basically ensures tracking of the planned interventions through timely monitoring and evaluation. A comprehensive Monitoring and Evaluation (M&E) plan as detailed in **Table No.5** is developed to enhance seamless implementation of the strategy. The action will include specific indicators to measure the performance of the strategy, providing a clear basis for assessing progress. Output indicators will primarily track the achievements of the actions identified in Section 4, ensuring accountability and fostering continuous improvement throughout the implementation process.

6.1 Monitoring

Monitoring is an ongoing assessment process aimed at providing stakeholders with timely and detailed updates on the progress or delays of activities, ensuring transparency and clarity regarding their implementation status. For the 5-year strategy plan, the DFO, Thimphu management team will conduct annual monitoring to evaluate progress, identify challenges and ensure planned actions are on track to achieve the intended outcomes.

6.2 Evaluation

The evaluation of the strategy plan will take place twice in the plan period to ensure its effectiveness and alignment with objectives. A midterm review will be conducted in the last quarter of the second year, followed by a final review in the last quarter of the fifth year. These evaluations will be carried out by a team comprising of internal members from DFO, Thimphu and relevant external representatives, including members from functional divisions under DoFPS, ensuring a comprehensive and unbiased assessment of the plan's implementation and outcomes.

Table 5: Monitoring and Evaluation Framework

Outcome	Actions/Activities	Action Indicator	Baseline	Unit	Yearly Target				
					I (2026)	II (2027)	III (2028)	IV (2029)	V (2030)
People: able and willing to live alongside wildlife	Conduct awareness program on HWC mitigation and response mechanism including legal framework: FNCA, FNCRR and Guidelines (Nu. 2000/yr/chiwog whereby at least 20 participants/chiwog are made aware on C2C approaches/framework	Number of local communities participated in HWC awareness program including legal framework and guidelines	0	NMB	100	100	100	100	100
Livelihood/ Assets: secured against presence of wildlife	Construct chain link fencing (3km per chiwog where 0.8m for chainlink@Nu.4000/15m bundle; 1500 MS angle post @350 per post and remaining 0.175 for cement, sand and stone	Length of chainlink fencing constructed	6	km	6	3	3	3	
	Clearing of bushes surrounding the agriculture field (1km/yr)	Length/corridor of bush clearing	0	km	1	1	1	1	1
	Supply of sound repellent system (4 nos/set)	Number of units supported	0	NMB	0	0	4	0	0
	Installation of sound repellent system	Number of units installed	0	NMB	0	0	4	0	0
	Rearing of trained Guard Animal (dog)	Number of trained guard dogs	0	NMB	0	0	5	0	0
	Enhancement of live fencing/ natural barrier (Cactus and Rosa species for 1km)	Length of live fencing created	0	km	0.200	0.200	0.200	0.200	0.200
	Support light-based repellent system (4 units)	Number of units supported	0	NMB	0	0	0	4	0
	Improvement/enhancement of solar fencing with higher voltage energizers and durable structure	Number of solar fencing maintained	0	NMB	0	2	0	0	0
	Facilitate to establish Payment for Environmental Services (PES)	Number of PES initiated	0	NMB	0	0	0	0	1

Wildlife: thrives alongside people	Create water holes/revive natural ponds	Number of water holes revived	0	NMB	0	1	1	1	1
	Encourage to construct open irrigation channel or keep provision for wildlife drinking area along the climate-smart irrigation channels	Number of areas created	0	NMB	1	1	1	1	1
Habitat: sufficient to ensure sustainable wildlife population	Restoration of degraded forest ecosystem through reforestation/ enrichment plantation (2ha/Chiwog)	Area of enrichment plantation created	0	Hectare	2	2	2	2	2
	Construct fire line around fire prone areas (Nu.20000/year/ km)	Length of fire line created/ constructed/ maintained	0	km	1	1	1	1	1
	Awareness and education on forest fire (Nu. 20000/yr/ chiwog targeting at least 20 participants per chiwog)	Number of local communities participated in forest fire awareness	100	NMB	100	100	100	100	100
	Protection of important wildlife habitat (Nu. 50000/yr to conduct 2 times long range patrolling in a year)	Number of long range patrolling conducted	4	NMB	2	2	2	2	2
	Support/supply fire fighting equipment (water bag) to local communities. (0.15m/Chiwog supplying at least 10 water bags per chiwog)	Number of water bags supported	0	NMB	10	10	10	10	10

7. Conclusion

The Conflict-to-Co-existence (C2C) Strategy for Mewang Gewog constitutes a comprehensive and community-oriented framework designed to mitigate human-wildlife conflict (HWC) and promote harmonious co-existence between local communities and wildlife. Formulated through extensive stakeholder consultations, participatory HWC assessments and co-design consultation workshops, the strategy is structured around four strategic outcomes; People, Livelihoods/Assets, Wildlife, and Habitat, integrating six interrelated elements: Policy, Prevention, Response, Understanding the Conflicts, Mitigation, and Monitoring.

The strategy prioritizes safeguarding of livelihood and conservation of habitats to sustain wildlife populations and eventually culminate towards long-term goal of co-existence through capacity development, environmental stewardship and active community participation. By embedding an integrated and participatory approaches, the strategy aims to ensure that interventions are both contextually relevant and operationally achievable.

However, successful implementation will require concerted collaboration among local communities, government agencies, conservation partners and allied stakeholders, supported by adaptive management practices, rigorous monitoring mechanisms and sustained public engagement. With full commitment and ownership of Mewang Gewog, the C2C Strategy is expected to enhance ecological resilience, secure socio-economic stability and establish the gewog as an example of sustainable human-wildlife co-existence. Through enduring partnership, innovation and collective efforts, Mewang Gewog is expected to realize a balanced and mutually beneficial future for both human and wildlife populations.

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