

Human-Wildlife Coexistence in Nepal: Evolution of Relief Policies and Practices

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Human-wildlife conflict is increasing at an alarming rate despite government efforts and local community support, posing a threat to both humans and wildlife species. Relief support for people affected by wildlife induced damage is a widely applied post-conflict mitigation approach. We reviewed relief provisions from government (policies, act, regulation, directives and five-year plan) and non-government organisations, including CBD, FAO, IUCN, and relevant peer-reviewed articles. The relief program was initiated through the Buffer Zone program at periphery of Chitwan National Park. The Buffer Zone Management Committee of Chitwan formed under 'Buffer Zone Management Regulations, 1996, piloted a relief distribution practice in 1998 for wildlife damage using the 50% of the park's revenue provided to buffer zone as per the regulations. This relief provision was designed as a compassionate measure to secure local community support for protected area management, offering cash support for losses of livestock, crops or in cases of human casualties. The Government established a legal mechanism of relief support payments to victims for wildlife caused damage through the Directive related to distribution of relief for wildlife caused damage 2009 under the provision of the National Park and Wildlife Conservation Act, 1973, and its Regulations 1975. By incorporating one and half decades of lessons learnt, the most recent Directive was formulated in 2023 to provide relief support for damage caused by 16 wildlife species. Such a provision reduces economic risks to surrounding communities and is expected to minimize retaliatory killings of wildlife. The high number of human-wildlife conflict cases demands substantial financial resources, raising concerns about the long-term sustainability of such relief programs. This has prompted the exploration of alternative measures to minimize human-wildlife conflict, including endowment funds and crop and livestock insurance.

Keywords: Wildlife damage; Human-wildlife conflict; Relief directives; Relief support.

The Convention on Biological Diversity's 2050 Vision of "Living in Harmony with Nature" is only achievable if human-wildlife conflict (HWC) is reduced (CBD, 2024). This calls for a high priority for reducing HWC in natural resource management, protected area management and other aspects of conservation (CBD, 2024). The HWC is negative interactions between humans and wildlife and has been a challenge globally for many centuries (FAO, 2009). Conflict occurs when wildlife impacts negatively on humans, or when human's activity

negatively impacts wildlife (IUCN, 2005; 2023). Attacks on humans, livestock depredation, crop and stored grain raid and property damage are the major losses caused by wildlife (DNPWC, 2024). Increasing human population and unplanned migration are the major drivers for escalating human-wildlife conflict cases. The expansion of human land use at the cost of natural ecosystems has caused wildlife habitat to become increasingly isolated, fragmented and degraded (Acharya et al., 2017). In the modern era, human-wildlife conflict severity and complications

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have increased significantly, causing decrease in wildlife populations and reduction in tolerance of society towards wildlife (Madden, 2004; Sharma et al., 2020). Consequently, retaliatory killings of wildlife and growing hostility toward conservation initiatives are evident (Kawanishi & Seidensticker, 2010, Bhattarai & Fischer, 2014; Inskip et al., 2016). Wildlife attacks on humans have emerged as one of the major obstacles to fostering harmonious relationships with local communities and engaging them in conservation efforts (IUCN, 2023).

The main cause of human–wildlife conflict is the shared use of the same landscapes and resources by wildlife and local communities (Silwal et al., 2017; 2022; 2024; Baral et al., 2021). Several studies report that poor communities are relatively more dependent on forest resources, which increases the complexity of protected area management for both human and wildlife needs (Budhathoki, 2004, Karki et al., 2022). The survival of the major wildlife species depends upon increasing the tolerance level of the local communities, which is determined by the effectiveness of HWC management and the extent to which communities perceive ownership (Gurung et al., 2008; Lamichhane et al., 2019). Managing HWC is a challenging task and one of the widely used methods is providing relief payments to victims for the losses caused by wildlife (Lewis et al., 2011).

Different countries have their own practices for managing post HWC situations (Ogada et al., 2003, FAO, 2009; Bose et al. 2011; Johnson et al., 2018; Sharma et al., 2020). The Government of Nepal has a range of measures, including mitigative measures and post conflict remedial measures for managing HWC. Different types of conservation and awareness raising activities have been conducted for local communities near forest areas. Mitigation includes construction of physical barriers to protect human settlements, such as concrete fencing, gabion wire fencing with a concrete structure at the base, solar fencing, vegetative fencing, and construction of predator proof enclosure (Lamichhane et al., 2019). Such activities have been conducted by the Central Government, Province Governments, Local Bodies and Conservation Partners. The National Trust for Nature Conservation (NTNC), World Wildlife Fund for Nature (WWF) Nepal, and Zoological Society of London (ZSL) Nepal have been working jointly with Protected Area and Divisional Forest Office officials (DNPWC, 2024).

The Government of Nepal is a pioneer State in establishing relief support for wildlife-induced

damage. The “Relief Support Directives for Wildlife Damage 2009” were implemented after receiving a positive response from a pilot relief program in Chitwan National Park and its Buffer Zone (CNP, 2015; Silwal et al., 2017; Lamichhane et al., 2018). The provisions in the relief support Directives are legally supported by the National Park and Wildlife Conservation Act 1973, and National Park and Wildlife Conservation Regulations 2074. The provisions were effective in minimizing human wildlife conflict through two ways: minimizing the risk to livestock owners; and reducing retaliatory killing of wildlife. Based on feedback and lessons learnt from implementation of successive directives, a new Directive was formulated in 2023 including 16 major wildlife species for which relief support could be provided (MOFE, 2024c). However, the rising number of HWC cases has demanded more budget and other resources, raising questions about sustainability of relief programs and seeking need for other sustainable options such as livestock insurance and crop insurance (Baral et al., 2021). The aim of this study is to review HWC incidents, adopted control practices, and existing policy for relief support for wildlife-induced damage in Nepal and similar practices around the world.

Materials and Methods

This study adopted a review of two different streams of literature to identify and analyze provisions of payment for compensating losses caused by wildlife. The first group included policies, acts, regulations, procedures and other documents from the Government of Nepal and inter-governmental bodies; and second group included peer-reviewed scientific papers in the field of HWC specially focusing on relief and compensation. The relevant official documents from the Government of Nepal were collected from Nepal Law Commission, National Planning Commission of Nepal, Ministry of Law, Justice and Parliamentary Affairs, Ministry of Forests and Environment, and the Department of National Park and Wildlife Conservation. Some related documents were also collected from FAO, CBD and IUCN. Major documents reviewed included the National Forest Policy 2019 (MOFE, 2019), National Parks and Wildlife Conservation Act 1973 (MOFE, 2024a), National Parks and Wildlife Conservation Regulation 1974 (MOFE, 2024b), Relief Support Directives for Wildlife Damage (2009, 2013 and 2023) (MOFE, 2009; 2017; 2023), Five-Year Periodic Plan (15th and 16th) (NPC, 2019; 2024), Protected Area Management Strategy 2022-2032 (DNPWC,

2022), Tiger Conservation Action Plan 2023-2032 (DNPWC, 2023), publication from DNPWC and CNP. We also compiled publications of NTNC and WWF Nepal.

A systematic literature search was conducted in Google Scholar for peer reviewed articles published before March 15, 2025, using search terms: "Wildlife damage", "Human wildlife conflict", "Relief support", "Relief directives", and "Relief support distribution in Nepal". We compiled a total 210 records (journal articles, book chapters, and conference proceedings). A three-stage screening methodology was used. In the first stage, titles and abstracts were assessed by the first author to exclude studies not related to HWC, and within HWC not focused on relief and compensation for wildlife damage. In the second stage, we intensively reviewed the full text of the papers prioritizing HWC and relief support relevant to this study (policy, practices and outcome), and finally 25 peer reviewed scientific papers were selected for this study.

Moreover, 11 Nepal government documents (all forestry related Policies, Acts, Regulations, Directives, Periodic Plan, Action Plan, and related documents of Nepal), four documents of intergovernmental bodies CBD, IUCN and FAO, four annual reports and publications on specific issues were also selected. Altogether a total of 45 documents (25 peer-review and 20 policy documents - listed in references) were reviewed.

Results

Legal provision of relief support for wildlife damage in Nepal

The Constitution of Nepal 2015 made a provision of 'living in the safe environment' as fundamental right of all the citizens and assigned a minimum percentage of forest area for the safety of citizens from environmental damages (Nepal Law Commission, 2024). The National Forest Policy 2019 highlighted conservation and management of protected areas and forest corridors at landscape level to minimize HWC. Furthermore, it mentioned the involvement of local communities in the management of National Parks, Reserves, Conservation Areas and Buffer Zones through preparation of management plans for protected areas (MOFE, 2019). The National Parks and Wildlife Conservation Act 1973 made a provision for providing relief following wildlife attack on humans, cattle depredation from wildlife and damage to properties outside National Parks and Wildlife Reserves. This included the major types of loss and damage caused by wildlife, human injuries, loss of

livestock, losses in agriculture and cash crops and damage to houses and cattle sheds (MOFE, 2024c). The National Parks and Wildlife Conservation Regulation 1974 elaborated the relief process in short. Some major highlights are: wildlife victims must register complaints in Protected Area Offices for incidents within Protected Areas (including Buffer Zones) and in Divisional Forest Offices for incidents outside Protected Areas (MOFE, 2024b). There is a special provision for relief in the core areas of Protected Area for Protected Area's staff, Labor & Nature Guides with formal permission, but relief is not applicable to tourist visitors (both Nepali and citizens of other countries).

For the verification of such submitted applications, a relief recommendation committee is assigned including the Office Chief of the relevant Protected Areas Office or Divisional Forest Office as a coordinator, and concerned buffer zone user group chairman/community forest user group chairman as a member, representatives from local bodies as member, and representative from the Agriculture or Livestock Office as an expert member. The relevant office provides a cash relief amount to the victim based on the recommendation from the committee. This is paid directly to the victim's bank account or in case of victim death, the bank account of his/her close family member.

Based on the provisions of the National Park and Wildlife Conservation Act 1973, the Government of Nepal has formulated Relief Support Directives for Wildlife Damage in 2009. After learning lessons from implementing the Directives, the government revises Directives over time. The first two directives (Relief Support Directives for Wildlife Damage 2009 and Relief Support Directives for Wildlife Damage 2013) have been replaced by the Relief Distribution Directives for Wildlife Damage 2023 and has been effective since July 2023. Relief payment for wildlife damage is a recently introduced mechanism to address HWC issue.

The Fifteenth Five-Year Plan of Nepal (2019/20-2023/24) highlighted HWC as a challenge of conservation and recommended minimizing the issue through awareness raising programs, proper compensation, and the development of physical infrastructure as needed (NPC, 2019). The Sixteenth Five-Year Plan (2024/25-2029/30) has not mentioned HWC directly but it has addressed wildlife farming for economic wellbeing and prosperity of the country (NPC, 2024). The Protected Area Management Strategy of Nepal (2022-2032) has highlighted HWC as an important issue and it recommends human

wildlife coexistence for the long-term survival of wildlife species and for human prosperity (DNPWC, 2022). This strategy also highlights the contribution of protected areas to meeting the sustainable development goals. The Tiger Conservation Action Plan of Nepal 2023-2032 emphasizes reduction of human tiger conflict and enhancement of economic opportunities for local communities as its objectives (DNPWC, 2023).

Special decision of National Tiger Conservation Authority Nepal for management of human tiger conflict

National Tiger Conservation Authority, Nepal decided to establish a tiger conservation special program name as a Prime Minister's Tiger Conservation and Livelihood Program, to reduce human tiger conflict on 2022 (DNPWC, 2023). The decision elaborated on the construction of physical fences between forests and settlements, establishment of rescue centers to manage problematic tigers, capacity building of staff involved in human tiger conflict mitigation, management of resources to manage human tiger conflict, and income generation activities for the surrounding communities. This initiative has a total annual budget of 100 million Nepali rupees (*Equivalent to 724,585.174 US dollar @ one dollar equals 138.01 Nepalese rupees, 21 March 2025 rate*) provided by Government and Other Agencies, including Conservation Partners. Although yet to be fully operational, selected activities such as capacity building and livelihood programs were conducted by regular government budget and from the support of conservation partners, NTNC, WWF Nepal; and ZSL Nepal (DNPWC, 2024).

Evolution of Relief Support Directives for wildlife damage

Government of Nepal issued Relief Support Directive for Wildlife Damage in 2009 including seven major

conflict causing wildlife species i.e. Wild Elephant (*Elephas maximus*), One Horned Rhino (*Rhinoceros unicornis*), Tiger (*Panthera tigris*), Leopard (*Panthera pardus*), Snow Leopard (*Panthera uncia*), Wild Buffalo (*Bubalus arnee*) and Bear (*Ursus arctos*, *Ursus thibetanus*, *Melursus ursinus*)) based on recorded data. This directive covered human casualties, livestock depredation, property damage and agricultural crop damage caused by these species for relief support.

This Directive was replaced by new Directives in 2013 adding Wild Boar (*Sus scrofa*) in the damaging species list. Later, this directive was amended three times by adding another six wildlife species: Clouded Leopard (*Neofelis nebulosa*), Wolf (*Canis lupus* or *Canis himalayensis*), Wild Dog (*Cuon alpinus*), Mugger Crocodile (*Crocodylus palustris*), Gaur Bison (*Bos gaurus*) and Python (*Python molurus* or *Python bivittatus*) making a total list of 14 wildlife species. Again, from the lessons learnt by this Directive, the Government implemented new Directive, effective from 2023 and revoked previous Directive (2013). The latest Directive covers 16 wildlife species including Blue Bull (*Boselaphus tragocamelus*) and Monkey as one species (but this includes all types of Monkeys found in Nepal: Rhesus Macaque (*Macaca mulatta*), Assam Macaque (*Macaca assamensis*), Himalayan Gray Langur (*Semnopithecus schistaceus*), Northern Plains Grey Langur (*Semnopithecus entellus*)) in previous 14 given wildlife species). It delegates authority annual budget to Divisional Forest Offices (84), and Protected Area Offices (20) to provide relief support.

Nature and impacts of HWC

A database maintained at the Department of National Parks and Wildlife Conservation (DNPWC) shows a rising number of HWC cases and increasing amount required for relief payment (Table 1). However, the annual budget allocated by the government for the

Table 1: Total relief amount in Nepalese Rupees (NRs.) with converted United State Dollar (USD) provided by the Government (through both Protected Area Offices and Divisional Forest Offices) for damage caused by wildlife in five fiscal years, based on March 21, 2025, exchange rate is NRs. 138.01 equal to 1 USD

Type of Damage	FY* 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
Simple Injury	318,146.00	929,176.00	2,714,005.00	1,207,338.00	934,249.00
Serious Injury	11,895,851.90	13,357,957.00	9,511,346.00	11,288,938.45	12,061,766.45
Human Death	29,000,000.00	34,600,000.00	40,000,000.00	56,287,314.00	39,712,686.00
Damage to Livestock	16,626,314.00	22,237,307.00	45,764,212.00	57,678,378.00	50,170,752.00
Damage to Stored Grain	5,433,101.00	2,348,180.00	4,022,984.00	1,563,712.00	2,132,275.00
Damage to House	5,237,140.00	5,431,775.00	4,354,222.00	2,794,930.00	4,164,600.00
Damage to Crops	20,574,146.00	28,231,525.00	34,626,787.00	41,981,850.00	26,184,599.00
Grand Total (in NRs.)	89,084,698.90	107,135,919.50	140,993,556.00	172,802,460.45	135,360,926.98
Grand total (in USD)	645,494.52	776,290.98	1,021,618.40	1,252,101.01	980,805.20

*FY includes July 17 of the previous year to July 16 of next year (Source: DNPWC database, 2024)

relief payment has been decreasing over the years, thereby creating a financial gap between demand and availability of relief funds. It also raises the concern for sustainability of such provisions and indicates the requirement of an alternative approach.

Similarly, HWC cases are also increasing in Nepal (Table 2). The data shows that Leopard, Elephant and Wild Boar are the three major conflict-causing wildlife species, probably due to their wide distribution across Nepal, from lowland Terai to High Mountains. Elephant distribution is confined to lowland areas, but it is a migratory species requiring a large landscape, most of which falls outside protected areas (Ram et al., 2021).

Evolution and implementation of Relief Directives for wildlife damage in Nepal

Relief Support Directive for Wildlife- Damage is the cornerstone of Nepal's HWC mitigation strategy. This provision was initiated after the success of internal relief provisions in Chitwan National Park managed by the Buffer Zone Management Committee. Formal Government Relief Support provision was initiated in 2009 and refined through directives of 2013 and 2023. This Directive reflects an adaptive policy response to escalating conflicts and provide immediate victim support with long-term conservation goals. Table 3 shows the detailed practices of the existing relief distribution system in Nepal.

Cases of human death and injuries from the above mentioned 16 wildlife species are covered in Relief Distribution Directive for Wildlife Damage 2023. In general, cattle depredation cases are included to cover major carnivore species and agricultural crop damage

cases are included for herbivore species to cover large herbivore species. Property damage and loss of stored grain are included only for elephants. Major conflicts caused by wildlife species from lowland to highland are included in the Directive.

The provisions of the three Directives show that the scope of relief support for wildlife damage has been increasing over time through the addition of major conflict causing wildlife species and also increasing the relief amount in new amended Directives 2023 (Appendix 1).

Discussion

Pioneering relief support practices in Chitwan National Park, Nepal

Chitwan National Park (CNP), a UNESCO World Heritage Site, pioneered relief payment in 1998 through its Buffer Zone Management Program, predating national Directives (CNP, 2015; Lamichhane, 2019). Buffer zones around protected areas host integrated conservation and development initiatives managed by Buffer Zone User Groups, Buffer Zone User Committees, and a Buffer Zone Management Committee. The Buffer Zone Management Committee, the apex body of the buffer zone, initiated a partial relief support provision for wildlife damage cases to smooth relations between the park and surrounding local communities (Lamichhane et al. 2019). After the fourth amendment of the National Park and Wildlife Conservation Act 1973 in 1992, the Government of Nepal has been providing 30-50 % of the protected area revenue (park income) to the

Table 2: Total HWC cases for the species listed in Relief Directives for Wildlife Damage from 2018/19 to 2022/23

Wildlife	FY* 2018/19	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23
1. Elephant	2349	3257	1503	2058	2394
2. Rhino	452	129	333	325	335
3. Tiger	150	188	331	517	434
4. Bear	130	82	154	59	42
5. Leopard	1104	1865	1639	3963	4041
6. Snow Leopard	52	63	551	1193	418
7. Clouded Leopard	59	89	0	0	0
8. Wolf	162	16	0	423	393
9. Wild Dog	1	9	100	0	0
10. Wild Boar	1454	2409	3788	3944	2058
11. Wild Buffalo	324	48	54	182s	296
12. Magar Crocodile	13	7	1	5	12
13. Python	0	1	0	1	1
14. Gaur	1	0	1	2	2
Grand Total	6251	8163	8455	12672	10426

*FY includes July 17 of the previous year to July 16 of next year (Source: DNPWC database, 2024)

Table 3: Provision of wildlife damage relief distribution based on Relief Distribution Directives for Wildlife Damage 2023

SN	Type of Wildlife	Type of damage					
		Damage to Human Minor injuries	Damage to Human Serious injuries	Human death	Damage to livestock	Damage to stored grain	House and cattle shed damage
1	Wild elephant	✓	✓	✓	✗	✓	✓
2	One horned rhino	✓	✓	✓	✗	✗	✗
3	Tiger	✓	✓	✓	✓	✗	✗
4	Bear	✓	✓	✓	✓	✗	✗
5	Leopard	✓	✓	✓	✓	✗	✗
6	Snow leopard	✓	✓	✓	✓	✗	✓
7	Clouded leopard	✓	✓	✓	✓	✗	✓
8	Wolf	✓	✓	✓	✓	✗	✓
9	Wild dog	✓	✓	✓	✓	✗	✓
10	Wild boar	✓	✓	✓	✗	✗	✗
11	Wild buffalo	✓	✓	✓	✗	✓	✗
12	Mugger crocodile	✓	✓	✓	✓	✗	✓
13	Gaur Bison	✓	✓	✓	✗	✗	✗
14	Python	✓	✓	✓	✓	✗	✓
15	Blue bull	✓	✓	✓	✗	✗	✗
16	Monkey	✓	✓	✓	✗	✗	✗

Note: ✓ indicates there is a provision of relief support where as ✗ indicates there is no provision of relief support
(Source: Relief Distribution Directives for Wildlife Damage 2023. MOFE Nepal, 2024)

concerned local communities through Buffer Zone Development Programs for conservation, small scale community development, income generation and skill development, as well as HWC mitigation, relief and conservation education activities (DNPWC, 2024). This plough back revenue is significant for conducting integrated conservation and development activities in developing countries like Nepal where conservation programs get less priority in comparison to development (Budhathoki, 2004). From this budget, the Buffer Zone Management Committee of Chitwan National Park allocated a nominal amount to relief support for human death and injuries, cattle depredation and crop loss caused by wildlife. The Buffer Zone Management Committee provided up to 10,000 NRS (USD 72.45) equivalent for the treatment of injured persons, up to NRS 25,000 (USD 181.14) for close relatives who lost a family member from wildlife attack. Likewise, there was a provision of providing from 25 to 50 % of the total lost value of domestic cattle based on evaluation by members of communities. This practice was a milestone for Nepalese conservation history. After implementing this provision, there was significant reduction in retaliatory killing of wildlife like Tigers, Leopards and Rhino; and local communities gradually responded positively to wildlife conservation programs. Furthermore, the Buffer Zone Development Program was very popular when there were no local bodies and other government institutions at the grass root level because of decades of the Maoist movement in Nepal (Baral & Heinen, 2005).

Community-based innovations in Kanchenjunga Conservation Area, Nepal

Similarly, in Kanchenjunga Conservation Area (a community managed conservation area in the far northeast of Nepal), the Department of National Parks and Wildlife Conservation and WWF Nepal conducted different integrated conservation and development program. Under this program a community-based Snow Leopard Conservation Committee (SLCC) was formed in 2005 (WWF Nepal, 2018). The primary task of the SLCC was to monitor snow leopards through direct observations and indirect measures. The SLCC also initiated community-based relief provision for loss of cattle due to snow leopard attack. It was effective for both conservationists and local communities. Despite its past success, it is not functioning well because of lack of continuous follow-up support technically and financially, demonstrating that regular follow-up and support from government or conservation partners is

necessary for smooth functioning of such programs. But this example provided some lessons about importance of relief support for the economically poor livestock dependent communities.

Innovative funding mechanisms

The Government of Nepal in coordination with conservation partners established a special human wildlife conflict management fund for providing immediate relief support of NRS 50,000 (USD 362.29) to a victim's family in cases of loss of human. This fund has been run by NTNC on the recommendations of Protected Area Offices and Divisional Forest Offices (NTNC, 2024). In the beginning, the Hariyo Ban program of USAID provided NRS 4,00,00,000 (USD 2,89,834.67) and later ZSL Nepal added NRS 45,00,000 (USD 32,606.33). Annually, NTNC has been providing a nominal percentage of tourist income from the Annapurna Conservation Area into this fund. In addition to relief support, this fund has been used for mobilization of rapid response teams during human wildlife conflict mitigation operations throughout Nepal (NTNC, 2024).

Government and collaborative efforts

HWC is a sensitive issue and directly linked with human welfare & wellbeing. It is considered seriously by all three levels of Government (Federal, Province and Local Bodies) and relevant agencies have been working in close coordination. For the control and management of problematic wildlife, NTNC has been working with Protected Area Offices and Divisional Forest Offices (DNPWC, 2024; NTNC, 2024). Different physical barriers such as concrete fencing, gabion wire fencing with concrete in the base, electric fencing, predator proof corrals, income generation activities, awareness and behaviour campaign programs and other similar programs have been conducted in coordination with different agencies (DNPWC, 2024).

Comparative analysis and implications of Directives

Relief Support Directives for Wildlife Damage initiated in Nepal in 2009 drew upon the lessons learnt from the community-based relief support program of Chitwan National Park and its Buffer Zone (Lamichhane et al., 2018). There were also good practices of relief support in India's Corbett Tiger Reserve (Bose et al., 2011), local relief funds, a community insurance model in Namibia (FAO, 2009) and many other countries. This Directive of 2009 covered seven wildlife species, and a nominal cash

amount provided for relief support. From the lessons learnt, the Government of Nepal implemented another Directive in 2013 (revoking previous Directive 2009); and again, formulated a new Directive in 2023 after revoking the previous Directive 2013. Main features of these three Directives are given below:

Relief Support Directive for wildlife damage 2009:

The Government of Nepal introduced Relief Support Directives for damages in 2009 from a decision of the Ministry of Forests and Environment on 5 July 2009. That was the first formal initiative to manage human-wildlife conflict through relief provision at the national scale. This directive targeted seven conflict-prone species; Wild Elephant, One-horned Rhinoceros, Tiger, Leopard, Snow Leopard, Wild Water Buffalo, and Bear. It included human casualties (death and injury), livestock loss, stored grain loss, house/cattle shed damage and agricultural crop loss as major headings of wildlife damage. It had a provision for relief distribution from Protected Area Offices and District Forest Offices based on their respective jurisdiction. The victim of wildlife damage had to submit an application to the relevant Office within 35 days of the incident and the relevant office provided relief support (MOFE, 2009). The budget was channeled through the Regional Forestry Directorate (no longer operational in the new federal structure). The Directorate Office monitored relief activities, such as whether victims received the relief amount in time or not and the process and procedures taken to provide relief; and it suggested further improvements to the relief process to the Ministry of Forest and Environment. This multi-stakeholder oversight aimed to ensure transparency, though initial disbursement was cash based, limiting traceability (Dhungana et al., 2016).

Relief Support Directives for wildlife damage 2013:

After learning from around four years of operation, the Government of Nepal, via a cabinet decision, promulgated another Directive for compensation payments on damages from wildlife in 2013 with significant changes in its coverage including the number of species covered and the amount of relief support. It covered eight wildlife species including the seven of the previous guidelines and wild boar. Furthermore, it provided special provisions for settlements in mountain protected areas while providing relief (MOFE, 2017).

This Directive was amended three times and was effective until new Directives were promulgated in 2023.

The following is the summary of each amendment.

- In the first amendment (14th May 2015) of this guideline, the government added Clouded Leopard, Wolf and Wild Dog to minimize the conflict with large carnivores. That amendment also included banana plantations as a cash crop within an agricultural crop heading. It increased the relief amount from NRs. 3,00,000 (Three lakhs Nepalese rupees) to NRs. 5,00,000 (Five lakhs Nepalese rupees) in cases of human death (please see the Table 4 for USD). It added the provision to pay relief money by bank cheque to make the relief distribution process more transparent.
- In the second amendment (2 June 2017) of this guideline, the government added Mugger Crocodile, Gaur Bison and Python in the relief list.
- In the third amendment (19 November 2018) the relief amount for human injuries and death was increased significantly. For human death, the relief amount for the victim's family is NRs. 20,000 (Twenty thousand Nepalese rupees) and for severe injury up to NRs. 2,00,000 (Two lakhs Nepalese rupees) (please see Table 4 for USD).

The relief budget was sent to the relevant Protected Area Office and District Forest Office through the Regional Forestry Directorate until the formation of Provincial structures. After November 2018 (third amendment), 20 Protected Area Offices were assigned to distribute relief for the surrounding districts on the recommendation of concerned Divisional Forest Offices. The budget was channeled through DNPWC to Protected Area Offices. This system worked for almost five years until 2023 July. Detailed features of each amendment are shown in Table 4.

Relief Distribution Directive for Wildlife Damage 2023:

The current Relief Distribution Directives for Wildlife Damage 2023 has been implemented since July 2023. This directive covers 16 wildlife species including blue bull and monkey (All monkey species found in Nepal) as well as the previously listed 14 wildlife species (Wild elephant, Rhinoceros, Tiger, Bear, Leopard, Snow Leopard, Clouded Leopard, Wolf, Wild Dog, Wild Boar, wild buffalo, mugger crocodile, gaur bison and python). It increases the scope of coverage in terms of budget and coverage areas. Major features of this Directive are as follows:

- Human injuries or deaths from wildlife entering settlements.

- Attacks on Government staff by zoo wildlife or rescued wildlife
- Injuries or deaths in national forests (excluding protected areas) by wildlife with valid entry justification
- Injuries or death of protected area staff, forest officials, or authorized nature guides (excluding tourists) from wildlife attack
- Livestock depredation outside protected areas, damage to poultry, fishponds, stored grains
- Agricultural crop damage in registered private land
- Property damage (Houses and cattle shed) by wildlife

To make the relief process transparent, there are provisions for proper documentation, such as incident photographs, witness statements, medical reports, veterinary and/or agricultural official recommendations, buffer zone or community forest user group recommendations with support letter from local government (ward office) (Appendix 2). Approved relief must be disbursed within 30 days via bank transfer, prohibiting cash payments to ensure traceability and transparency. Budgets are allocated in two channels first through Ministry of Forests and Environment to DNPWC, and from DNPWC to Protected Area Offices; and second through Ministry of Forests and Environment to Provincial Forest Ministry, and Province Forest Ministry to Divisional Forest Offices through Provincial Forest Directorates (Appendix 3). There is a system of trimonthly reporting to the Ministry of Forests and Environment from both channels to maintain accountability and transparency.

Institutionalization of local level relief funds

New Directive has a special provision to establish local community level small endowment funds for long term management of human wildlife conflict. Buffer zone management committees or conservation area management committees or community forest user groups can establish a relief fund in coordination with the relevant Protected Area Office or Divisional Forest Office. Relief fund mobilization activities directly link with human sympathy, so there is no debate or conflict to manage such funds. This provision has already been implemented in some Protected Area (DNPWC, 2024). This provision of new directive will further institutionalize such community level relief funds. Likewise, Directives make a provision for allocating at least five percent

of annual income into HWC mitigation purposes such as ambulance cost, hospital costs and funeral costs. In consultation with Protected Area Offices, conservation partners such as WWF Nepal, ZSL Nepal and NTNC have been provided some budget to establish and operate relief support program in some conflict prone buffer zone user committees. User committees have been mobilizing this relief support based on approve guidelines/procedures from Protected Area Office (DNPWC, 2024).

Conclusion

Relief payment for wildlife damage is a means to address post conflict between wildlife and humans to increase community tolerance towards protecting endangered species. Nepal's legal provisions of relief mechanism demonstrate a proactive and adaptive approach to manage HWC through the engagement of local community and innovative funding options. On the other hand, the increasing trend of HWC cases raises the issue of sustainability of conflict mitigation programs and budgets. The establishment of special funds from government, partners and other organizations for relief support and management of human wildlife conflict is complementing the efforts to resolve HWC. Proper field verification of conflict cases, and quick relief delivery practices also by adopting the digital technologies are necessary to make the relief distribution process transparent and accountable. The legal base and long-term funding support are crucial to minimize HWC. As relief provision is a new concept in the field of HWC management, continuous research on effectiveness of relief programs and piloting of insurance schemes are necessary to strengthen existing practices.

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Conflict of interest

The authors declare there is no conflict of interest.

Author contribution

B. K. Dhakal: Conceptualization, writing the original draft, final reviewing and editing. **S. Kandel:** Review and editing. **N. Subedi:** Supervision, review and editing. **B. Lamichhane:** Supervision, review and editing. **S. Baral:** Review and editing. **M. Bista:** Review and editing. **T. Silwal:** Supervision and final review.

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Appendix 1: Comparison among three different Directives implemented by the Government

Relief Support Directive for Wildlife Damage 2009																	
Relief Guidelines name	Relief types/items	Species included in the relief program (Maximum limit of relief amount in Nepalese rupee and United State Dollar*)															
		Elephant	Rhino	Tiger	Leopard	Snow Leopard	Bear	Wild buffalo	Wild bear	Clouded leopard	Wolf	Wild dog	Mugger crocodile	Gaur Bison	Python	Blue bull	Monkey
Human minor injuries		NRs. 5,000 (USD 36.22), Applicable to all above seven species)														Not included in relief directive	
Human serious injuries			NRs. 50,000 (USD 362.29), (Applicable to all above seven species)													Not included in relief directive	
Human death				NRs. 1,50,000 (USD 1086.87) (For the victim family)												Not included in relief directive	
Relief Support Directive for Wildlife Damage 2009	Adult buffalo/Ox/Improved variety of cattle loss				Not specified such category											Not included in relief directive	
	Normal cattle loss					NRs. 10,000 (USD 72.45)										Not included in relief directive	
	House/cattle shed damage						(Applicable to Tiger, Leopard, Snow leopard and Bear)									Not included in relief directive	
	Stored grain damage							NRs. 4,000 (USD 28.98)								Not included in relief directive	
	Agricultural crop and horticultural crop loss								(Applicable to Elephant)							Not included in relief directive	
									NRs. 5,000 (USD 36.22)							Not included in relief directive	
										(Applicable to Elephant)						Not included in relief directive	
										NRs. 5,000 (USD 36.22)						Not included in relief directive	
											(Applicable to Elephant, Rhino, Wild buffalo and Bear)						Not included in relief directive

Relief directives for wildlife damage 2013

Species included in the relief program (Maximum limit of relief amount in Nepalese rupee and United States Dollar*)																	
Relief Guidelines name	Relief types/items	Elephant	Rhino	Tiger	Leopard	Snow Leopard	Wild buffalo	Bear	Clouded leopard	Wolf	Wild dog	Mugger crocodile	Python	Gaur Bison	Blue bull	Monkey	Remarks
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
Human minor injuries																	Wild Boar is added for the first time and 8 Wildlife Species are included for relief support
																	(Applicable to all above 14 species)
																	NRs. 10,000 (USD 72.45)
																	NRs. 20,000 (USD 144.91) in second amendment
																	NRs. 2,00,000 (USD 1449.17)
																	(Applicable to all above 14 species)
																	NRs. 3,00,000 (USD 2173.75)
																	(For the victim's family) -(Applicable to all above 14 species)
																	NRs. 5,00,000 (USD 3622.92) in the second amendment
																	NRs. 10,00,000 (USD 7245.85) in the third amendment
																	NRs. 30,000 (USD 2173.7) in the second amendment
																	(Applicable to Tiger, Leopard, Snow leopard, Clouded leopard, Wolf, Wild dog, Mugger crocodile)
																	NRs. 10,000 (USD 72.45)
																	(Applicable to Tiger, Leopard, Snow leopard, Clouded leopard, Wolf, Wild dog, Mugger crocodile)
																	NRs. 10,000 (USD 72.45)
																	(Applicable to Elephant only)
																	NRs. 10,000 (USD 72.45)
																	(Applicable to Elephant only)
																	NRs. 10,000 (USD 72.45)
																	(Applicable to Elephant, Rhino, Wild boar and Wild buffalo)

Note: This Directive was amended 3 times (first amendment in 2015, second amendment in 2017 and third amendment in 2018) widening its scope in both the coverage of wildlife species and the amount of relief support.

Relief Distribution Directive for Wildlife Damage 2023

Species included in the relief program (Maximum limit of relief amount in Nepalese rupee and United States Dollar*)																		
Relief Guidelines name	Relief type/items	Elephant	Rhino	Tiger	Leopard	Snow Leopard	Wild buffalo	Bear	Wild boar	Clouded leopard	Wolf	Wild dog	Mugger crocodile	Python	Gaur Bison	Blue bull	Monkey	Remarks
Human minor injuries		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Human serious injuries																		
Human death																		
Adult buffalo/Ox/Improved cattle loss																		
Relief Distribution Directives for Wildlife Damage 2023	Normal cattle loss																	
	Stored grain damage																	
	House/cattle shed damage																	
	Agricultural crop																	
	Fishpond																	
	Poultry																	

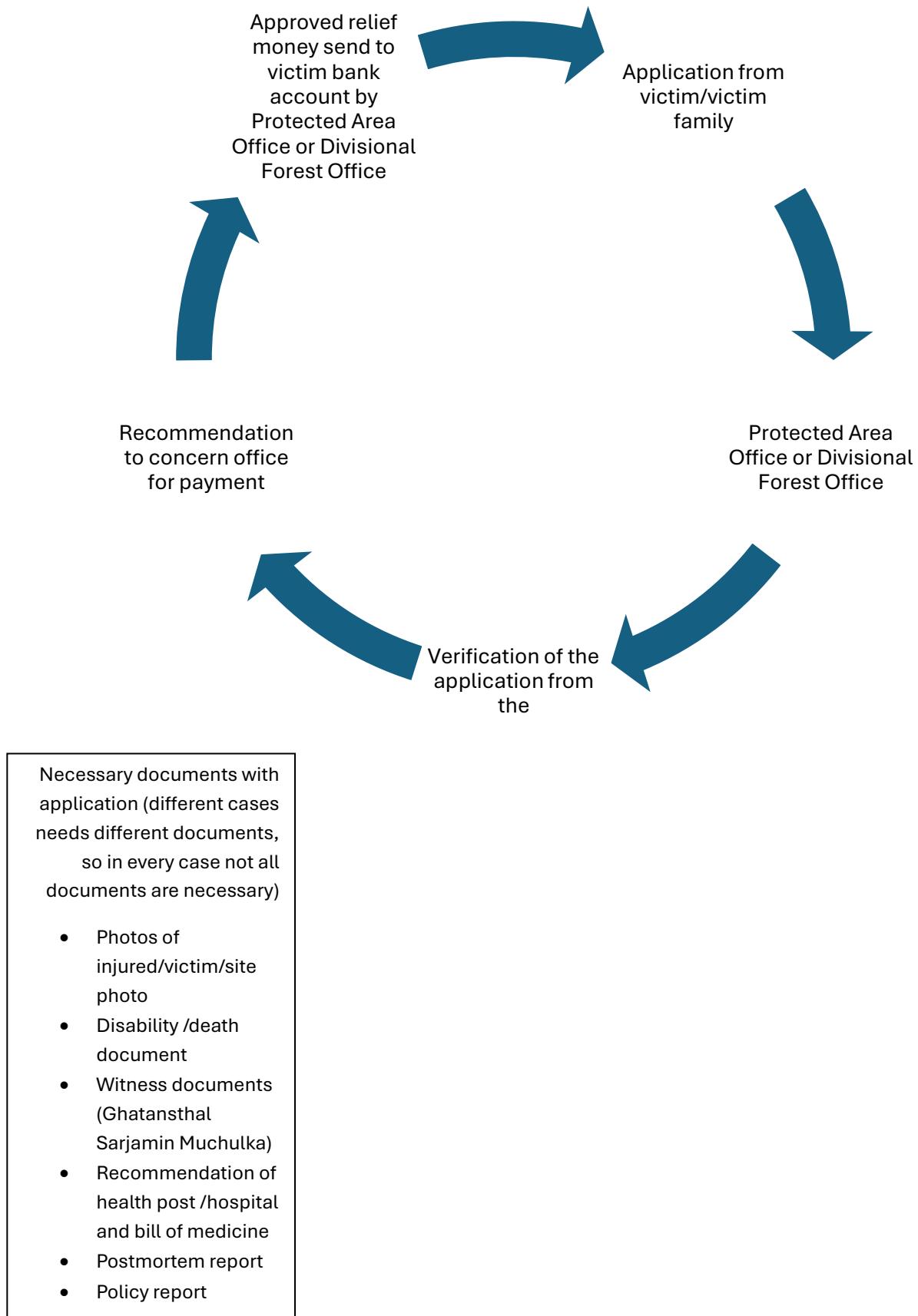
(Applicable to Leopard, Snow leopard, Clouded leopard, Wolf, Wild dog and Python)

Source: Relief Directives for wildlife damage 2023, Relief Directives for wildlife damage 2013 and Relief Directives for wildlife damage 2009

* 1 United State Dollar (USD)=138.01 Nepalese Rupees (NRS.) as per the rate of Nepal Rastra Bank on 21th March 2025

Note: If the owners of the cattle or crop are insured, then he or she must show the amount he/she received from the insurance, then only the remaining gap will be provided as relief support, so double claiming is illegal.

Appendix 2: Process of claiming wildlife damage relief from Protected Area Office and Divisional Forest Office



Appendix 3: Mechanism of relief fund flow from allocation to the recipient