



LEVERAGING INSURANCE-BASED METHODS AND ENHANCED COMPENSATION TO SUPPORT HUMAN– WILDLIFE COEXISTENCE: LEARNING FROM PRACTITIONERS

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to restore wildlife in the UK and around the world**

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Cover photo: African Savanna Elephant strolling by a watering hole in South Africa's savanna landscape.
Photo Credit: Taryn Elliott.



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Abbreviations and acronyms

AfESG	African Elephant Specialist Group (of IUCN)
BAAC	Bank of Agriculture and Agricultural Cooperatives
CNOG	National Confederation of Livestock Organizations (Mexico)
CONANP	Commission of Natural Protected Areas (Mexico)
CRB	Community Resource Boards
CVO	Community Verification Officer
DNP	Department of National Parks, Wildlife, and Plant Conservation (Thailand)
DNPW	Department of National Parks and Wildlife (Zambia)
DNPWC	Department of National Parks and Wildlife Conservation (Nepal)
FAG	Livestock Insurance Fund for Predators (Mexico)
GMA	Game Management Area
HEC	Human–Elephant Conflict
HWC	Human–Wildlife Conflict
HWCx	Human–Wildlife Coexistence
IIED	International Institute for Environment and Development
IUCN	International Union for the Conservation of Nature
KWS	Kenya Wildlife Service
LIFE	Livelihood Insurance for Elephants
NGO	Non-Governmental Organization
OECD	Organisation for Economic Co-operation and Development
PLI	Public Liability Insurance
UNDP	United Nation Development Programme
TGIA	Thai General Insurance Association (Thailand)
USSD	Unstructured Supplementary Service Data
WATALA	Friends For Nature and Environment (Indonesia)
WKNP	Way Kambas National Park (Indonesia)
WCS	Wildlife Conservation Society
WWF	World Wildlife Fund
YRPP	Yield Reduction Protection Plan
ZSL	Zoological Society of London

Summary

Human–wildlife conflict (HWC) is increasing due to rapid development, land conversion, climate change, and declining tolerance for damage caused by wildlife, with disproportionate effects on species of conservation concern and rural smallholder livelihoods in the global south. One approach to fostering human–wildlife coexistence (HWCx) in shared landscapes is to financially offset affected individuals for their losses. However, compensation schemes typically suffer from insufficient funds, slow verification and payout processes, fraudulent claims, and moral hazards (such as incentivizing encroachment into protected areas or encouraging people to leave crops or livestock unguarded). Insurance offers an alternative approach that can address many of these challenges but is still constrained by farmers’ ability and willingness to pay premiums or sufficient financing for NGOs, other donors, or governments to pay premiums on farmers’ behalf; lack of adequate regulatory frameworks; and effective verifiable risk management to secure buy-in from both governments and insurance companies. The case studies of past and current schemes reviewed in this report reveal the challenges that remain to be addressed before insurance can be regarded as a viable alternative to compensation schemes. However, some case studies show that lessons learnt from HWC insurance schemes – as well as digital technologies – can substantially improve compensation schemes. The long-term success of compensation or insurance mechanisms as tools to foster coexistence will depend on 1) recognising the limitations of both approaches, 2) opportunities to address many of the flaws of compensation schemes using ideas borrowed from insurance schemes such as conditionality as well as readily available digital technologies such as smartphone apps, and 3) innovative financing models, strong government support, investments in risk management, and adaptive governance frameworks that respond to ecological and social change.

Aim and approach

This report aims to support practitioners including governments, insurance companies, and NGOs to evaluate the feasibility and practical requirements of human–wildlife conflict insurance schemes and enhanced compensation schemes by providing key learnings from past and current initiatives. While compensation and relief schemes are well-established, insurance is a relatively new approach to mitigating the cost of HWC. The advantages and disadvantages of both approaches are described in the following section, “Overview of human–wildlife conflict and the role of insurance”.

It is important to note that smallholder farmers often cannot pay the full cost of premiums and asking some of society’s most disadvantaged people to pay premiums to insure themselves against damage caused by animals owned by the State raises ethical concerns. Some projects therefore use hybrid approaches, treating insurance as a public good by, for example, having third parties pay premiums on the farmers’ behalf. Others have evaluated insurance-based approaches to address some of the limitations of compensation (e.g. the challenges of validating claims of damage and perverse incentives to leave crops or livestock unguarded) through innovative use of payments conditional on protection measure and digital technologies such as smartphones and camera, GPS, and other apps. With these considerations in mind, we therefore classify the schemes included in this report as true insurance (in which the beneficiaries pay the premiums), subsidised insurance (where others pay some or all of the premiums on behalf of the beneficiaries), and enhanced compensation (which may borrow some of the techniques of insurance schemes but do not involve premiums; see Table 2).

Several organizations have identified key criteria for the success of HWC compensation and insurance schemes (Box 1) and provided guidelines for implementation (IIED 2023; UNDP 2026). We reviewed and refined these criteria to assess practical relevance across schemes being developed and implemented globally incorporating feedback from practitioners. Three interactive discussions with 29 experts from the academic, NGO, private, and public sectors focused on sharing experiences from current schemes, reviewed and updated criteria for success, and sharing learnings and challenges in implementation. Participants also contributed case studies of current, pilot, and previous HWC insurance and compensation initiatives to highlight challenges and how they were (or were not) addressed. This report synthesises these lessons from experts involved in the design or implementation of HWC insurance and enhanced compensation approaches across nine countries, providing practical insights for practitioners seeking to develop or strengthen effective, equitable, and sustainable mechanisms for mitigating the impacts of HWC.

Box 1. Previously published success criteria for insurance and compensation schemes^{1,2,3}

- **Quick and accurate verification of damage^{1,2,3}**
- **Prompt and fair payment^{1,2,3}**
- **Sufficient and sustainable funds^{1,2,3}**
- **Site specificity** where local contextual needs are considered in design and implementation^{1,2}
- **Connection to damage prevention** where a conditional link between payouts and risk management practices is embedded within the policy^{2,3}
- **Clear rules and guidelines^{1,2}**
- **Ability to measure success** where schemes have clear objectives and means to monitor progress^{1,2}
- **Stakeholder trust in the scheme^{1,2}**

Sources: ¹Morrison et al. 2009; ²Leslie et al. 2019; ³Wilson-Holt & Steele 2019. Full references are provided in References and further reading.

Overview of human–wildlife conflict and the role of insurance

Human–wildlife conflict is a global challenge that disproportionately affects rural smallholder and pastoral communities on all major populated continents (World Bank, 2023; Brackzkowski et al. 2023). The IUCN Human–Wildlife Conflict & Coexistence Specialist Group defines HWC as “*struggles that emerge when the presence or behaviour of wildlife poses actual or perceived, direct and recurring threats to human interests or needs, leading to disagreements between groups of people and negative impacts on people and/or wildlife*” (IUCN SSC HWCTF, 2020). These interactions can take the form of damage to agriculture or property, predation of livestock or game and human injury or death and tend to involve species of conservation concern. HWC is increasingly recognized as exacerbated by – or a result of – underlying social tensions, especially where rural development policies clash with conservation goals. This results not only in conflict between people and wildlife, but between government agencies, conservation organizations, private sector companies, and local communities whose interests, values and needs may be in opposition.

The global cost of damage from HWC is substantial; in Kenya, the government received claims related to HWC up to US\$4.2 million in the 2021–2022 financial year. Likewise, the Government of Nepal disbursed over US\$1.16 million in 2023–2024 to the families of HWC victims (DNPWC 2025). From human–elephant conflict alone, India experiences an estimated one million hectares of crops lost, 10,000–15,000 damaged properties, and approximately 400 human deaths, and 100 elephant deaths annually (Gulati et al., 2021). In Malaysia, human–monkey conflict incurred about US\$1.6 million worth of economic losses to fresh produce and properties between 2020 and 2025 (House of Representatives, Malaysia, 2026). HWC also has indirect costs, including effects on mental and physical health as a result of increased stress, exposure to diseases and other risks during night guarding, reduced food security, and opportunity costs (e.g. people foregoing opportunities to work elsewhere so that they can guard their crops or livestock) (Adler, Gore, and Wilkinson 2026; Barua, Bhagwat, and Jadhav 2013; Ogra 2008).

Rapid development, climate change, and shifting land use patterns, as well as declining tolerance of the damage done by wildlife, are increasing HWC globally, especially in low-income countries with limited resources for addressing this challenge (Gayo 2025; Global Wildlife Program, 2023; Abrahms et al. 2023; Brackzkowski et al. 2023). In areas where HWC has reached critical levels, attitudes towards conservation are likely to have significantly eroded and urgent pressure to address the situation results in rushed interventions that can be harmful to conservation. For example, in Sri Lanka, the government is providing guns for rural households to protect themselves from elephants and other wildlife, and the number of elephants killed by people now exceeds one elephant per day (Department of Wildlife Conservation, 2025). Solutions to HWC are therefore a priority but they must also be guided by evidence and best-practice adapted to local contexts, challenges, and needs.

Human–wildlife coexistence (HWCx) can be defined as “a dynamic but sustainable state in which humans and wildlife co-adapt to living in shared landscapes, where human interactions with wildlife are governed by effective institutions that ensure long-term wildlife population persistence, social legitimacy, and tolerable levels of risk” (Carter & Linnell 2016). Coexistence is not the absence of conflict, but rather a context-specific state in which conflicts are managed well and tolerated (IUCN 2023). Approaches for achieving coexistence should consider locally specific needs and challenges, asymmetries in power, justice, and equity, capacity and resource constraints, and implementation needs. Approaches to promote HWCx have included

a broad range of management solutions with varying applicability and effectiveness across contexts. Interventions have traditionally included preventative measures ranging from lethal control to nonlethal barriers and deterrents such as fences, lights, and guarding teams (IUCN 2023). Another approach is to mitigate the impact of conflict once it occurs, such as payouts for losses. These payouts are typically implemented by governments as relief or compensation schemes, with the purpose of offsetting the financial costs of HWC, discouraging retaliatory killing, and reducing public opposition to conservation. More recently, insurance schemes have been introduced as an alternative to compensation schemes. Compensation and insurance share many of the same basic components but can be differentiated as follows:

- **Compensation** is defined as payments (payouts) reimbursing individuals either fully or partially for loss of livestock, crops, property, or human injury/death either fully or partially funded by an external agency (typically a government agency).
- **Insurance** is defined as payouts¹ tied to conflict incidents and funded at least partially through premium or membership payments made by policyholders before incidents occur with an agreement that specified damages will be paid for by an insurer should damage occur. Typically, payouts are conditional on certain risk mitigation practices such as guarding of livestock or crops.

Compensation has been documented as a tool to mitigate the economic impact of HWC on rural communities in at least 50 countries (Ravenelle and Nyhus 2017). When successfully employed, compensation schemes are meant to reduce economic vulnerability, spread the cost of wildlife damage to those who support conservation (i.e. governments), and improve tolerance for conflict species and support for ethical wildlife management and conservation. However, compensation schemes typically suffer from insufficient funds, slow verification and payments, and fraudulent claims (IUCN/SSC-AfESG 2002; Nyhus et al. 2003; Ravenelle and Nyhus 2017; IUCN 2023). Compensation schemes also suffer from the risk of moral hazards, for example farmers deliberately leaving their property and crops unprotected because the payouts are not tied to risk management, which can result in higher rates of crop loss.

Insurance is an alternative to compensation schemes, which has attracted a lot of attention in recent years because it can potentially address many of the challenges of compensation. However, insurance schemes also face challenges of their own and require specific conditions to be met for successful adoption and implementation. For example, premiums may not be affordable, there may still be delays in verifying claims and making payouts, and insurance companies may not be able to meet standards of risk management to qualify for reinsurance². As a result, many current schemes are not true insurance schemes but rather hybrid insurance-based approaches (e.g. the pilot insurance scheme in Nepal described in this report, which currently involves a donor paying premiums on behalf of farmers) or enhanced compensation schemes (e.g. the innovative digitally-enhanced compensation scheme in Kenya also described in this report).

¹ In insurance, a payout is the money or sometimes a service/payment made directly to someone else that an insurer provides after it accepts a claim for a loss or event covered by the policy. A claim is the request for payment; the payout is the resulting settlement or benefit.

² Reinsurance is a discretionary risk-management tool: an insurer retains the losses it can prudently absorb and transfers selected exposures, layers, or portfolios to a reinsurer in exchange for a premium.

Revised criteria for successful insurance (and enhanced compensation) schemes

Building on the previous work summarised above, we propose seven key criteria for the development and implementation of a successful insurance or enhanced compensation scheme for HWC (Table 1). It should be noted that the schemes used to inform these criteria are largely still in the early stages of implementation, and that there are very few examples of true insurance or subsidised insurance schemes (in which payouts for premiums are made or contributed to by impacted people and conditionality between payouts and risk management – e.g. crop or livestock guarding – is in place). These criteria are not exhaustive and may not address all of the context-specific challenges encountered in practice. Design and implementation should always be guided by market research and comprehensive stakeholder engagement (IIED 2023; UNDP 2026).

Collaborative product design

The design and costing of an insurance scheme (or enhanced compensation scheme) should accurately reflect market demand, HWC data (especially data on the frequency and severity of damage done by wildlife), and community needs. This means that all relevant stakeholders (insurance companies, government agencies, local communities, and, where appropriate, civil society organisations) should be involved in the planning, design, and premium-costing process. A recurring problem with existing compensation schemes is that most instances of damage do not qualify for compensation, often because the criteria do not reflect the types or scale of damage caused by wildlife. For example, in Thailand, the national disaster relief scheme includes compensation for crop damage by elephants but only for damage over one rai (1,600m²) in size per event. However, solitary male elephants usually cause small but recurring amounts of damage within the pre-harvest period over several days or weeks. This requirement has since been relaxed in a new scheme managed by the Department of National Parks as of 2025 as a result of feedback from local communities.

Where premium payments are expected from farmers as policyholders, those farmers should be consulted to ensure willingness and ability to pay, or else the most vulnerable farmers may be excluded from such schemes, perpetuating social injustice and reinforcing poverty. Insurance and enhanced compensation schemes are most likely to succeed when local communities are involved in decision-making and insurance contract design, and have some ownership over the scheme (e.g. Kenya, Zambia). The design of insurance schemes should also integrate feedback from insurance and reinsurance companies to assess risk appetite and co-financing and premium setting. For blended schemes, such as public-private partnership models where governments and insurance companies collaborate on scheme implementation, roles and responsibilities must be made clear to ensure effective and timely implementation. For example, if government wildlife officers are responsible for claims verification, that data must be shared promptly with the insurance company for claims validation.

Sufficient finance to develop a business case

In addition to securing community buy-in, insurance schemes must be designed in a way that is financially attractive to insurance and reinsurance companies. Sufficient historical HWC data must be available to accurately forecast the financial cost of HWC in coverage zones (and this is true for enhanced compensation schemes too). Typically, most insurance companies seek 5–10 years of historical data, but this is rarely available for HWC, and in some cases insurance

companies can estimate premiums from as few as two and a half years of data (e.g. the Indonesia case study) or use existing data to design the scheme with acceptable risk margins to account for the scarcity of data (e.g. the Sri Lanka case study). Additional data gathering may be required to build a business case for insurance companies to assess risk. However, where risk is perceived to be too high, insurance companies may suggest or require the involvement of reinsurers. Where insurance companies provide coverage to policyholders, reinsurance companies protect insurers against significant losses, allowing them to manage risk and avoid insolvency. In most cases, insurance companies understand that HWC schemes will not be generating significant profits but may be averse to the high-risk nature of HWC insurance (e.g. the Indonesia case study). Identifying and engaging reinsurance companies to cover against unexpectedly high losses may increase the willingness of insurance companies to adopt the scheme or manage risk for expanding schemes (e.g. the China case study).

In most cases, the cost of premiums for HWC insurance cannot be afforded by the low-income communities who typically bear the brunt of damage, and insurance companies may be reluctant to cover high-risk schemes without the support of re-insurers. Government buy-in may be necessary to co-finance premiums, or else potential co-financing from the private sector or international aid bodies explored. HWC insurance coverage can also be bundled with other products, such as drought or flood insurance, to increase adoption by lower-risk households.

Clear guidelines and regulatory oversight

Zhang et al. (2026) argue that “[More] durable coexistence emerges where [HWC] compensation is embedded within governance systems integrating prevention, participatory institutions, and landscape-scale planning”. They propose a “multi-level coexistence governance framework that links financial instruments, institutional responsibility, and adaptive capacity under climate and land-use change, highlighting the need to move beyond reactive compensation toward equitable risk governance in shared landscapes”. UNDP (2026) also state that successful insurance solutions depend on among other things the presence of enabling regulation and governance. Their arguments apply equally to HWC insurance schemes and the enhanced compensation schemes (see especially the Kenya and Zambia case studies) included in this review.

Thus, for all schemes clear guidelines and where appropriate regulations on pricing and accessing the scheme are needed to ensure transparency and accountability for all stakeholders, helping to manage expectations. In those cases where government funds are required to cover or subsidise premiums (which is currently true of most active HWC insurance schemes) or to cover payouts in the case of enhanced compensation schemes, it is particularly important that there be regulatory frameworks in place to ensure transparent and effective management of the schemes. In the case of insurance-based approaches with a government policyholder (a form of subsidised insurance scheme), there should be legal frameworks in place for governments to take out insurance schemes. This can prevent mismanagement of funds, as well as increase government buy-in. Where no precedent or clear regulations exist, governments may be unwilling to co-manage or finance insurance schemes, especially if national compensation schemes are already in place.

Beneficiary trust and awareness

The potential beneficiaries of new schemes – generally smallholder farmers or livestock owners – may not be willing to engage with insurance schemes, especially when previous government

managed compensation schemes have been unsatisfactory. In many cases, communities may be unfamiliar with the concept of insurance and claims mechanisms especially where insurance penetration and outreach is limited. Non-life insurance penetration is low globally – ranging on average between 2.1% and 2.5% over the past ten years (Organisation for Economic Co-operation and Development 2025). Preliminary and ongoing engagement is needed to sensitize communities to insurance and enhanced compensation schemes in order to build trust in the schemes and administrative bodies (e.g. insurance companies, verification officers); this trust building can be done through focus groups discussions and small-scale pilots. Criteria for claims and claims processes must also be communicated and made clear and accessible to beneficiaries, addressing context-specific challenges such as illiteracy and local language diversity. Engaging communities in scheme development or management – such as the Community Verification Officer (CVO) positions in Kenya and Zambia – can provide a sense of ownership and increase participation. Scheme details should be communicated through locally appropriate channels including community workshops, village meetings, social media, community leaders and trusted individuals, and word of mouth.

Quick and accurate verification of damage

A common challenge with national HWC compensation schemes is slow response times to verify incidences, typically due to the multiple layers of administration that verification must pass through for claims to be processed and disbursed, resulting in community mistrust and lack of participation. Insurance and enhanced compensation schemes can leverage dedicated verification officers and utilise digital technologies effectively for verifying damage, increasing transparency, and mitigating fraudulent claims. Verification should occur promptly, ideally within 24–48 hours, by trusted verification officers trained in species identification, damage reporting, and de-escalation of social conflicts as a result of HWC. To prevent fraudulent claims or evaluator subjectivity, damage reports can be co-verified by other departments, such as protected area staff, before being submitted for validation and payment. Digital technologies, including GPS- and time-stamped images and submission of claims through online applications, can prevent fraud while facilitating rapid response times (see the Kenya and Zambia case studies).

Prompt and fair payouts

Slow or insufficient payouts for damages incurred from wildlife reduce community interest in or willingness to participate in compensation or insurance schemes. Payout amounts should be mutually agreed through participatory engagement with local communities and informed by HWC data and actuarial calculations. Alternatively, index-based insurance³ schemes – in which payouts are triggered by pre-determined, objective indices (e.g. rainfall) – can automatically disburse payouts when triggered by specific and measurable climate events that are known to be empirically linked to HWC rates (e.g. drought). However, this requires sufficient data to secure buy-in by insurance companies. In addition, the basis for payment calculations for

³ Index-based insurance (also called parametric insurance) is a type of insurance that pays out a pre-agreed amount irrespective of the policyholder's precise financial loss when a specified measurable event or index (a "parameter") such as a drought or serious flood occurs, rather than compensating the actual loss after a claims assessment (i.e. the indemnity-based insurance approach of mainstream insurance products) (IUCN 2023). Microinsurance schemes are typically index based not indemnity-based (Sandmark et al. 2013).

damages should be made clear to all stakeholders, and the disbursement process be transparent and trackable.

Risk mitigation and monitoring

Compensation schemes rarely reduce HWC as a standalone measure and can in fact increase it because of the disincentive to guard crops or livestock provided by compensation payouts (IUCN/SSC-AfESG 2002). Such problems are known as “moral hazards” in the insurance literature. In traditional insurance, premium rates, and eligibility for payouts for any claims made are conditional, with premiums based on risk (e.g. crop type) and payouts dependent on policyholders adopting risk management behaviours (e.g. guarding crops). An alternative to making farmers responsible for risk management such as crop guarding is for governments to be held responsible for reducing risks by investing in effective damage mitigation strategies for those insured to be eligible for payouts.

Risk mitigation conditionalities should be co-designed with communities, insurance companies, and government agencies to ensure they are feasible and can be verified either at the household level (e.g. predator-proof corrals for livestock) or at the landscape level where policies are taken out by the government on behalf of local communities (e.g. electric fencing along protected area boundaries or community elephant response teams). In addition, risk must be monitored continuously to accurately forecast financing needs and identify priority areas for risk management and mitigation. The claims records themselves should provide a transparent, accurate, and systematic database of conflict events which can be regularly evaluated to monitor trends, update financing needs, and identify emerging hotspots. However, lack of transparency and follow-up after submitting claims and delayed payouts can cause individuals and even communities to lose motivation to report incidents, resulting in significant underreporting of conflict, compromised validity of the database, and more generally a lack of faith in the insurance scheme. Third-party validation (e.g. by NGO staff on the ground or government HWC data) can act as additional monitoring mechanisms.

Beneficiary satisfaction with the scheme should be regularly assessed in combination with attitudes towards conservation and wildlife in order to monitor tolerance levels and address emerging issues with scheme implementation in a timely manner (e.g. see the Kenya case study).

Table 1. The seven key criteria for the development and implementation of a successful insurance scheme that emerged from the review undertaken by our project. These criteria were used to assess the case studies presented in this report.

Criteria	Details
<i>Collaborative product design</i>	✓ Is the product design in line with market demand, HWC data, and community feedback? ✓ Can the scheme be bundled with other insurance types to increase adoption by lower-risk households, reduce transaction costs, and increase efficiencies? ✓ Was the community engaged in planning and design of the scheme and premium costing? ✓ Was the contract communicated, negotiated, and agreed with policymakers?
<i>Sufficient finance to develop a business case</i>	✓ Are there sufficient data to accurately forecast the true cost of HWC? ✓ Does the insurance product constitute an attractive business opportunity for the private sector (insurer, re-insurer)? ✓ Is the scheme financially sustainable? ✓ Are there cost-sharing mechanisms to reduce the financial risk and burden of premium costs?
<i>Clear guidelines and regulatory oversight</i>	✓ Does the government buy-in to and support the scheme? ✓ Are there regulatory frameworks in place for managing the scheme? ✓ Is there technical expertise available for developing and implementing the scheme?
<i>Beneficiary trust and awareness</i>	✓ Do scheme beneficiaries (e.g. individual farmers and communities) trust the scheme and its administrators? ✓ Are the criteria for making claims and claims processing clear and accessible? ✓ Was the insurance scheme clearly communicated to beneficiaries? ✓ Do beneficiaries have some ownership over the scheme?
<i>Quick and accurate verification of damage</i>	✓ Is there an efficient reporting mechanism? ✓ Do verifiers respond to incidents within 24–48 hours? ✓ Are verifiers trained to accurately quantify damage and identify the damaging species? ✓ Does the scheme have mechanisms to prevent fraudulent claims? ✓ Is there social training for verification agents to mitigate potential conflict with claimants?
<i>Prompt and fair payouts</i>	✓ Are payouts processed and disbursed within 30 days? ✓ Do the payout amounts accurately reflect the true cost of damage (or agreed payout proportion, e.g. value of damage minus an excess)? ✓ Is the payout process transparent to both policymakers and policyholders?
<i>Risk mitigation and monitoring</i>	✓ Are there incentives or damage prevention conditions in place to prevent moral hazards? (For example, are premiums higher for high-risk crops, and/or are insurance payouts conditional on mitigation strategies such as corrals for guarding livestock?) ✓ Is there regular monitoring of policyholders' satisfaction with the scheme and attitudes towards conservation? ✓ Is there a systematic and reliable HWC monitoring system in place? ✓ Are emerging challenges and new hotspots and risk levels monitored and promptly addressed? ✓ Does the scheme have sufficient flexibility to respond to external drivers, e.g. climate change?

Case studies

Human–wildlife conflict insurance and enhanced compensation schemes have been evaluated, piloted, and/or fully implemented in several countries. These schemes vary in their management and financing methods and were adapted to the specific local context (Table 2). We provide nine case studies of schemes at varying levels of development and implementation and use them to provide insights into key challenges and learnings. Each case study was also evaluated against the criteria checklist in Table 1.

Table 2. Overview of case studies of human–wildlife conflict insurance schemes. Green-coloured schemes have been formally adopted, blue-coloured schemes have been piloted but not formally adopted, and orange-coloured schemes are still in the development phase (or abandoned in the case of Indonesia).

Country	Scheme type	What does the scheme cover?	Current status	Who designed/ manages the scheme?	Who pays for premiums?	Risk mitigation conditionality?
Africa						
Kenya	Digitally enhanced compensation scheme	Livestock predation, crop and property damage, human injuries, and fatalities	Piloted in 6 hotspot counties as of 2024 with national roll-out planned for 2026	AB Entheos	No premiums are paid and no insurance company is involved; Government of Kenya makes compensation payments	Yes
Zambia	Digitally enhanced compensation scheme with parametric drought insurance scheme which triggers funding for HWC mitigation	Livestock predation, crop and property damage, human injuries and fatalities, and drought	Piloted in 3 Game Management Areas of Kafue region as of June 2025	AB Entheos	Donor funded (Humanity Insured)	Yes
Asia						
China	Government- subsidised public liability insurance	Crop and property damage and human injuries and fatalities from elephants	Launched in 2009 across all elephant range counties in Yunnan Province	China Pacific Insurance Group Co., Ltd	Provincial government	No

Indonesia	Unsubsidised true insurance scheme with a Yield Reduction Protection Plan (YRPP)	Crops loss from fire, flood, elephant, and rat attack	Feasibility assessment conducted but proposed scheme not adopted	WCS and Greenomics plus a consortium of Indonesian insurance companies	No financing secured; intention for farmers to pay premiums (with subsidies discussed)	Yes
Malaysia	Uncertain as yet	Crop damage from elephants for oil palm smallholders	In design and development	Seratu Aatai and Actuarial Partners	No financing secured	Yes
Nepal	Public liability subsidised insurance scheme	Crop damage from natural disasters including elephants	Currently being piloted	ZSL Nepal and Green Governance Nepal	Donor funded (ZSL/Darwin Initiative) initially, with a plan to transition to farmers paying	No; may be added in Phase 2
Sri Lanka	Private subsidised insurance scheme operating alongside existing compensation scheme	Crop damage from elephants	Designed and piloted, but not formally launched	IIED and SANASA General Insurance Company (Previously)	No financing secured for subsidising premiums	Yes
Thailand	Government subsidised insurance scheme	Field crop damage from elephants	In design and development	ZSL Thailand, Risk Shield	No financing secured	Yes
Mesoamerica						
Mexico	True insurance scheme with premiums paid through compulsory membership fees	Livestock predation (cattle, horses, pigs) by wild predators and feral dogs	Launched in 2008	CONANP*, CNOG**, Jaguar Expert Group, and government entities	CNOG through membership fees	No

* Commission of Natural Protected Areas (CONANP); **National Confederation of Livestock Organizations (CNOG)

Kenya

For many years, the Government of Kenya has operated an HWC compensation scheme; however, the scheme faced persistent challenges, including delays in claim payments, unstandardised compensation payouts, and incidents of fraud. In 2018, AB Entheos and the International Institute for Environment and Development (IIED) conducted a feasibility study for HWC insurance in two HWC ‘hotspot’ counties in Kenya drawing on community engagement and historical data from the Kenya Wildlife Service (KWS) and supported by sound actuarial modelling.

The design of the scheme evolved and ultimately, AB Entheos, as part of a consortium, has been supporting the Government of Kenya in the implementation of what became a digital enhanced compensation scheme for HWC. The scheme provides payouts based on standardised and predetermined benefits for five major categories: loss of human life, bodily injuries, livestock predation/depredation, crop damage, and damage to property. It draws on insurance sector expertise, systems, and claims management processes to improve the administration of compensation for wildlife-related losses. By digitising claims registration, verification, assessment, and payment workflows, the platform also aims to increase efficiency, transparency, accountability, and accessibility for affected communities while strengthening government capacity to manage compensation programmes at scale. Note that no premiums are paid and no insurance company is involved; the Government of Kenya makes the compensation payments.

In addition to being involved in the scheme’s design through focus group discussions, local communities were closely involved in the scheme’s delivery process prototype testing, and enlisted and trained as Community Verification Officers (CVOs) to ensure the product design and marketing were in line with community needs. These CVOs also work closely with KWS officers to assess damage and submit claims based on the specific losses incurred.

In 2019, a consultative forum was held with stakeholders from government and the private sector to validate the product design, and AB Entheos in partnership with Taita Taveta Wildlife Conservation Association implemented a pilot scheme in selected parts of the Tsavo ecosystem. The pilot has now been rolled out across six hotspot counties in Kenya, and its impact is currently being reviewed to inform a nationwide roll out in late 2026.

This work by AB Entheos, KWS, IIED, and partners in Kenya demonstrates how these types of digital enhanced compensation schemes can be used to address many of the problems of standard compensation schemes, e.g. inefficient and slow processes, fraudulent claims, and perverse incentives not to protect crops or livestock (see criteria alignment table below). The question of sustainability remains, however.

Community engagement in Mwanda Mghange, Taita Taveta County, Kenya. Photo credit: AB Entheos.



Kenya enhanced compensation scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	Communities were involved during the development and feasibility study of the scheme through focus groups and prototype testing. A consultative forum was held with government and private sector stakeholders to validate the product design and offer a competitive proposal.
<i>Sufficient finance to develop a business case</i>	Historical HWC data from the Kenya Wildlife Service (KWS) was used to forecast funds. The Kenyan government is currently the entity making payouts to farmers with valid claims. No premiums are paid and no insurance organisation is currently included.
<i>Clear guidelines and regulatory oversight</i>	The government has demonstrated support for the scheme through collaboration with private sector partners to pilot the model over a two-year period. The Wildlife Conservation and Management Act of 2013 provides the basis for regulatory oversight of schemes that mitigate financial losses as a result of death, injury, crop and livestock loss, and property damage from HWC.
<i>Policyholder trust and awareness</i>	Communities have developed strong trust in the scheme and its administrators due to transparent communication, consistent engagement, and the scheme's record of providing reliable payouts. Community awareness and education via forums and digital and print media is conducted regularly to ensure the communities understand all the scheme components, rules and guidelines, and criteria and exclusions. Community Verification Officers (CVOs) further support claims verification and local participation.
<i>Quick and accurate verification of damage</i>	AB Entheos uses robust end-to-end verification to reduce instances of fraud and to hasten the process of claims settlement. Upon receipt of a claim, a CVO is assigned to respond within 24 hours. All CVOs undergo rigorous training to accurately identify and document incident details. A KWS officer conducts an independent verification of each incident and submits a report. These reports are further supported by photographic evidence with timestamps and GPS imprints. Both reports are reviewed by a claims analyst who submits the claim for payout or defers for further investigation.
<i>Prompt and fair payment</i>	Payments are processed within 90 days after complete documentation has been submitted and verified. Disbursements are made through secure and traceable channels, including mobile money and bank transfers, which helps ensure that beneficiaries receive funds efficiently and reliably. Payout amounts are based on standardized benefit values that are linked to the type and scale of loss (e.g. Tropical Livestock Units for predation) and the continental scale for human injuries
<i>Risk mitigation and monitoring</i>	Payouts are provided only when there is proof that the claimant had some mitigation measure in place. AB Entheos monitors beneficiary satisfaction, income protection, and reduction of retaliatory killings as indicators of scheme success. The scheme supports existing HWC monitoring efforts by KWS by enabling real-time event capture, geo-mapping, photographic evidence, and end-to-end digital verification. Emerging trends and related risks, such as the correlation between drought and HWC, are captured through the verification system and coverage features have evolved over time to accommodate these changes.

Zambia

WILD Cover was launched in June 2025 by AB Entheos with support from Humanity Insured and designed to run for a two-year period. Operating in Nkala, Namwala, and Mumbwa Game Management Areas (GMAs) in Kafue region, the scheme combines HWC compensation with parametric drought insurance. As in Kenya, the compensation component provides payments for incidences of crop damage, livestock predation, property loss, and human injury and mortality. In addition, when drought thresholds are triggered, funds are automatically released to support implementation of HWC mitigation measures through partners e.g. construction of predator-proof kraals. Premiums for the drought insurance pilot are currently being financed by grant funding from Humanity Insured, but AB Entheos is in communication with the government to create a pathway for co-financing.

Households in the three GMAs report incidents through a dedicated USSD code (Unstructured Supplementary Service Data is a communications protocol used by GSM cellular telephones to communicate with the mobile network operator's computers) which automatically logs claims into the system and alerts Community Verification Officers (CVOs) and claims analysts. CVOs then collect additional information and evidence, typically within 24 hours. Claims are assessed by a claims analyst from AB Entheos, who recommends approval or rejection. Approved claims are processed, with payments disbursed to affected households via a mobile money app. Between July and December 2025, the scheme assessed 325 claims with ZMW 591,600 (\$25,722 in total payouts). Early results show improved trust, reduced payment delays, and stronger incentive for investment in mitigation measures.

The expected outcomes of the programme include policy reform to incorporate Human–Wildlife Conflict (HWC) insurance within the Zambia Wildlife Act, as well as expansion of the model to other landscapes across the country. The initiative aims to reduce retaliatory killings of wildlife by providing structured support to affected communities, while also strengthening climate resilience through drought-triggered assistance mechanisms.

Onelly Sikota, a community verification officer (CVO), conducting a community engagement session for WILD Cover, Zambia. Photo credit: AB Entheos.



Zambia enhanced compensation and parametric insurance – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	Product design was informed by historical HWC incident data, feasibility studies, and structured community consultations, ensuring alignment with observed risk patterns and local priorities. Communities, Community Resource Boards (CRBs), and local leaders were actively involved in the roll out phase to ensure buy-in. The scheme is aligned with national priorities through consultations with the Department of National Parks and Wildlife (DNPW) and other policymakers.
<i>Sufficient finance to develop a business case</i>	HWC data is available but remains fragmented across stakeholders, limiting precise cost forecasting. Historical records and data generated through this pilot will provide a credible basis for estimating costs and establishing a baseline for improving future projections. The product presents a potentially attractive opportunity for the private sector by opening an untapped, scalable market and offering a competitive advantage to early adopters. However, the scheme currently relies on donor funding for compensation and drought insurance premium payments.
<i>Clear guidelines and regulatory oversight</i>	WILD Cover operates with the support of the DNPW, demonstrating government buy-in. While specific legislation for HWC insurance is not present, the pilot is contributing evidence to inform forthcoming legal reforms aimed at formally recognising HWC insurance mechanisms under the Zambia Wildlife Act.
<i>Policyholder trust and awareness</i>	Community trust has strengthened through transparent communication, active continuous engagement, and reliable payouts. Claims criteria and processes are clearly defined and communicated in accessible formats, enabling communities to understand coverage limits. Community ownership is reinforced through locally selected verification officers, nominated by chiefs and CRBs, which enhances credibility and accountability at the local level.
<i>Quick and accurate verification of damage</i>	A mobile USSD reporting system enables CVOs to respond to reported incidents within 24 hours. CVOs are trained in species identification and use standardised assessment forms alongside GPS-tagged photographic evidence, reducing errors and fraudulent claims. Community-sensitive verification is supported by DNPW and Game Rangers International, helping maintain transparency, manage expectations, and mitigate potential conflict during verification.
<i>Prompt and fair payment</i>	Payouts are processed and disbursed within two weeks of claim verification and approval, typically through mobile money platforms. Consolation payment amounts are determined using standardised valuation frameworks informed by current market prices, partly reflecting the cost of damage. The claims process is transparent, with clear communication through CRBs and community meetings, and documentation shared among relevant stakeholders.
<i>Risk mitigation and monitoring</i>	Claimants who fail to take reasonable and appropriate measures to protect themselves, their property, crops, or livestock are not eligible for payouts, encouraging risk-reduction practices. Periodic CVO meetings gather feedback and monitor community satisfaction and conservation attitudes. Digital reporting and verification using GPS-tagged evidence and standardised forms enables systematic HWC data monitoring with incident data reviewed quarterly to identify emerging hotspots and adjust responses. Parametric drought triggers and adaptive provisions allow dynamic updates to coverage, insured values, and operational protocols in response to evolving climate-related risks.

China

China's human–elephant conflict insurance (HEC) scheme was developed in response to escalating damage by elephants in Yunnan Province – where the entirety of China's wild elephant population resides – and challenges with traditional government-funded compensation mechanisms, which proved increasingly inadequate due to fiscal constraints, administrative delays, and inconsistencies across jurisdictions. The scheme was developed in 2009 through collaboration between provincial and local forestry and grassland administrations, county-level governments, and the China Pacific Insurance Group Co., Ltd. Local governments act as the formal policyholders, purchasing insurance coverage on behalf of residents within designated elephant range areas. The insurance group is responsible for underwriting risk, processing claims, and disbursing payouts, while government agencies retain responsibility for policy oversight, eligibility criteria, and coordination with conservation authorities. The scheme provides payouts for elephant-related damages, including agricultural crop losses, damage to residential structures and selected public infrastructure, human injuries, and human fatalities. Guidelines for administering the scheme were informed by actuarial considerations, local economic conditions, and documented HWC patterns (Chen et al., 2013; Li et al., 2023).

Over time, reinsurance arrangements have been introduced to address the high variance and catastrophic potential of elephant-related losses. Research institutions and conservation organizations have also contributed technical inputs in relation to damage classification, insurance standards, and monitoring frameworks. Community engagement in the early stages of scheme development was relatively limited and primarily top-down. Over time, however, feedback from affected communities, village leaders, and local officials has been increasingly incorporated into adjustments to insurance standards and claims procedures. At present, the HEC insurance scheme is fully implemented across all major elephant range counties in Yunnan Province. Insurance contracts are renewed on an annual basis, with stable fiscal allocations incorporated into local and provincial budgets. Claims are processed continuously, and the scheme functions as a standing institutional arrangement rather than a pilot or temporary intervention.

Continuing challenges facing the scheme include rising damage levels associated with elephant population growth and range expansion, climate variability affecting crop vulnerability, and the need to maintain insurer participation in the face of high and spatially concentrated risks. However, the insurance mechanism has become increasingly embedded within broader conservation and land-use planning processes, including preparations for the Asian Elephant National Park in Yunnan.

Elephants in Yunnan Province, China. Photo credit: Li Zhang.



China insurance scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	The scheme was developed through collaboration between provincial and local forestry and grassland administrations, county-level governments, and licensed insurance companies. Local communities were not involved in the original scheme design.
<i>Sufficient finance to develop a business case</i>	Local governments act as the formal policyholders, purchasing insurance coverage using county-level fiscal budgets on behalf of residents within designated elephant range areas. Insurance and reinsurance companies assume responsibility for claims within agreed limits.
<i>Clear guidelines and regulatory oversight</i>	Provincial authorities in Yunnan began to explore insurance-based mechanisms as a means of stabilizing compensation funding, improving payment timeliness, and transferring a portion of financial risk away from local governments. This coincided with broader reforms in China's public liability insurance sector, which created regulatory and institutional space for wildlife-related insurance products.
<i>Policyholder trust and awareness</i>	Community engagement in the early stages of scheme development was relatively limited and primarily top-down. Over time, however, feedback from affected communities, village leaders, and local officials has been increasingly incorporated into adjustments to compensation standards and claims procedures. Efforts have been made to improve the communication skills of verification agents and reduce the potential for conflict during site inspections.
<i>Quick and accurate verification of damage</i>	Damage is reported by village committees or township authorities who notify insurance companies. Verification is conducted jointly by insurance adjusters and forestry or wildlife authorities within 48 hours. Verification protocols emphasize accurate species identification, standardized documentation, and photographic evidence. Measures to prevent fraudulent claims include cross-verification, local knowledge checks, and monitoring of repeat claims. In many localities, digital communication tools have improved reporting efficiency and reduced response times.
<i>Prompt and fair payment</i>	Payouts are typically provided within 3–10 days. Compensation amounts are currently based on actual loss informed by market value. These improvements are a result of more active community engagement and public reporting. In the past, non-timely payments and low payouts were a major complaint from interviewed rubber farmers, partially due to lack of verification officers.
<i>Risk mitigation and monitoring</i>	There were no HEC data or monitoring system in place during the development of the scheme. Iterative learning based on claims data, spatial conflict patterns, and community responses has functioned as an adaptive management mechanism for monitoring risk. However, claims are likely to underestimate the true extent of damage. In addition, risk management by farmers is not a requirement for payouts, which could potentially lead to moral hazards.

Indonesia

In 2002, the Wildlife Conservation Society (WCS) contracted an Indonesian economics consultancy company, Greenomics, to work with insurance companies in Indonesia to evaluate the feasibility of crop-loss insurance schemes as part of a human–elephant conflict (HEC) mitigation strategy for Sumatra's Lampung Province. Insurance companies agreed in principle that an elephant damage insurance scheme for Lampung's Way Kambas National Park (WKNP) was feasible and recommended a combination of cover for losses arising from fire, flood, elephant, and rat damage, and other hazards. They also recommended a Yield Reduction Protection Plan (YRPP) as the most appropriate option. However, additional data on HEC, existing risk-management, and community willingness-to-pay was required. The Wildlife Conservation Society and its local NGO partner, WATALA, facilitated engagement with local communities and provided data on the rate and severity of damage, including the market value of crop losses, collected by field teams over 2000–2002 around the province's two main elephant populations including WKNP. Notably, insurance companies were able to set premiums using only two and a half years of recent HEC data.

In 2003, Greenomics' assessment suggested that an insurance scheme was unlikely to be feasible, as the premiums and the size of the excess required by insurance companies exceeded in many cases the costs of HEC (including opportunity costs) and thus farmers' willingness-to-pay and ability to pay. The insurance companies were also concerned about the difficulty of meeting risk management standards for reinsurance. An additional challenge was the lack of a capable, well-resourced organization to collect premiums and collect the data on crop damage and protection methods in place which would be trusted by both the companies and the local communities. Nevertheless, it was concluded that insurance schemes warranted further investigation, especially on a Sumatra-wide scale, since the resulting economies of scale should reduce premiums by 'spreading out' the administrative costs of initiating and running insurance schemes. Subsequently, the IIED and others have also shown how the climate change driven increase in the frequency of severe weather globally has resulted in insurance companies devising insurance products (especially index-based insurance) suitable for large numbers of poor farmers that will meet reinsurance risk management standards (Greatrex et al. 2015; Friedel 2015).

Consultations about human–elephant conflict insurance with villagers around Way Kambas National Park, Sumatra, Indonesia. Photo credit: Wildlife Conservation Society – Indonesia Program.



Indonesia insurance scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	The feasibility assessment and scheme design was informed by HWC data and stakeholder feedback. Communities were engaged in the feasibility assessment through consultations with community self-reliance groups. Following feedback from insurance companies, the scheme was bundled with losses arising from fire, flood, elephant and rat damage, and other hazards to increase coverage, and a Yield Reduction Protection Plan was identified as the most appropriate option for the scheme.
<i>Sufficient finance to develop a business case</i>	Two and a half years' data on HEC rates including market values of crop losses were collected by NGOs (WCS, WATALA) working around the sites in Indonesia and made available to the insurance companies. However, the premiums proposed were too high relative to the cost of damage done by elephants and farmers' willingness-to-pay (37% of the minimum value required under the YRPP scheme). Because the insurance companies also did not consider the scheme viable more broadly (due to the difficulty of meeting reinsurance risk management standards), no co-financing was sought to subsidize the cost of premiums.
<i>Clear guidelines and regulatory oversight</i>	Government agencies were supportive in principle, i.e. if insurance companies thought the scheme was viable. No specific regulatory frameworks were put in place for managing the scheme because the scheme was not piloted or launched.
<i>Policyholder trust and awareness</i>	Both the farmers and the insurance companies expressed concerns about the difficulties of collecting reliable data on damage done and crop protection measures in place. There were also concerns expressed about trustworthy methods for collecting premiums (i.e. to ensure the money ended up with the companies).
<i>Quick and accurate verification of damage</i>	N/A as the scheme was not implemented though note two and a half years of data on HEC were collected by WCS and WATALA in the immediately preceding years and used to set premiums.
<i>Prompt and fair payment</i>	N/A as the scheme was not implemented.
<i>Risk mitigation and monitoring</i>	The intention of the original scheme design was that farmers would not be eligible for cover or payouts if their agricultural activities encroached into the protected areas. In addition, they would also need to demonstrably guard their crops. WCS and WATALA provided a systematic and reliable HWC monitoring system, which could have been extended to claims data for the scheme if it had been implemented.

Malaysia

The Livelihood Insurance for Elephants (LIFE) initiative in Malaysia began in 2020 as a pilot concept proposed by Seratu Aatai in collaboration with Actuarial Partners and supported by the Global Environment Facility's Small Grants Programme. The initiative aims to address a persistent challenge: small and medium-size oil palm growers regularly incur financial losses from elephant presence yet have limited formal mechanisms to transfer that risk. In 2020, Malaysia accounted for 25.8% of global palm oil production and 34.3% of global exports. Smallholders typically cultivate 2–10 hectares, while estates operate on larger holdings. Insurance or Takaful (a co-operative system of reimbursement or repayment in case of loss, organized as an Islamic or Sharia-compliant alternative to conventional insurance) has been explored as a tool to stabilize livelihoods, reduce negative responses toward wildlife, and embed risk management within a broader coexistence framework. However, designing risk-transfer mechanisms requires sensitivity to uneven capacities, risk exposure levels, and varying familiarity with financial products.

LIFE has concentrated on preparing the enabling environment rather than launching a product prematurely. For providers, elephant-related damage is insufficiently documented, spatially variable, and difficult to translate into actuarial assumptions. Without credible data or risk-sharing arrangements, pricing remains conservative (i.e. premiums will be high), undermining affordability. Affordability remains central. Most smallholders rely on government assistance and may see little reason to pay premiums unless value is immediately visible. The initiative has examined how subsidies, guarantees, or blended finance might bridge early uncertainty. Malaysia's existing paddy (rice) insurance programme – where government involvement by giving subsidies has enabled participation by small scale farmers while allowing insurers to gradually build datasets and confidence – demonstrates that public–private partnerships are not foreign to the Malaysian policy landscape and may be adaptable to wildlife risk. The Ministry of Natural Resources and Environment has recently expressed interest, with the Malaysia Palm Oil Board assigned to consider pathways. This marks transition from civil society-led concept toward formal governmental attention, potentially facilitating coordinated data collection and public support mechanisms.

Bornean elephant female herd feeding along the Kinabatangan River in Sabah, Malaysia. Photo credit: Seratu Aatai.



Nepal

Nepal currently has an existing crop insurance scheme where the Government provides an 80% premium subsidy for individual households enrolling in crop insurance covering rice, wheat, maize, and selected commercial crops. However, this insurance product is only available to farmers with a minimum landholding of 0.02ha. To address this limitation, the Zoological Society of London Nepal (ZSL Nepal) and Green Governance Nepal (GGN) with financial support from the UK Government's Darwin Initiative have partnered to design and pilot a new public liability insurance (PLI) scheme to cover crop damage from wildlife for a community living near to Bardia National Park, in south-western Nepal. The pilot scheme will provide group insurance for households living in the Kailashi-Laljhadi buffer zone, offering increased protection for those with small landholdings (who are unable to access insurance from the Government of Nepal) and limited insurance awareness and financial capacity.

Consultations were held with communities, local government, and park staff on their willingness to participate in or support the pilot scheme. A household survey was also undertaken to assess income levels, landholdings, crop types, and the economic costs of wildlife-related damage at the household level. Results demonstrated that local communities were largely unaware of HWC insurance schemes and were initially reluctant to participate. Community members expressed concerns regarding premium affordability, trust in insurance companies, clarity of claim procedures, and the reliability of payouts, possibly due to their experiences with the government relief (compensation) mechanism which has been slow and complicated. Further community consultations were held on the proposed insurance scheme to build understanding and to manage expectations, and to ensure the pilot scheme was designed to make it easier for community members to report claims and receive payments quickly.

Discussions with insurance companies demonstrated that PLI or group insurance to cover against crop damage was not something that had been provided before. The lack of a complete HWC dataset made premium calculations challenging, and the high risk of loss for crops at the pilot site made the scheme a difficult 'sell' to insurance companies. Out of three companies approached, only one agreed to pilot the scheme, and to focus on learning over immediate profits. A year-long pilot was launched in October 2025 covering 320 households in the Kailashi-Laljhadi buffer zone for damage to paddy (rice), maize, wheat, oil seeds, and lentils. Consultations are underway with local municipalities to explore opportunities for replication elsewhere should the pilot demonstrate effectiveness in covering the economic losses of crop damage for smallholder farmers. Furthermore, lessons from the pilot will contribute to improved HWC data collection, enabling better accuracy of premiums pricing.

*Settlement at the fringe of Bardia National Park, Nepal, selected as a pilot site for HWC insurance.
Photo credit: ZSL Nepal.*



Nepal insurance scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	Communities were actively engaged throughout planning and design. The pilot site was selected based on consultations with buffer zone institutions, national park authorities, and local ward offices. Local households contributed to decisions on participation, coverage scope, and affordability. The scheme was communicated to policymakers ensuring policy alignment.
<i>Sufficient finance to develop a business case</i>	Official HWC records likely underrepresent actual losses. A site-specific survey estimated annual crop damage costs for the pilot, though data gaps remain in consistency, spatial coverage, and loss valuation. Due to high risk and uncertainty, only one insurance company agreed to pilot the scheme. Premiums are currently fully funded by ZSL Nepal through donor support, but if successful, the scheme could align with and be co-financed by the Nepal Government's existing livestock and crop insurance subsidy framework with farmers contributing to the premiums.
<i>Clear guidelines and regulatory oversight</i>	Scheme guidelines and coverage were informed by site-specific HWC records, socio-economic surveys, and community consultations. Park authorities, Buffer Zone User Committees, and local governments have expressed support for the pilot. Nepal has existing regulatory frameworks for insurance schemes implemented through a licensed insurance company and mediated by legally recognized buffer zone institutions. However, specific regulatory guidance for wildlife-related crop damage insurance remains limited.
<i>Policyholder trust and awareness</i>	Trust in the scheme is being built through engagement with Buffer Zone User Committees, local authorities, and frequent community consultations, focusing on criteria for claims and the claims submission process. Households requiring additional support to navigate the process, particularly for documenting losses and understanding eligibility, can access this through the Committees.
<i>Quick and accurate verification of damage</i>	The Buffer Zone User Committee manages reporting and claims processes. Crop damage must be reported within five days; the insurer evaluates damage within three days and processes payment promptly. Trained evaluators verify damage, cross-checking with HWC data and committee records to prevent fraud and duplicate claims. While designed to overcome government relief scheme delays and complexity, verification remains costly and time-consuming given the rural location. Challenges include missing crop inventories, lack of land ownership documentation, and evaluator subjectivity.
<i>Prompt and fair payment</i>	Key challenges with the government relief scheme are the slow processing of claims and payments, and the lower than market value payment amounts. This pilot insurance scheme is hoping to overcome these challenges by expediting the claim payment and ensuring payouts reflect true market value.
<i>Risk mitigation and monitoring</i>	Households are expected to actively protect crops from wildlife damage, but this requirement is not enforceable and is not linked to mitigation measures (i.e. fencing, guarding), which may increase claims and premiums and reduce insurer willingness to provide future coverage. The pilot will monitor this risk. ZSL also works with local HWCx champions who support claim processing and keep a record of HWC related incidents to improve reporting and implementation.

Sri Lanka

Sri Lanka has one of the highest rates of HEC in the world, with elephant deaths averaging more than one per day largely in retaliation for crop damage, and human fatalities from HEC exceeding 100 per year since 2020. A few compensation and insurance schemes are currently in operation, mostly through government entities. These include compensation for human deaths from elephants available through the government, insurance for crop damages offered through the Agrarian and Agriculture Insurance Board, and some crop insurance products available through private insurance providers covering damage due to wildlife. There is no insurance scheme, public or private, specifically for elephant-related losses.

To address worsening HEC in Sri Lanka, IIED and Actuarial Commons Inc. explored the feasibility of an insurance scheme designed to cover farmers for crop losses caused by elephants and foster greater tolerance among farmers toward elephants, reducing retaliatory killing. To achieve this primary objective, the insurance cover was to be offered to farming communities that already had some risk mitigation measures, primarily electric fences to safeguard crops and payment of claims was to be conditional upon the survival of the elephants.

The initiative was developed in 2017–2019 with the intention of launching an insurance product as a pilot for a limited number of households in two selected geographic areas in Sri Lanka. Preliminary data gathering, analysis, and product design was conducted by IIED, the Institute of Policy Studies (IPS), and Spark Actuarial. Sanasa Insurance Company was selected as the insurance partner considering the reach of their existing network and the ability to bundle the proposed scheme with their existing crop insurance product.

The insurance cover was designed to provide coverage for human deaths, total permanent disability, per day benefit for hospitalization, property and farming equipment, and crop damages including to home gardens. The types of covers desired by the affected communities were determined through field research and focus group discussions. However, the premium required for such broad coverage proved to be unaffordable. To make this insurance cover accessible, a subsidy for the premium was deemed essential. Without financial support to reduce the cost, enrolment rates in the scheme were projected to remain very low. This low participation would, in turn, hinder the collection of sufficient data necessary to evaluate and quantify the true impact of the insurance project on mitigating HEC. Despite the best efforts of all parties involved, no funding has yet been secured to subsidize the premium. The product is yet to launch but efforts to fund a subsidy scheme are underway.

Elephants in Sri Lanka's Pinnawala Elephant Orphanage, where some elephants were taken as a result of human–elephant conflict. Photo credit: Simon Hedges.



Sri Lanka insurance scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	Preliminary data gathering, analysis and product design was conducted by IIED, Institute of Policy Studies (IPS), and Spark Actuarial. Sanasa Insurance Company was selected as the insurance partner considering the reach of their existing distribution network and the ability to bundle the proposed HEC scheme with their existing crop insurance product. The types of covers desired by the affected communities were determined through field research and focus group discussions. However, the premium required for such broad coverage proved to be unaffordable.
<i>Sufficient finance to develop a business case</i>	While the data available is insufficient for accurately estimating premiums, it can be used with some risk margins to account for the lack of availability of data. Ultimately, the lack of funds to subsidize premiums was the primary reason the pilot program was not launched in 2019/2020. While the funds required to subsidize premiums for a year were not exceptionally high, the lack of data as evidence of impact was a challenge for obtaining donor funding.
<i>Clear guidelines and regulatory oversight</i>	There are multiple compensation and insurance schemes for HEC operating independently in Sri Lanka. This overlap may reduce overall effectiveness of the schemes. Since there are no clear regulations or single assigned organization wholly responsible for managing HEC, balancing multiple stakeholders is a challenge.
<i>Policyholder trust and awareness</i>	The target communities for HEC insurance schemes are unwilling to pay much in premiums due to the lack of trust in insurance. This mistrust arises for multiple reasons, including miss-selling and lack of transparency in claims processing, but also due to lack of awareness and low financial literacy. Additionally, the lack of involvement of affected communities in product design through market research and field studies lead to a gap between their needs and the insurance products available.
<i>Quick and accurate verification of damage</i>	Feedback from the field visits and conversations with affected communities revealed that the process for getting compensated by the Government was lengthy, complex, and unclear. Private insurance providers use claims assessors who must visit the location, which is costly and time consuming. Additional challenges include: no inventory of crops planted, lack of legal documentation of land ownership, and subjectivity of the claims assessors.
<i>Prompt and fair payment</i>	Claims payment times in government compensation and insurance schemes are quite lengthy. Claim decisions, especially the amount paid out, lacks transparency. This is partially due to the lack of awareness and low financial literacy of affected communities, which needs to be taken into consideration in designing an effective insurance program.
<i>Risk mitigation and monitoring</i>	The pilot scheme was meant to be rolled out in areas that already had electric fences installed because of concerns from potential donors engaged, with payment of claims conditional upon the survival of the elephants. The feasibility of incorporating risk mitigation in policy design will depend on insurance providers and their ability to monitor claims and risk mitigation.

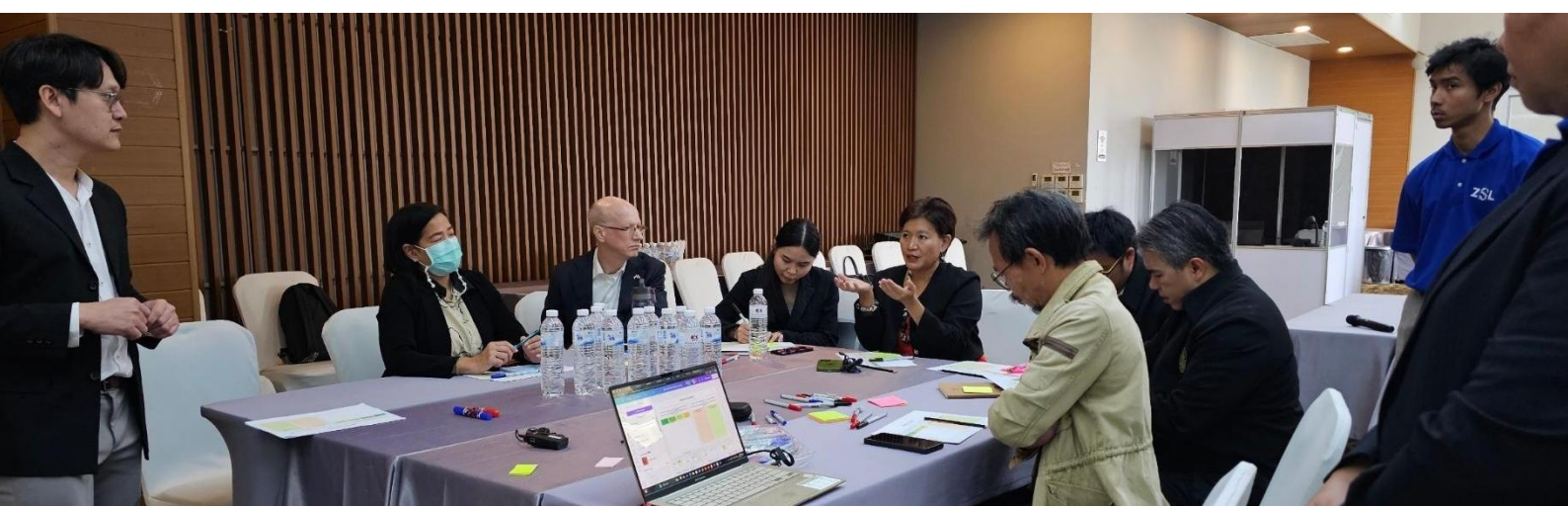
Thailand

Thailand has explored various crop and livestock insurance programmes since the 1970s, but many of these have been discontinued due to high administrative costs and loss levels. Currently only one national insurance agricultural scheme is active, covering damage to rice and maize from natural disasters, pests, disease, and elephants, but it has limited penetration in high-HEC areas and is distributed largely to farmers taking out loans through the Bank of Agriculture and Agricultural Cooperatives (BAAC). In 2019, the Ministry of the Interior established a compensation and assistance fund for victims of events classified as disasters including drought, flood, landslides, and elephants. The fund covers crop damage, property damage, and human injury and death from elephants. However, the scheme has suffered from significant delays verifying and disbursing claims, lack of clarity and transparency, and low payout amounts, with many engaged farmers unable to access compensation despite growing levels of HEC.

In 2024, the Department of National Parks, Wildlife, and Plant Conservation (DNP) tasked a Subcommittee under the House of Representatives with reviewing and proposing amendments to regulations, criteria, and compensation measures for people affected by wild elephant incidents in Thailand and assigned the Thai General Insurance Association (TGIA) to develop a comparative insurance model. The subcommittee recommended specific criteria tailored to HEC including new compensation rates that better reflect actual economic losses and include both crop damage and opportunity loss (income lost over multiple recovery years) for 20 crops. The new criteria also allow compensation for partial damage, improving procedures to make assistance faster and more accessible, and enhanced inter-agency coordination for verification and assessment. The TGIA's insurance model integrated the new compensation criteria minus opportunity loss, which is not typically covered under insurance schemes, and the estimated annual cost of the compensation and insurance schemes was similar. The DNP opted for the compensation scheme because of the greater coverage parameters, whereby farmer registration was not required, partial damage is eligible, and more crops are covered. However, administrative delays persist under the new compensation scheme, as the DNP must still await budget approvals from the Ministry of Interior before disbursing payments.

From 2024–2026, ZSL simultaneously conducted a feasibility assessment of HEC insurance for Thailand including multi-stakeholder feedback, and designed and costed a pilot scheme for the Salakpra Conservation Landscape HEC hotspot with Risk Shield Insurance Consultants. After presenting the results to the DNP and securing interest, ZSL and Risk Shield are now designing a national crop insurance scheme and exploring pathways for premium co-financing and mitigation tools including sugarcane sector engagement and HWC outcome bonds.

Multistakeholder insurance workshop hosted by ZSL in 2024. Photo credit: ZSL Thailand.



Mexico

The Livestock Insurance Fund for Predators (FAG) was developed in Mexico in 2008–2009 through collaboration between the Commission of Natural Protected Areas (CONANP) (particularly the Directorate of Priority Species for Conservation), the Jaguar Expert Group, the Ministry of Agriculture, Livestock, and Fisheries, and the National Confederation of Livestock Organizations (CNOG), which is composed of 800,000 producers who pay compulsory membership fees that finance various insurance schemes. The FAG initially supported any livestock producers, regardless of livestock association affiliation, and covered cattle, horses, and pigs from predation by wild predators and feral dogs. Payout amounts, estimated annually, aimed to cover approximately 60% of the live market value of affected livestock.

The scheme currently operates at a reduced scale. From 2009 to 2019, the scheme was financed by CNOG membership fees and federal government contributions and served at least 2,000 small producers. However, between 2019 and 2021, the federal government discontinued part of the funding, leading to coverage and eligibility changes including reduced claims per producer and limiting coverage mostly to Livestock Associations members. The scheme is now financed exclusively through CNOG and compulsory membership fees paid by producers affiliated with Livestock Associations. Despite renewed government environmental interest, whether public funding for FAG will be reinstated remains unclear. Research shows the scheme has not significantly changed producer behaviour or livestock management practices in some regions. Clearer regulations on minimum livestock management conditions could promote good husbandry, address conflict drivers, and reduce moral hazards. Information exchange between insurers, communities, and implementers remains limited, and financial sustainability should be explored through private sector co-financing and potential federal collaboration. Digital technologies, alternative verification methods, and streamlined claims processes could improve remote service delivery and participation.

The fund operated most effectively when there was cooperation among productive sectors, environmental authorities, academia, and civil society. However, government transitions have constrained long-term operation and raised questions about financial sustainability and sustained behavioural change towards wild predators. Policy discontinuity – in Mexico as elsewhere – places rural producers and biodiversity on unstable ground between conservation goals and shifting national priorities.

Puma on a trail within a ranch near cattle. Despite repeated sheep predation by this individual, the farmer refrained from retaliation after receiving compensation through the FAG, with camera traps installed by field technicians to collect evidence for the insurance claim. Photo credit: Mariam Weston-Flores.



Mexico insurance scheme – criteria alignment

Criteria	Details
<i>Collaborative product design</i>	The scheme was designed with limited HWC data at the time. Community and livestock sector perceptions were considered, but not systematically or methodologically. CONANP initially played a key supporting role in negotiations and communication with decision-makers, and in building trust across sectors. However, responsibility now rests solely with CNOG. The scheme has been combined with other CNOG insurance schemes available, such as those covering extreme drought and livestock diseases.
<i>Sufficient finance to develop a business case</i>	The scheme was originally financed by CNOG with premiums subsidized by the federal government. Between 2019 and 2021, the federal government discontinued support after budget reductions. Currently, premiums are financed exclusively through CNOG resources and compulsory membership fees paid by producers affiliated with Livestock Associations. While CNOG membership is not required for small-scale producers to receive insurance coverage, this financing structure limits the scheme's operational capacity. There is currently no clear indication of reinstating public funding for FAG, and no cost-sharing mechanisms have been explored.
<i>Clear guidelines and regulatory oversight</i>	Until approximately 2021, FAG was fully supported by the government. Financing for the premiums was secured through an institutional agreement between CNOG and the Mexican federal government. However, government decisions beginning in 2019 reduced transfers to trust funds, which affected government contributions to CNOG.
<i>Policyholder trust and awareness</i>	Due to previously unmet commitments, producers distrust processes proposed by organizations or institutions, especially government. Claims criteria are clear, but information is not readily available or presented through appropriate channels. Producers often seek guidance from environmental and livestock institutions lacking this information. Early communication workshops were effective but not sustained, and scheme awareness remains limited in many regions. Much information dates to materials developed by CONANP pre-2018, with only a subset of producers currently accessing the scheme.
<i>Quick and accurate verification of damage</i>	Official reporting requires the completion of time-consuming and inefficient paper-based forms. Insurance adjusters typically take 3-5 days to respond to predation events due to staffing constraints. In some areas near protected areas, local biologists provide rapid responses within 24 hours despite not being part of the insurance fund. Predation evidence must be formally documented, and the carcass of the animal left undisturbed until the adjuster arrives to conduct an in-person check.
<i>Prompt and fair payment</i>	Payment amounts are transparent and typically disbursed between 20 and 30 days. Payment amounts are estimated annually, with the aim of covering approximately 60% of the live market value of the affected livestock species.
<i>Risk mitigation and monitoring</i>	The scheme does not include formal incentives or mandatory damage-prevention conditions to reduce moral hazards. Compensation is provided regardless of whether preventive measures or minimum livestock management practices are in place. No consistent monitoring of scheme satisfaction, emerging risks, or HWC rates is currently in place. However, one producer can only benefit twice a year from the insurance, regardless of CNOG membership although there is no limit to the number of affected livestock per claim.

Lessons learnt

At this point in time, it is not clear whether insurance is as a whole a more effective and efficient method of offsetting the costs of HWC damage compared to compensation. Notably, most insurance scheme case studies reviewed are not “true” insurance schemes, but rather operate as enhanced compensation schemes or subsidised insurance schemes and sometimes lack any conditions designed to reduce moral hazards (e.g. eligibility conditional on demonstrable crop protection being in place). Unlike traditional insurance schemes which are designed as profit-generating products, these schemes typically operate as a public good. This is largely because smallholder farmers cannot afford the full costs of premiums, so the schemes typically have their premiums paid by governments or through cost-sharing mechanisms with NGOs or other donors rather than by the beneficiaries. In this context, **government buy-in** and the presence of **regulatory frameworks** for legal oversight of public-private models were identified as a key factor for success, with pilot schemes being instrumental for providing proof-of-concept. Where small-scale pilots have proven to be effective and legal regulatory systems are in place, governments have demonstrated willingness to adopt enhanced compensation schemes that take advantage of digital technology to improve claim validation and the speed and transparency of payments (as in Kenya), wholly subsidised premium based insurance schemes (as in China), or automatic premium payments through compulsory membership fees (as in Mexico).

Insurance schemes or improved compensation schemes must be **co-designed** with the needs and priorities of all relevant stakeholders in mind. Insurance companies – if involved – need to see a sound business model with relatively low risk, economies of scale, and a clear and reliable financing stream for premiums (i.e. beneficiaries who can afford to pay or committed civil society donors or governments). Governments want to see schemes that are cost-effective and comparable to existing compensation schemes, and which can be implemented under current regulatory frameworks. Communities want to see fair and timely payouts that reflect the reality of HWC and do not exclude the most vulnerable. For example, in China, insurance companies distribute payouts for wildlife damage to beneficiary farmers on behalf of local government policyholders. The insurance company does not necessarily make money from the insurance, but by supporting a project of government concern, the company can establish cooperative relationships with local governments. This can help the company secure other potentially more profitable insurance programs from the government in the future, such as critical illness insurance, agricultural insurance, and government vehicle insurance.

Comprehensive HWC data are essential for accurately estimating the costs of an insurance scheme – particularly for setting appropriate premium levels – and for securing sufficient and sustainable funds if the premiums are to be subsidised by donors (civil society, private sector, or governmental). However, contrary to common perceptions, many insurance companies do not require at least ten years of data to estimate risk and premiums. Actuaries have been able to design and price insurance schemes using as little as two to three years of systematic HWC data (as in the case of Indonesia). Where comprehensive and systematic HWC data are not available, shorter-term data collection and community surveys can provide the necessary data until such mechanisms are in place. However, standardizing data collection and ensuring systematic and accurate collection will not only help inform design and financing of the scheme but also provide a means to monitor changes in conflict hotspots as well as emerging risks.

Remaining challenges

Financial sustainability

Insurance schemes are constrained by the need to develop an approach that is financially viable to insurance companies and policyholders. Most HWC-affected individuals cannot afford commercial premiums, and asking poor, conflict-affected communities to pay for or contribute to premiums raises equity concerns (i.e. it is unfair to ask farmers to pay for damage done by wildlife owned by the State) and risks reinforcing poverty. While some communities have expressed willingness to contribute to premiums (e.g. Nepal, Thailand), the non-random nature of HWC would inevitably result in voluntary enrolment only by high-risk households with sufficient means to pay, resulting in higher premiums for individuals compared to group insurance policies. In cases where formal schemes have been adopted and launched (e.g. China), premiums are financed entirely by government budgets. However, several case studies describe struggling to obtain buy-in from the governments for covering insurance premium costs where they are more expensive due to lack of data (e.g. Malaysia) or where coverage parameters are more limited than comparable compensation schemes (e.g. Thailand). Without such committed funding, insurance companies are rarely willing to take on HWC insurance as the premiums typically exceed community willingness-to-pay (e.g. Indonesia). Unfortunately, government budgets for such schemes are typically neither large nor reliable, and highly vulnerable to shifts in political priorities (e.g. Mexico).

Further, insurance schemes typically become more viable (profitable and affordable) as the number of policyholders increases and risk is spread over larger areas. This is challenging as insurance companies may not find small-scale pilots financially attractive, whereas governments may struggle to cover premium costs at larger scales. Bundling insurance for multiple products (i.e. crops, property, and injuries/death as in China) may incentivize wider-scale adoption while using parametric insurance (as explored in Zambia) can proactively address synergistic risks such as HWC and climate change. Partnerships and cost-sharing between sectors – including private-public partnerships and co-financing from agriculture or tourism beneficiaries – can make premiums affordable, though this remains undemonstrated beyond microinsurance schemes (Mishra et al. 2003). Such co-financing mechanisms are currently being explored in Thailand through private sector engagement (e.g. the sugarcane industry) and HWC bonds, but access to alternative financing is highly context-dependent and will require country-level assessments.

It is clear then that a major question remains about the sustainability of insurance schemes. This question of sustainability also applies to enhanced compensation schemes, which at the very least need to demonstrate that they are less burdensome on government coffers than regular compensation schemes.

Avoiding moral hazards

Insurance or compensation alone will not reduce damage, though by mitigating its impact it may reduce conflict over that damage and the wildlife that causes it. Combining insurance or enhanced compensation schemes with active mitigation interventions such as guarding, fences, or other deterrents as a condition of cover can reduce damage and help secure buy-in from insurance companies, donors, and government agencies as effective mitigation measures will reduce payouts. However, verification of guarding or other mitigation measures can be challenging, especially for night guarding, and risks perpetuating social inequalities where low-

income farmers and their family members do not have the means to implement farm-level mitigation strategies, or if they do, they then suffer various opportunity costs (e.g. foregoing opportunities to work away from their farms).

Where premiums or compensation payments are covered entirely by governments, simultaneous investments in landscape-level mitigation strategies – such as early warning systems, semi-permanent fencing, trenches, and ranger-led rapid response teams – can manage risk while reducing claims, would serve to benefit insurance companies but the financial benefit to governments is not clear and in fact the purely monetary cost of investing in landscape level mitigation measures may exceed any savings from reduced claims.

Also of concern is that none of the schemes covered in this report have yet published data on levels of damage or conflict, levels of stakeholder satisfaction, or levels of retaliatory killing or damage to wildlife habitat following implementation of the schemes. It is vital that these measures of the schemes' effectiveness or otherwise are evaluated to inform decision-making.

Way forward

While HWC insurance may not be as clear a solution to the challenges of conventional compensation schemes as hoped by many practitioners, these case studies do highlight some of the strengths of insurance-based (true and subsidised insurance) and enhanced compensation schemes. Moreover, insurance and enhanced compensation mechanisms should be viewed as one component of an integrated coexistence strategy rather than a standalone solution. Investments in communication, data systems, community trust-building, and risk mitigation are essential complements to these financial mechanisms. Long-term success will depend on blended financing models, strong government leadership, and adaptive governance frameworks that respond to ecological and social change.

Well-designed insurance and enhanced compensation schemes, especially those with conditional linkages between payouts and risk reducing behaviours, can reduce the socio-economic burden of HWC, improve tolerance for wildlife, and support conservation goals more broadly. However, realizing this potential requires sustained political commitment, cross-sector collaboration, formal evaluation, and a clear recognition that rural communities should not bear the costs of global conservation priorities alone.

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AB Entheos aims to make microinsurance and inclusive finance accessible, practical, and impactful for vulnerable populations since 2014. The organization has supported the design and implementation of human-wildlife conflict insurance and compensation schemes in Kenya, Zambia, Namibia, and Tanzania.



Pertubuhan Pemuliharaan Biodiversiti Sabah, or “Seratu Aatai” aims to create a society that is willing and capable to take responsibility to protect and coexist with Bornean elephants. Seratu Aatai works with different stakeholders who are directly or indirectly involved in elephant conservation at the national and international levels to develop a strategy for elephants that balances the needs of elephant conservation and socio-economic benefits.