DCAF Geneva Centre for Security Sector Governance

Stocktaking of security sector roles in climate and environmental security

Report on the Philippines

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Contents

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Acronyms

AFP	Armed Forces of the Philippines
ASEAN	Association of Southeast Asian Nations
BFAR	Bureau of Fisheries and Aquatic Resources
BFP	Bureau of Fire Protection
CCA	Climate change adaptation
CENRO	City Environment and Natural Resources Office
CLUP	Comprehensive land use plan
CSO	Civil society organisation
DDR	Disarmament, demobilisation and reintegration
DENR	Department of Environment and Natural Resources
DILG	Department of the Interior and Local Government
DOST	Department of Science and Technology
DRR	Disaster risk reduction
DRRM	Disaster risk reduction and management
DRRMC	Disaster Risk Reduction and Management Council
DRRMO	Disaster Risk Reduction and Management Office
IFI	International financial institution
IUU	Illegal, unreported and unregulated
LGU	Local government unit
NBI	National Bureau of Investigation
NDRRMC	National Disaster Risk Reduction and Management Council
NDRRM Fund	National Disaster Risk Reduction and Management Fund
NDRRMP	National Disaster Risk Reduction and Management Plan
NICA	National Intelligence Coordinating Agency
NOAH	Nationwide Operational Assessment of Hazards
OCD	Office of Civil Defense
PCG	Philippine Coast Guard
PCTC	Philippine Center on Transnational Crime
PER	Public Expenditure Review
PNP	Philippine National Police
QRF	Quick Response Fund
SALT	Sloping agricultural land technology
SSG/R	Security sector governance and reform
UNODC	United Nations Office on Drugs and Crime

Executive Summary

The Philippines is facing a range of climate and environmental risks that directly affect human security. Climate change is intensifying existing disaster risks in an active geological region known as the Pacific Ring of Fire, causing volcano eruptions, tsunamis and earthquakes, and the region faces other disaster risks, including typhoons and tropical storms, floods, droughts and landslides. At the same time, the urban areas and settlements in the Philippines are located in such a way that ca 74% of its population is exposed to these different kinds of hazard. Moreover, the country is one of the world's 17 megadiverse countries, with many endemic species of flora and fauna, giving it a critical role in the protection of global ecosystems.

However, human activities, including environmental crime, are further undermining protective ecosystem services and destroying carbon sinks, contributing to the cycle of degradation and accelerating the effects of climate change. From rising sea levels and changing rainfall patterns, which cause both water scarcity and seasonal flooding, to widespread pollution and the destruction of natural resources, such as coastal ecosystems and tropical rainforests, the combined effects of climate change and human pressures on the environment are threatening to undo the economic development and peacebuilding gains achieved, including by the various peace processes.

There are important links between disaster risk reduction (DRR) and environmental harms. Illegal logging and land-grabbing, leading to deforestation, significantly increase the risk of mudslides. Unregulated waste disposal and mining not only affect soil and water resources, but also have serious public health consequences and ultimately increase flood risks. This directly affects the health and resilience of available ecosystem resources for farming and fishing, driving migration and urbanisation.

While many of these risks require a response that extends well beyond the security sector, security institutions have an important and perhaps not fully recognised role to play in this context.

As climate change increases the risk of flooding, mudslides and other disasters, the role of the Philippine security sector institutions, especially the Armed Forces of the Philippines (AFP), in DRR and in supporting efforts of the Office of Civil Defense will be increasingly important. The well-established area of DRR offers a valuable opportunity for institutions to work closely with communities and local government to better analyse and mitigate the risk of both sudden and slow-onset disasters.

Photo: DCAF

Likewise, the National Bureau of Investigation's Environmental Crime Unit, in conjunction with the Philippine National Police, the Philippine Coast Guard and in some instances the AFP, has the potential to play a more active role in preventing and prosecuting cases of environmental crimes and other forms of harm to the environment. Community-based organisations, such as forest rangers and guards of fishing grounds (Bantay Gubat and Bantay Dagat), are an interesting example of how communities and volunteers can complement state capacity, but they require additional institutionalisation and professionalisation.

It is worth noting that the government response to these risks (or lack thereof) and failure to address corrupt practices that directly exacerbate an already critical context clearly affect the population's perceptions of the state. Overall, this stocktaking study has found significant potential for conflict prevention, peacebuilding and security cooperation programming to improve service delivery of security institutions with regard to mitigating the impact of climate and environmental risks on communities and the environment, strengthening social cohesion and contributing to sustainable peace. There are multiple affordable opportunities for security institutions to strengthen their role in addressing human security needs with regard to both protecting communities from disasters and protecting the ecosystem services that communities rely on. In doing so, there is a strong opportunity to contribute to social cohesion.

This stocktaking study is part of a study across four countries, aiming to identify entry points informing security sector governance and reform (SSG/R) from the climate and environmental security perspectives. While international partners in their programming tend not to fully maximise potential in this area, findings place security sector roles in climate and environmental security at the heart of the triple nexus of humanitarian needs, development and security. Moreover, working on this nexus is relevant in the context of the sustaining peace and prevention agenda, as agreed under the Sendai Framework for Disaster Risk Reduction and the Paris Agreement's Global Goal on Adaptation.

In addition to the more practical recommendations for international partners and the Government of the Philippines that are included in the report, several of the conclusions have broader relevance for SSG/R, prevention, peacebuilding and stabilisation programming across a range of regional, environmental and security contexts, and have been further explored in the other countries in the stocktaking study.

Findings

- The Philippines is among the countries most vulnerable to climate change, and at the same it is one of the most relevant countries in terms of preserving biodiversity. It faces a range of multidimensional risks at the intersection of environmental and human security, and across the two functional areas of DRR and environmental protection explored in this study. These risks interact in a way that continues to increase the vulnerability of Filipinos to the human security consequences of the changing climate.
- Environmental harms, such as pollution, illegal logging and mining, and violations of existing legislation are sometimes inextricably linked with community livelihoods, especially of indigenous peoples and those depending on agricultural livelihoods. Even if law enforcement in this area is strengthened, harm to the environment is unlikely to cease without a focus on creating alternative, sustainable options for income generation.
- Strengthening environmental governance is also crucial because of the strong links between harm to the environment, corruption and organised criminal activities, including transboundary activities such as illegal, unreported and unregulated fishing, smuggling of resources and waste dumping.
- A variety of civilian and security sector agencies are involved in DRR and combating environmental crime, with mandates that are not always entirely clear or distinct. Moreover, when it comes to issuing environmental licences and permits (for mining, logging, construction, etc), it is not always clear which agency's licensing takes precedence over the other.
- While challenges around natural resource management and corruption remain, particularly in the Mindanao peace process, there are several promising entry points for environmental peacebuilding. Examples include the transformation of decommissioned rebels into forest and guards of fishing grounds in the disarmament, demobilisation and reintegration (DDR) process, security sector agencies proactively working with communities on fostering climate-smart livelihoods, simultaneously building trust and countering extremist narratives, and community-based environmental protection actors such as forest and guards of fishing grounds.

Recommendations

- **Recognising and reinforcing climate and environmental security roles:** the international community should recognise and engage with the security sector in mitigating climate and environmental risks as a top priority:
  - The security sector's climate and environmental security roles should be integrated into **bilateral partnerships**, including bilateral development cooperation, climate partnerships and defence cooperation. This means, for example, mainstreaming DRR and environmental protection into capacity-building efforts and when delivering equipment.
  - International and regional cooperation to tackle environmental crime should be strengthened, recognising the importance of preventing non-criminalised forms of environmental harms. A legal approach that creates strong disincentives and enforcement mechanisms through criminalising offences (in addition to civil offences) has been shown, in combination with leveraging technology for customs controls and fraud detection, to be a promising entry point in this regard.
  - The knowledge base should be expanded, including with analysis, data and evidence on climate security and environmental crime and SSG/R, thus enabling future programming to be better equipped for delivering dividends for people, planet and peace.
- **Corruption and accountability:** corruption and lacking accountability in the security sector is an enabler and a driver of environmental crime; it also prevents effective disaster prevention and can lead to unequal access to disaster aid. Investment in

capacities for tracking financial flows can increase transparency and at the same time enable better forward financial planning. Special attention needs to be paid to direct links between the security sector and private sector actors with interests in primary sector industries. A principled approach to supporting security sectors in these roles is paramount for maintaining the credibility and legitimacy of the international community and partner states.

- **Environmental degradation through waste disposal and pollution:** waste disposal and pollution are human security issues that are likely to become more important as pressures on ecosystems from climate change and demands for natural resources including land continue to increase. Polluted land and water affect public health and decrease food and water security, and the value chain linked to waste management is prone to illicit and illegal activities that can have transnational dimensions. In a global context of tightening environmental regulations, security institutions in many regions may also need to strengthen their understanding of the transnational dimensions of illegal waste disposal.
- **Shifting from response to prevention:** a longer-term focus on **prevention** is critical for DRR and environmental protection and for preventing conflict. **Risk-informed urban planning and land use planning** can make a significant contribution to mitigating future disaster risks but is not always well integrated with DRR functions or enforced. The widespread destruction of ecosystems is a **slow-onset disaster**, with potentially catastrophic consequences for future food and water security, and also increases vulnerability to other hazards by damaging nature-based solutions for mitigating climate and disaster risk. Climate and environmental risk data can provide useful insights for **forecasting security risks**, such as social unrest, crime and conflict.
- **Coordination and integration:** because of their high level of complexity, tackling environmental crime and analysing disaster risks require an approach that is **horizontally integrated between sectors** (in particular, close coordination is required between security institutions and environmental and other government agencies that may not traditionally work together) and **vertically integrated between levels of government** (which is of particular importance in decentralised systems). Furthermore, at the community level, disaster risk and environmental harm are often linked with different vulnerabilities, such as migration and livelihood pressures. Thus, solutions that focus solely on enforcement are unlikely to succeed.
- **Comprehensive international partner approaches:** working effectively on DRR and environmental protection, and more broadly on the triple nexus of humanitarian aid, development and peace, also requires development actors to view these issues as linked and act accordingly. This means developing innovative funding instruments that can cover several hitherto separate sectors and policy areas, and having the ability and willingness to engage with a wide range of national counterparts across sectors.
- **Private sector:** environmental protection and DRR pose many questions, and law enforcement and private actors can benefit from each other's expertise and cooperation in pursuing sustainable business exploitation. Companies need to be seen as important stakeholders to discuss environmental governance with and have a considerable interest in good governance. At the same time, where companies exploit weaknesses in the system and build unequal relationships with local and national security sector actors, or local, regional and national elites, security sector actors can be complicit or co-beneficiaries. Those working on oversight and accountability efforts to expose such exploitative and environmentally destructive schemes, such the media and civil society, especially environmental defenders, who often become targets, deserve special attention and protection.

Photo: DCAF

- **Supporting capable communities**: especially in resource-constrained, remote and fragile contexts, communities play a key function **as a first line of defence**. This requires a realistic analysis of what communities themselves can do as a first line of defence, and where security and government institutions must play a role. Working with volunteers can multiply state capacity but requires the right institutional and oversight framework.
- **Sustaining peace**: climate change has been mostly studied as a risk multiplier for conflict. However, there are a variety of promising opportunities to leverage climate and environmental issues and SSG/R for sustaining peace:
  - The responses of states, including security sector actors, to climate and environmental risks, and the way in which they engage with communities and individual citizens on these risks, have a great impact on communities' perceptions. This is an opportunity to strengthen trust in the state, break extremist and rebel narratives and foster reconciliation between groups. Programming should fully leverage this through the inclusion of peacebuilding expertise and methodologies.
  - In addition to addressing questions of environmental governance and natural resource management in peace processes, DDR, military integration and rightsizing processes offer opportunities to re-hatting ex-combatants and former soldiers within the security sector into climate and environmental security roles. This in turn provides them with opportunities for sustainable livelihoods, draws on their experience and strengthens environmental protection and DRR.
  - Supporting volunteers and civic engagement, and applying confidence-building methodologies for joint training programmes, are opportunities for building trust between groups and the community and security sector.

SSG/R needs to mainstream climate and environmental risks so security sectors can help protect people, planet and peace

Photo: DCAF

1. Introduction

Background

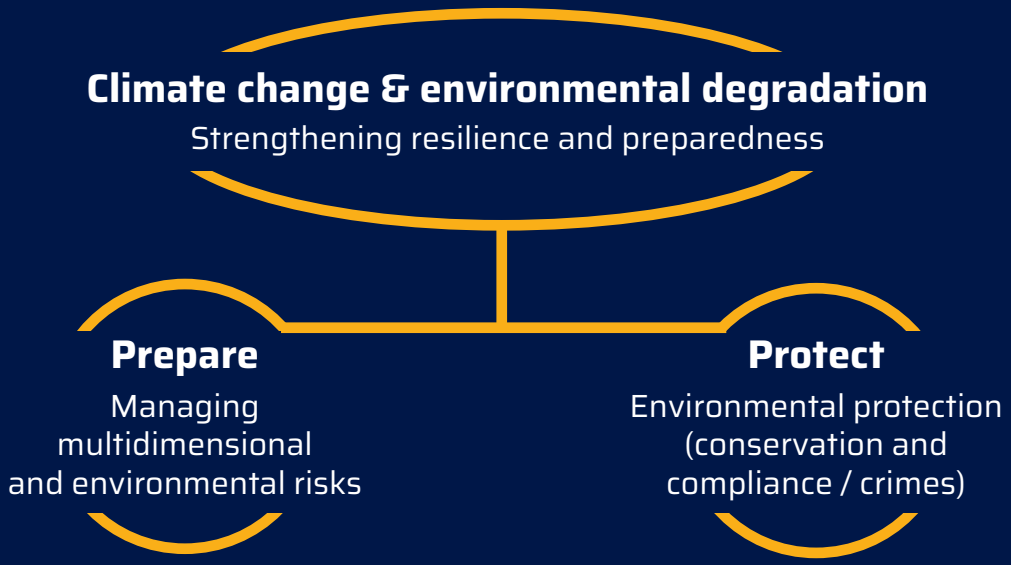
This report is part of a larger stocktaking study funded by the Governments of Germany, the Netherlands, Sweden and Switzerland that explores the potential roles of the security sector in supporting communities vis-à-vis the impacts of climate change and environmental degradation.

It combines two areas of interest for the security sector when looking at current and future environmental issues in the four countries. These are (i) the preparation for natural disasters and (ii) environmental protection, with a specific focus on environmental crimes and conservation (see Figure 1). These are not only interlinked but also relate to questions of conflict, instability, governance and fragility, and hence (human) security.

This report presents findings from the Philippines. The insights are complemented by similar reports for the Occupied Palestinian Territory[1], Brazil[2] and Sierra Leone[3]. The four country reports will be combined in a report that outlines relevant insights, lessons learned, (in)effective arrangements and recommendations for the security sector and security sector governance and reform (SSG/R) programming. This has been done using a two-pronged approach – scrutinising the security sector on the one hand and the community perspective on the other – and is based on the hypothesis that a well-governed, legitimate and accountable security sector can help to break cycles of environmental degradation and conflict.

The connections between climate change adaptation (CCA), disaster risk reduction (DRR) and environmental protection have been underlined in various fora[4]. DRR and CCA reduce vulnerability and enhance societal capacity and resilience. Good coordination and the division of labour between and within institutions in charge of DRR and CCA activities can increase the effectiveness of responses, particularly in more vulnerable contexts[5]. For instance, intact ecosystems can mitigate climate change impacts and disaster risks, underlining how a healthy environment contributes to lowering the cost of disasters and the responses to them[6]. The nature of land use affects not only livelihoods but also local climatic phenomena, such as precipitation, wind patterns and temperature[7]. Moreover, a healthy environment provides society with ecosystem services, which includes contributions by nature to human life, such as through the provision of goods (such as food and fuel), regulation (for instance, of air quality and mitigation of disasters) and support (such as providing living space, enabling biological diversity) and/or through serving as cultural inspiration (for instance, through tourism, spiritual well-being)[8].

Figure 1: Two pillars of action for the Security Sector in relation to climate change and environmental degradation.



Methodology

The question at the core of the study is 'How can international and national partners realise the full potential of the security sector in CCA, DRR and environmental protection through concrete SSG/R programming?'

To answer this question, the study analyses the role of the security sector in the field of climate change and the environment through multiple steps and from various perspectives. The main goal was to focus on four dimensions of the two main pillars: DRR ('prepare') and environmental protection ('protect'). The four dimensions were (i) context, (ii) coordination and integration of different entities, (iii) capacities and (iv) impact on communities, social cohesion and peacebuilding more generally.

The team[9], as a first step, engaged in desk research to learn about the social, meteorological, political, legal and environmental situation in the Philippines. This involved reviewing academic articles, media reports and publications by international organisations and government sources. The second step consisted of field research in Metro Manila and General Santos City. The research involved semi-structured interviews with security and environmental institutions, international and (local) government representatives, and civil society. The research combined around 35 interviews (with group sizes ranging from one to seven) and eight focus group discussions[10]. This approach ensured that both top-down and bottom-up insights were incorporated.

Climate change risks and vulnerabilities in the Philippines

Disaster risks and vulnerabilities

The Philippines' geography as an archipelago to the east of the Eurasian continent (stretching over 1,800 km from north to south) makes it one of the world's most disaster-prone countries. The World Risk Report 2022 ranks the Philippines (again) as the country with the highest disaster risk of all United Nations Member States[11]. It is in an active geological region known as the Pacific Ring of Fire, which is prone to volcano eruptions, tsunamis and earthquakes, and other disaster risks, including typhoons and tropical storms, floods, droughts and landslides[12]. The annual average loss in public and private assets exceeds 1% of gross domestic product per year[13]. Since 1990, the country has faced 565 such disasters, killing over 70,000 people and costing USD 23 billion in damages[14]. Several factors make the Philippines highly vulnerable: inadequate housing materials and construction methods, poor drainage systems and underdeveloped infrastructure for sanitation or solid waste management, among others[15]. In addition, around 74% of the population is exposed to different kinds of hazards, such as floods, typhoons, earthquakes and tsunamis[16]. Continuing urbanisation has resulted in growth in informal settlements and unplanned city expansion[17]. Informal settlers, often migrants from rural areas, often build settlements in low-lying areas prone to flooding, including on beaches and riverbanks.

Finally, land rights are also a highly contentious issue in the Philippines, increasing vulnerabilities with regard to climate, disaster and environmental risks. Large swaths of land with unclear land titling have enabled the expansion of agricultural land, construction and industrial activity in protected and disaster-prone areas (including informal settlements), and in areas that provide essential protective ecosystem services[18]. Monocropping or deforestation (for land clearance, timber or charcoal) can increase disaster vulnerability, for instance to landslides and flooding.

At the same time, the Philippines is on the global front line of climate change, ranking high in climate vulnerability indices[19]. While some uncertainty remains about how climate change is currently affecting the Philippines and how it will continue to affect the Philippines, many of the natural hazards and environmental harms listed above are expected to be exacerbated by climate change. Already, typhoons, flooding, landslides and heatwaves have become more frequent and intense[20]. Rising temperatures pose the risk of deadly wet bulb air temperatures[21]. The intensification of extreme weather means that the Philippines is at risk of increased water scarcity inland, while it simultaneously faces sea level rise and increased flooding. Droughts are generally linked to El Niño, which is expected to intensify because of climate change. Metro Manila, one of the largest urban areas in the world, is for instance rapidly sinking as a result of excessive groundwater extraction and fast sea level rise[22]. The prevalence of the diseases malaria and dengue is expected to grow, and there have already been leptospirosis outbreaks after heavy flooding. In addition to affecting human health, waterborne diseases are also expected to affect livestock health, which, in combination with crop diseases, floods and droughts, could affect food security[23].

Environmental harms and crimes

The Philippines is one of the world's 17 megadiverse countries, with many endemic species of flora and fauna, giving it a critical role in the protection of global ecosystems. It also has one of the world's longest coastlines. This makes the Philippine ecosystem globally important to protect. The country also heavily relies on its coastline and healthy coastal ecology for economic activities and livelihoods.

A variety of environmental crimes and harms are prevalent in the Philippines, frequently multiplying the risk of pre-existing natural hazards and climate change impacts.

Pollution: Illegal waste dumping and insufficient waste management are prevalent in the Philippines: the Philippines is the third biggest source of plastic pollution globally. Of its 2.7–5.5 million tonnes of plastic production, 20% ends up in the natural environment[24], which means that ca 0.75 million tonnes of plastic enter the ocean every year. This makes it one of the highest contributors to worldwide marine plastic pollution (totalling 4.8–12.7 million tonnes annually)[25]. Increasing amounts of foreign hazardous waste also end up in the Philippines[26]. Additional factors contributing to pollution are dysfunctional sewage systems (for example the contamination of 58% of groundwater with coliform bacteria in 2009 due to livestock production), emission-intensive transportation and the lack of standards and enforcement for industry pollution[27] (such as waste dumping by canning companies and other industries into rivers and the sea).

Pollution causes significant environmental harm, such as groundwater contamination, and poses severe disaster risks. One consequence is that drainage systems become clogged or are made less efficient by solid waste such as plastic. During high-intensity rains, which are common in the Philippines, especially during tropical storms, the overwhelmed drainage capacity can quickly intensify flooding. Moreover, pollution negatively affects water, air and soil quality, and can threaten human security by posing health, economic and food security risks as well as disaster risks. Highly polluted areas have previously been closed for tourism, leading to significant economic damage and employment losses. Furthermore, air pollution in the Philippines is estimated to have caused between 11,000 and 27,000 deaths and cost the Philippine economy an estimated USD 2.5–6 billion in 2018[28].

Mining and logging: Illegal logging is another major source of environmental degradation in the Philippines. While there are no clear statistics on the magnitude of illegal logging, forest cover in the Philippines decreased by 50% in the 20th century and by a further 7.2% since 2000[29]. Currently, the annual decline in forest cover amounts to 1.9%[30]. While there are no unequivocal statistics on the magnitude of illegal mining, the Philippines has an untapped potential of ca USD 850 billion in mineral resources (such as copper, cobalt, gold nickel)[31]. Illegal mining practices are often conducted on land claimed by indigenous peoples and can have severe environmental impacts, such as deforestation, land degradation and pollution[32]. More impactful in scale is illicit mining and logging, where weaknesses in the legal system and its enforcement are exploited by means of corruption and clientelism to gain valid resource exploitation permits.

Photo: DCAF

In addition to impacts such as the decline in biodiversity, the loss of carbon sinks and the reduction in ecosystem services valuable to local communities and their livelihoods, illegal and illicit logging and mining are also a driver for landslide prevalence. Thousands of Filipinos have died in landslides that can be linked to such practices[33]. The effect of ecological degradation is twofold in this context: climate change increases the frequency and intensity of typhoons to begin with, and deforestation increases the frequency and intensity of the resulting flash floods and landslides.

Wildlife Crimes: The Philippines is a consumer, source and transit point for illegal wildlife trade. As it is one of the world's most biodiverse countries, many of the trafficked animals are listed by the International Union for Conservation of Nature on the Red List of Threatened Species. Among the most trafficked animals are different species of turtles, pangolins, parrots, mynahs and geckos. Illegal wildlife trade in the Philippines has an estimated value of around USD 1 billion per year[34]. It contributes to the decline in biodiversity, it can threaten biosecurity by spreading zoonotic diseases and it affects local livelihoods related to livestock breeding[35].

Illegal, unreported and unregulated (IUU) fishing in the Philippines was estimated to amount to around 113,000 tonnes in 2020, which converts to around USD 1 billion[36]. In 2019, illegal fishing from municipal and commercial fishing grounds constituted 27–40% of the total yield[37]. IUU fishing in the Philippines causes damage to critical coastal reef habitats, resulting in further loss of biodiversity, and threatens the livelihood and food security of local communities[38].

Illegal and illicit land (use) conversion refers to the changing of the current physical use of a piece of land to some other use, defying regulations defining land uses. Driven by rapid urbanisation, population growth and speculation, the average landholding of farmers declined from 2.84 hectares per farm in 1980 to 1.29 hectares in 2012[39]. Land-grabbing, land subdivision and subsequent unsustainable land use practices (such as building construction, agriculture, mining) can threaten biodiversity and increase disaster risks. It often goes hand in hand with illegal logging or illegal mining and violations of the rights of farmers, traditional fisherfolk or indigenous communities, and has the potential to fuel social conflicts[40].

Conflict patterns

In addition to climate and environmental risks, the Philippines faces several internal armed conflicts, such as the separatist movement in the south of the Philippines (Moro conflict), Islamic terrorism and an ongoing communist guerrilla insurgency. This exacerbates and multiplies other risk factors.

Conflict patterns in the Philippines illustrate the complex relationship between climate change, environmental degradation, and conflict and instability. When it comes to rainfall patterns, for instance, research shows that linkages exist between poorer agricultural production and more conflict incidents[41]. While above-average rain during the dry season is associated with fewer conflict incidents, more precipitation in the wet season or less in the dry season can fuel conflict. Together with the War on Drugs, all these links are expected **to amplify existing inequalities and vulnerabilities**, and disproportionally affect indigenous communities, the urban poor, subsistence farmers and women (for instance through increased occurrence of gender-based violence).

For example, Mindanao, one of the focus regions of this study, is the region in the Philippines that is most vulnerable to climate change[42], possibly intensifying grievances. Moreover, many of the internally displaced people in Mindanao (110,279 as of September 2022[43]) reside in vulnerable wetland areas and are dependent on fishing for a living, underlining their vulnerability to climate change[44]. Finally, the governance of the large mineral deposits (including gold, copper and natural gas in the Bangsamoro Autonomous Region in Muslim Mindanao) is among the most contested issues of the peace process.

Photo: DCAF

2. Prepare

The Philippines is an active member of international and regional initiatives on DRR. These include the Sendai Framework for Disaster Risk Reduction and the Asia-Pacific Action Plan for its implementation[45], the Paris Agreement, the Sustainable Development Goals (and previously the Millennium Development Goals), the Association of Southeast Asian Nations' (ASEAN) Agreement on Disaster Management and Emergency Response Work Programme 2021–2025[46], and the Asia-Pacific Economic Cooperation Disaster Risk Reduction Framework[47]. DRR is a topic that is well developed and on which the state has substantial capacity. DRR is well integrated into the Philippines' broader development visions of the AmBisyon Natin 2040 and the Philippine Development Plans for 2017–2022[48] and 2023–2028, and also in the "National Security Policy 2023-2028"[49] and the National Climate Change Action Plan[50].

Disaster risk reduction structures and stakeholders

The DRR architecture is characterised by a high level of decentralisation, which is meant to enable local service delivery. It is based on the Disaster Risk Reduction Law of 2010 (Republic Act 10121)[51]. This law introduced a much more prevention-oriented and highly decentralised DRR approach. The system is led by the National Disaster Risk Reduction and Management Council (NDRRMC), which is also responsible for disaster risk reduction and management (DRRM) planning and coordination[52]. Proposals by lawmakers to create a new department of disaster resilience are still pending Congress approval[53].

National government and disaster risk reduction

The **NDRRMC** is an agency with strategic DRR policymaking powers, and has a key advisory, coordinative and supervisory function within the Philippine DRR system. It brings together cabinet-level government stakeholders and representatives from the private sector, professional organisations and civil society organisations (CSOs). It is chaired by the Secretary of National Defense. Its mandate stems directly from Republic Act No. 10121.

The **Office of Civil Defense (OCD)**, a civilian entity under the Department of National Defense, is the main executive and advisory body of the NDRRMC and the coordinating body for DRRM at the national and regional levels[54]. It is responsible for writing and implementing the National Disaster Risk Reduction and Management Plan (NDRRMP), identifying hazards and risks in consultation with key stakeholders, reviewing local and regional DRRM plans, formulating standard operating procedures, coordinating local government units (LGUs) and establishing training institutes to train DRRM staff[55].

Photo: DCAF

Several other security sector actors are also mandated to play a role in DRRM. The **Armed Forces of the Philippines (AFP)** leads the response cluster for search, rescue and retrieval operations in times of disaster and contributes to the clusters for logistics, law and order, emergency telecommunications, health and international humanitarian assistance. The **Philippine National Police (PNP)** leads the cluster for law and order, but also supports the clusters for health, protecting internally displaced people, emergency telecommunications, logistics, and managing the dead and missing. The **Bureau of Fire Protection** and the **Philippine Coast Guard (PCG)** supports each of the above and is also part of the response[56]. Another security sector actor worth mentioning is the **Department of Environment and Natural Resources (DENR)**, given its law enforcement mandate concerning forests, fisheries and nature reserves both on land and at sea. It is tasked with ensuring that ecosystem integrity is improved and sustained as part of the prevention and mitigation thematic area of DRRM[57]. **Civil society** also plays a very active role in DRR in the Philippines. There are several CSOs that play a big role in humanitarian relief efforts, such as the Philippine Red Cross and the Roman Catholic Church's humanitarian department.

Local government and disaster risk reduction

As mentioned, the Philippine DRR system is highly decentralised and uses bottom-up approaches, in line with Sendai Framework recommendations. The LGUs play a central role in the Philippines' DRR approach, complemented by regional and national government entities on an as-needed basis[58]. Each of the approximately 1,500 LGUs has a local Disaster Risk Reduction and Management Office (DRRMO) and a Disaster Risk Reduction and Management Council (DRRMC), which are responsible for coming up with their own DRRM plans. Their composition largely mirrors that of the stakeholders at the national level, with only small differences at all levels of government, including at the barangay[59] and regional levels[60]. LGUs' responsibilities include assessing vulnerabilities and communicating with and educating government staff and the population, to coordinate with other government bodies, and providing shelters.

Service delivery

Prevention: risk analysis, information sharing and vulnerability reduction

Following good DRR principles, prevention activities aim to reduce the likelihood of a disaster event occurring or the severity of an event[61]. The prevention pillar is led by the Department of Science and Technology (DOST). The 2020–2030 NDRRMP, for example, defines national-level intended outcomes for disaster-resilient human settlements and livelihoods, risk financing and insurance, and good early warning systems.

At the core of traditional security providers' current DRRM mandates is security and logistics provision during disaster responses, something that Philippine security sector actors such as the AFP, PNP and PCG are well trained in and equipped for. Security sector actors are much less involved in prevention, although they do occasionally engage in coastal clean-up drives and reforestation efforts, and the demolition of building structures at riverbanks and coastal areas.

Actions that security sector actors can take to strengthen and protect nature-based disaster mitigation mechanisms (for instance protecting mangroves and hillside forests, and also clearing drainage blockages and managing water flows or enforcing zoning laws in disaster-prone areas) are not consistently integrated into the Philippine DRRM approach.

Risk analysis: interviewees mentioned risk analysis usually as part of preparedness rather than prevention. Several agencies, led by the OCD at the national and regional levels, are involved in mapping hazards and vulnerabilities to inform disaster risk assessments[62]. At the national level, the risk assessments produced by Project NOAH (Nationwide Operational Assessment of Hazards)[63] are frequently referred to, and its functioning and the broad awareness of its availability seems to be a good practice to highlight. Project NOAH was referred to by most interviewees as a vital resource for their own hazard-mapping approaches, ranging from military officers to barangay staff and civil society representatives, and for informing the Climate Information Disaster Risk Assessment. The data can produce digital hazard maps that are openly accessible, including through an app. Concerns were voiced that data are lacking granularity in some regions, and the government stopped funding the project in 2017 (it is now continued by the University of the Philippines). Although this arrangement (supported by private actors) seems to work well, it does leave a crucial disaster risk analysis tool outside state funding and control.

From interviews with representatives of the AFP, PNP and National Intelligence Coordinating Agency (NICA), and also of the OCD and LGUs, it seems that traditional security providers have little involvement in these risk assessments. The granularity levels of risk assessments differ per LGU, although staff and capacity shortages at the barangay level were mentioned as a more general issue by several interviewees. Barangays conduct their own risk assessments using the climate and disaster risk assessment tools provided as part of DRRM planning. There are additional organisations, such as the Maritime Observatory, which have their own data and methodologies. The community representatives interviewed did not mention being involved in risk assessment and analysis (as recommended in the Sendai Framework), although DRRM awareness is widespread at the community level.

Vulnerability reduction: several concrete areas to reduce vulnerabilities were frequently mentioned by a variety of interviewees: (i) infrastructure investments, such as deepening rivers, building dykes, the regular cleaning up of silted rivers and fixing sewage systems; (ii) ecosystem protection and restoration, such as protection or restoration of forests, wetlands, mangroves and coral reefs; (iii) better waste management as flood prevention; and (iv) addressing the number of people living in disaster-prone areas, often in informal settlements.

The importance of nature-based solutions means that issues surrounding zoning ordinances, land use planning and land tenure bear a close relationship to DRR. Locally, there are some concrete examples of the introduction of nature-based solutions: for example, General Santos City's City Environment and Natural Resources Office (CENRO) introduced sloping agricultural land technology (SALT) to reduce landslide risks[64]. However, the enforcement of land zoning is complicated by its

vulnerability to abuse and social conflict. The process of obtaining permits can be prone to corruption (partially because official procedures and administrative procedures are not always clear), and issues of large-scale land-grabbing can be particularly divisive. One additional factor that drives conflict, particularly in Mindanao, is that permits can contradict claims laid to land by indigenous people, recognised in the Indigenous Peoples' Rights Act of 1997.

The resettlement of people living in disaster-prone areas is also a highly contested issue, and mandates (such as PNP and AFP) to engage in resettlement and demolitions of buildings are not clear. Conversations with civil society and communities suggest that resettlements seem to mainly affect informal settlements and not commercial constructions or better-off residential areas. They suggest that this can fuel tensions and conflict, especially in areas with pre-existing tensions such as Mindanao.

Finally, regulations around waste management are also not (equally) enforced. This can have large consequences, such as when industrial or agricultural pollution contaminates drinking water or fishing water, when plastic waste from junk shops[65] in informal settlements clogs drainages and worsens flooding, and when the waste dumps' structural integrity itself poses risks. While the (informal) recycling industry contributes to sustainability, waste picking on landfills is prohibited. Large landfills pose risks because they can collapse, their large methane emissions can cause fires and explosions, health risks are associated with long-term exposure and many waste pickers are child workers, which is tacitly tolerated by the barangay tanods, who are supposed to enforce regulations[66].

Preparedness and planning

Budgeting for disaster risk reduction: in terms of good practices, the government's strong and visible commitment to DRR translates into legally enshrined, dedicated budgetary allocations for DRR and a 2015 National Disaster Risk Financing and Insurance Strategy, adopted by the Department of Finance. The strategy outlines the different available funding mechanisms along the DRR cycle (hazard monitoring, exposure minimisation, relief and reconstruction, risk transfer). Interviewees across all levels of government displayed a broad awareness of the (legal) necessity to earmark money for potential disasters.

The instruments mentioned most frequently in interviews with representatives of the OCD, security providers and LGUs were the two main instruments of pre-arranged funding for the relief and reconstruction phase. The **National Disaster Risk Reduction and Management Fund** (NDRRM Fund) provides funds for relief and rehabilitation of affected communities, and the agency-specific **Quick Response Fund** (QRF) allocates pre-disaster or standby funds to immediately assist areas stricken by disaster[67]. This is complemented at the local level by each LGU having a local DRRM fund. Republic Act No. 7160 of the Local Government Code of 1991 requires LGUs to set aside 5% of the estimated revenue for unforeseen expenditures arising from calamities[68], to cover relief and rehabilitation activities. It also points to little awareness of funding sources for prevention and preparedness.

Photo: DCAF

Nevertheless, interviewees and a recent public expenditure review (PER) by the World Bank identify some remaining challenges. At the national level, the NDRRM Fund, in particular, is characterised by a lengthy approval processes and delayed disbursements. Neither the NDRRM Fund nor the QRF allocation is based on fixed amounts based on last year's allocation; they instead use estimates based on past expenditure data and disaster predictions[69]. In cases of disaster, additional budget allocations can be requested by agencies[70].

The PER describes the fact that the Philippine budget for DRR is highly decentralised, with most budgetary items lodged in different agencies' own budgets[71], as another challenge. The funding is fragmented (there are 43,000 LGU DRRM funds) and therefore there is little transparency and oversight over total spending. This leads to questions from the World Bank's PER of DRR about the efficient use of the limited DRRM resources and possible corruption[72], of which there was also some indications in focus group discussions and interviews.

Moreover, the link between DRR funding and local tax revenue means that the level of resourcing is dependent on the local economy and less on actual needs. Disaster vulnerability varies within the Philippines, as does economic performance. Since the two are not necessarily linked, there can be a disconnect between needs and resources.

Key actors such as the AFP do not have their own QRFs (although the Department of National Defense does); however, they do have access to an annual allocation from Congress for responses to extreme weather events and an operational budget through the OCD. This affects the AFP's disaster preparedness and response: any unused spending results in a lower allocation in the next year; however, topping up once the allocation is spent is difficult and time-consuming. This is different from QRFs, which go by five-year accumulative cycles and are a set percentage of revenues. This can complicate disaster response operations if, for instance, fuel is needed. It also fits the broader pattern of the AFP's partial dependence on other agencies and actors, such as large corporations, to provide resources. These links can be problematic if they develop into patronage or favouritism. Moreover, this practice poses a question with regard to available funding for preparedness and planning activities. One possible remedy is the plan presented by some AFP interviewees to earmark 10% of the AFP budget for DRR, although this could not be verified.

Planning: mirroring the decentralised DRRM structures, there are several planning efforts at the national, regional and local levels, including contingency planning for specific types of incidents. The NDRRMP under OCD leadership is the roadmap for achieving the National Disaster Risk Reduction and Management Framework's policy goals[73]. LGUs are responsible for developing local DRRM plans, overseen by the Department of the Interior and Local Government (DILG). Beyond the OCD, security sector actors seem to be playing a small role in disaster planning efforts.

Similar to budgeting, despite the Sendai Framework calling for multi-hazard risk analysis and data sharing, planning is often not data driven because of a general lack of granular data and lack of integration into different analyses (such as combined risk maps and vulnerability drivers, such as the Department of Social Welfare and Development's human recovery needs and social impact assessments). Even in instances where data were available, they were not accessible, for example by keeping historical data in a physical rather than a digital archive. This makes it difficult to assess long-term trends and make evidence-based policy.

Effective integrated planning and data sharing is further hindered by the fact that the Philippine DRRM system is based on administrative divisions that often do not follow natural regions (if anything, the opposite is true, for instance when rivers are used as boundaries). This means that disaster planning requires collaboration between different LGUs and regions, which is a difficult task for the OCD to coordinate. Interviews with representatives of the OCD and CENROs and experts point towards potential for the OCD to play a bigger role in the coordination of planning. This collaboration is more institutionalised and common in disaster response than in prevention and planning.

In a parallel but theoretically linked process, comprehensive land use plans (CLUPs) are developed by LGUs using DRRMO hazard maps in their approach to land use zoning[74]. This is also a recommendation within the Sendai Framework. In practice, however, only a bit more than 37% of LGUs have an up-to-date CLUP, and slightly more than 50% of LGUs have an outdated CLUP. Close to 10% of LGUs have no CLUP at all (as of May 2023)[75]. Several interviewees brought up how sensitive land rights issues are, partially because of the links between corporations, local politics and enforcement actors in making and enforcing CLUPs. Interviews with experts and focus groups pointed towards the vested interests in the status quo of some powerful actors as negative incentives for enforcing CLUP provisions relevant to DRRM (for instance in countering deforestation).

Capacity-building: capacity-building efforts involve several institutions and target a broad range of actors, ranging from DRRMO staff to security sector personnel

and the community at large. The OCD currently provides extensive training opportunities to national, regional, local and barangay government officials, including security institution staff (such as the AFP) based on needs assessments and requests by regional offices and LGUs. This conforms with the recommendations of the Sendai Framework. Training areas include first aid, rescue and contingency planning. The DILG provides capacity-building support to the PNP and LGUs, especially on planning. Several interviewees mentioned high staff turnover at the local level as an issue, with turnover closely linked to local electoral cycles. This limits institutional memory and forces the DILG to embark on continuous retraining, without the chance to institutionalise strong technical expertise. While DRRM training for both AFP and PNP appears to focus on disaster response, several interviewees noted that, for both actors to understand the linkages between climate change, environmental protection and disaster prevention, more sensitisation and capacity-building was needed.

Labour force and equipment: at the national level, the DILG maintains data, assists LGUs with their DRR resources and has ministerial control over large actors, such as the PNP and Bureau of Fire Protection (BFP). Local DRRMOs' responsibilities include managing available capacities and maintaining an inventory of equipment[76]. OCD actors (responsible for overseeing the labour force and equipment at the regional and national levels) mentioned maintaining a similar system and integrating AFP resources. The lack of reference to a comprehensive database, including also actors such as the PCG reporting to the Department of Transport, points to a data gap when it comes to an inventory of available resources. While there are some local initiatives where LGUs informally coordinate with one another, this data gap, combined with the relative weakness of inter-regional or provincial disaster planning, points to possible difficulties in moving LGU resources between provinces or even neighbouring LGUs.

The gaps in cross-LGU disaster prevention and preparedness planning can be potentially problematic, as LGUs often have limited control over and knowledge of national agencies' staff and equipment, and these actors are not always involved in local DRRM planning efforts. This means that maintaining the visibility of and coordinating or accessing national security sector actors' logistical, medical, intelligence, engineering, and search, rescue and retrieval resources can be challenging at the local level.

A good practice highlighted by local-level security providers in interviews was engaging in a range of activities to ensure operational readiness. Examples that were named include annual local exercises involving the AFP, DRRMO and the Red Cross to simulate different scenarios, and the PNP conducting annual checks of security arrangements such as evacuation centres, cameras, lights, early warning systems and essential equipment.

Photo: DCAF

Early warning and communication channels: early warning is given significant attention and interviewees reported that significant progress has been made in the last few years, but gaps remain. The Philippine Atmospheric, Geophysical and Astronomical Services Administration oversees monitoring and issues warnings at the national level, with the OCD sending alerts to regional governments, which in turn forward these alerts to LGUs. However, the infrastructure to monitor for extreme weather situations is not equal throughout the country. Respondents mentioned that there are few monitoring stations in Mindanao. To compensate for this, barangays and LGUs improvise, and devise their own warning systems that involve communities and local government in DRRM at low cost. Such warning systems include river watch teams, social media chats, dedicated volunteers who knock on all doors in a street at risk and sea level rise monitoring facilities staffed by trained volunteers.

Such positive initiatives at the local level (mentioned in interviews) include chat groups on sharing risk information and alerts between LGUs, barangays, security sector actors and the OCD. These forms of communication were reported to work well, with multiple focus group participants confirming that they indeed receive text alerts or contribute. From interviews and focus group discussions, there appears to be a strong awareness of the early warning systems in place and the role of the DRRMOs, even at the neighbourhood level.

Response

Procedural issues: LGUs lead response efforts, complemented by resources from higher levels of government if needed. The affected jurisdiction activates their contingency plans, following their standard operating procedures detailing exact roles and responsibilities, trigger the Incident Command System[77]. The local DDRMO, in the case of a looming incident, declares an emergency and coordinates with different actors in relation to starting their preparations, including possible deployments of security personnel, such as the AFP and PNP. Whether or not the OCD also comes in for coordination at the provincial, regional or national level, and at which level the Operations Centre and the Incident Command Post are located[78], is determined by the scale of the incident (for instance if it affects more than one LGU). The interviewees generally seemed to agree that the reorganisation of this system through Republic Act No. 10121 in 2010 was a significant improvement.

While the AFP leads on search and rescue efforts, the PNP provides overall security (as leader of the law and order cluster) and, if there is a need for evacuation, ensures that citizens have moved to the evacuation centres. This can lead to tensions with community members who prefer to stay in their homes. One apparent fear that focus group discussions and interviews touched on is the fear among informal settlers that evacuation might in fact be an act of expulsion.

According to interviewees, decentralisation poses the risk of leaving several gaps in the coordination of disaster response. The fact that security sector actors are organised at the national level means that LGUs cannot issue commands to them as national agencies. This necessitates additional request and approval loops, slowing response times, although bigger cities that are also a seat of regional government can have better access to national resources. One good practice to highlight at the local level is the initiative to put in place informal arrangements, especially where there are good personal relationships between LGU and AFP staff, but several interviewees called for a formal agreement between local DRRMOs and the AFP. Another challenge mentioned by interviewees is that, in severe emergencies, the civilian DRRMO structures may be so heavily affected themselves that they become unable to function at all. Civilian authorities might require rescue services themselves, suffer from power outages or have reduced mobility, impairing their ability to manage the crisis. The security providers interviewed noted that, in practice, this means that a disaster response might be driven by security providers in the first days, until civilian authorities have been able to restore their functioning.

Photo: DCAF

Loss and damage assessments and provision of relief goods: to determine relief needs, local DDRMO staff assess the immediate needs after a disaster; this information is then forwarded to barangays for verification, before being shared with the Department of Social Welfare and Development, which assigns resources accordingly. Interviews with members of communities, local security providers and CSOs suggested that such damage and loss assessments and relief goods' distribution can be vulnerable to corruption, as beneficiary lists can be tweaked by local politicians in favour of their clients. In light of this, interviewees also mentioned the absence of formal criteria or clear lists of compensation entitlements, making disaster relief decisions rather arbitrary. Security providers such as the AFP and PNP support the relief phase logistically with the transport and provision of goods and people. Interviewees also suggested that pre-deployed military staff can help speed up the damage and needs assessment (for instance using military intelligence agents).

Access to remote and conflict areas: a separate issue in the Philippine DRRM response is the role of ongoing conflicts. These can pose a major obstacle to the access and security of disaster response operations. Multiple interviewees from the AFP and PNP stated that armed security perimeters are necessary for disaster response operations, especially in remote areas, because of recent cases of attacks on service personnel during disaster relief operations. Accounts by social and youth workers affiliated to the Catholic Church confirmed this, and noted that they felt much safer working in remote areas without an AFP or PNP presence for fear of attacks. This poses additional challenges for a rapid disaster response.

Social cohesion and peacebuilding

Communities as partners in disaster risk reduction: civil society is represented in Philippine DRRM across all levels, and CSOs such as the Roman Catholic Church and Philippine Red Cross are very actively engaged in DRRM. Volunteers are a well-established part of the Philippine DRR system, multiplying state capacity effectively. Therefore, the Philippines provides a strong example of broad societal engagement in DRRM, as recommended in the Sendai Framework.

Traditional security providers do not seem to work directly with volunteers much, although there were some examples of successful cooperation. In General Santos City, for instance, PNP motorcycle officers worked with community motorcycle enthusiasts in an initiative called 'Metal Horse'. The initiative equipped the enthusiasts with first aid equipment, allowing them to be rapidly deployed to assess situations in remote terrain not accessible by other vehicles.

Perception of the state and trust: DRRM in the Philippines is closely tied to the reputation of its main security providers and therefore to broader discussions about state legitimacy.

This impact on perceptions of the state and security sector was confirmed in focus group discussions with communities. Respondents pay attention to who helps them to prepare for and during emergencies, and who were perceived as less helpful. Discussions with civil society and focus groups pointed towards actors such as the church and non-governmental organisations, the PCG and the AFP generally being perceived as more supportive in disasters than for example the PNP. Security sector actors realise the potential of a strong DRRM response in (re)building community trust. Many community interviewees also noted the potential to use DRRM as a way to restore and improve public trust in security sector actors. This is especially relevant in regions where state legitimacy has long been contested, such as in Mindanao.

Communities in informal settlements that build in disaster-prone areas are vulnerable to forced evictions. Legally, this needs to be a last resort option, using proportionate force and in combination with suitable relocation options. However, discussions with civil society and focus groups and media reports point towards these conditions not always being met. Relocation options are described as not always suitable, for instance when relocating communities' livelihoods are threatened by being sent away from their main economic activity[79]. This can decrease trust and reduce the willingness of communities to cooperate with the police in other areas, especially if the communication with communities is unclear and security sector actors use disproportionate force. Fear of eviction has additional implications. Community focus groups suggested that some informal settlers avoid raising safety issues, such as waste disposal or fire risks, out of fear of gathering attention and risking eviction.

Security providers acknowledged the importance of community outreach and sensitisation efforts to ensure awareness and support for DRR measures (such as resettlements). Some also saw it as an opportunity for (re)building community trust. A promising example included an LGU in Metro Manila organising gamified DRR activities together with the PNP's community relations unit and the BFP, to sensitise the community about their role in DRRM. Although the extent to which such activities are carried out elsewhere is not clear, the more socio-economically disadvantaged barangays visited for this study reported having training and education on DRRM. That DRRM can function as a community outreach tool is also exemplified by the fact that in General Santos City DRR falls under the PNP's Department for Police Community Relations.

Prepare - Findings

Service delivery

The Philippine DRR system in general is well established and has a strong and recently updated policy framework and approach that combines many stakeholders, with clear roles and responsibilities for different clusters. The OCD has a clear coordinating role, while the system is decentralised, and DRRMOs are established at every level of government. Different dedicated budget lines are available, and the population is well informed about what is expected of them during disasters and are prepared for such events. Yet, improving the aspects outlined below could lead to better security service delivery during crises.

Decentralisation and coordination: the disconnection between national government agencies and LGUs is less prominent in response, but visible in prevention, planning and preparedness. This makes it more difficult to plan DRR resource availability across levels, and gaps in disaster data mean that some areas are underserved. In addition, prevention measures are less effective if confined to administrative (rather than natural) borders. The OCD's role to coordinate prevention at the regional level can be further explored. It is responsible for strengthening and coordinating risk assessments, prevention, planning and preparedness efforts. Of specific interest would be the institutionalisation of ecosystem-based coordination and DRRM prevention planning, beyond administrative boundaries.

Budget design: the impact and positive example of having a strong legal framework and financial strategy, and allocating significant resources to DRR on a consistent basis, is weakened by the fragmentation of budgets and the lack of a tracking mechanism. This makes it is difficult to have efficient and data-driven budgeting. Increasing transparency of DRR funding for the AFP and PNP, which remain particularly opaque, can enable more efficient and data-driven financing. This provides an approach to decrease the dependency of some security providers (such as the AFP) on other actors, notably the private sector, for funding DRRM components of their work.

Data: a dense but fragmented landscape of actors and their analysis frameworks translates into a fragmented approach to data collection, management and sharing. This impacts service delivery in several ways. First, it can lead to a duplication of efforts and missed opportunities to generate composite and complete risk data that would enable early warning/early action. Second, it increases the risk of gaps in data coverage, especially when it comes to preparing for calamities that affect multiple LGUs. Finally, this fragmentation affects budgeting and hampers the efficient use of resources. One way to respond to this risk is to establish national-level data collection and knowledge generation entities that would collect information according to standard data collection and sharing procedures.

Coordination: while disaster response efforts are well coordinated, preventive efforts by security sector providers and environmental protection actors remain weak and could benefit from multiple venues for optimisation and effectiveness. Different actors (for instance the PNP, AFP, civil society) now pursue individual efforts on issues such as reforestation or plastic clean-ups, but coordination with other bodies (such as the DENR) could help to enable a more concerted effort that follows a more strategic, needs and evidence-based approach, integrating the latest risk analyses.

Capacity and training: capacity-building efforts for security sector actors such as the AFP, PNP and PCG mostly target their response capabilities and preparedness. This reinforces the sector's operational strength in terms of human resources and equipment. Tailored capacity-building activities for prevention and planning would allow these actors to be more actively involved beyond response mechanisms, for example through building skills on risk monitoring and opening venues for more consistent engagement in local, regional and national DRRMCs.

Prevention

Prevention is not as strongly reflected in policy prioritisation and security sector roles as response and preparedness are, even though prevention is the core goal of international norms including the Sendai Framework.

Risk analysis and data: DRRM and conflict risks are not perceived to be systematically linked by security sector actors, including the intelligence community. This is a missed opportunity for utilising available disaster and climate risk data for security hotspot analysis, prevention and anticipatory actions. Data on threats such as climate change impacts, natural disasters and environmental degradation to rural livelihoods could provide valuable insight for security and crime forecasting, by detecting possible grievances (for instance surrounding land use), rebel narratives of disenchantment, and large forced migration movements (including subsequent pressure on urban areas from this through growing informal settlements, community tensions, crime, radicalisation and social unrest).

Land use planning and nature-based solutions: nature-based solutions and environmental protection play a minor part in security sector strategy, planning and operations. Beyond a general acknowledgement that ecosystem protection can help prevent disasters[80], this seems to be due to a mixture of a lack of awareness and lack of prioritisation by senior command. There appears to be a sense that environmental issues are not core tasks for the security sector, or that they are 'luxuries. The resulting focus on immediate risks and responses becomes a liability for tackling slow-onset disasters such as climate change and pollution. Investing in raising awareness among enforcement actors on the benefits of environmental protection and nature-based solutions as cost-efficient and effective vulnerability reduction strategies might change this attitude and increase willingness to enforce CLUPs, zoning, pollution and other regulations.

Social cohesion and community perspectives

The main security sector actors, including the PNP, AFP, BFP and PCG, all realise that a strong response to DRRM is a way to gain trust from the population, strengthen social cohesion and prevent violent extremism. On the flipside, the absence of these services, widespread corruption and unequal access to services and relief goods can potentially reinforce existing grievances that feed rebel narratives, driving recruitment into armed groups and radicalisation.

Several areas could serve as further entry points for security sector actors. Their presence in rural areas, for instance, presents an opportunity to contribute to more equal coverage of and access to DRRM services. Consistently enforcing disaster prevention regulations around logging, mining, land use and waste can help security providers (re)gain trust from communities if they remain sensitive to socio-economic vulnerabilities and livelihood pressures. Finally, there is an opportunity to further support existing efforts to work with affected communities and especially volunteers in a structural and confidence-building manner.

However, security providers face reputational and community trust risks when they engage in clashes around evictions and demolitions of informal settlements[81]. Dialogue with affected communities and their representatives for the definition of suitable relocation sites, plans and processes, and the proportionate use of force during relocation are of key importance for a community's cohesion, safety and peace.

Photo: DCAF

3. Protect

As demonstrated above, environmental protection and nature-based solutions have great potential to mitigate climate change impacts and disaster risk in the Philippines. This stocktaking study analyses the role of the security sector beyond what can strictly be considered an environmental crime. It also looks at detecting and preventing a wider range of practices that are harmful to the environment and detrimental to human security. The combination includes a wide range of (non-) criminalised activities, such as illegal land conversion, deforestation, waste dumping, IUU fishing, mining and wildlife trading.

Stakeholders

Environmental protection in the Philippines is highly decentralised and involves a wide range of stakeholders across sectors and levels of government, related to different laws[82].

The main agencies in charge of environmental protection on land and water are the **DENR** and the **Bureau of Fisheries and Aquatic Resources (BFAR)**. Both agencies heavily rely on and coordinate with traditional security providers. The DENR and BFAR do not yet have their own enforcement capacity, nor do they carry weapons, even though their various specialised bureaus conduct investigations, gather evidence and file cases in court[83]. The DENR has an interim law enforcement office, the Environmental Law Enforcement and Protection Service[84], and there are pending legal initiatives in the Philippine Congress to create an environmental protection and enforcement bureau[85]. However, in practice, most law enforcement is carried out through the deputization of other actors, such as the **police, armed forces, coast guard, National Bureau of Investigation (NBI) and local government.**

The Philippine Operations Group on Ivory and Illegal Wildlife Trade is an award-winning[86] inter-agency team that includes stakeholders from the DENR, NBI and police, under the DENR's lead[87]. The mandate of the **Philippine Centre on Transnational Crime (PCTC)**[88] covers environmental crime, but according to staff interviewed, the PCTC has not worked on this despite acknowledging the transnational dimension of the illegal trafficking of wildlife, crops, minerals and metals. The **NBI's Environmental Crime Division** specialises in environmental and wildlife crimes and is an important enforcement actor for high-profile and organised environmental crime[89]. The **PNP** as the main law enforcement agency is responsible for enforcing environmental laws (including at sea, where its Maritime Group is very active in environmental law enforcement), often in close collaboration with the DENR. In practice, however, interviewees suggest that the PNP plays a more complementary role unless explicitly asked to be deputised by the DENR[90]. **NICA** coordinates the intelligence collection activities of various government agencies, which can also relate to organised environmental crime[91].

LGUs are co-responsible, with the national government, for managing and maintaining the ecological balance by implementing and enforcing environmental laws and policies[92], and issuing local environmental ordinances. CENROs, the local implementing arms of the DENR, oversee local environmental laws[93]. CENROs can deputise other security sector actors, such as the armed forces, police and coast guard, for enforcement support. They are assisted by the **Bantay Dagat** (guards of fishing grounds) and **Bantay Gubat** (forest guards). These community-based environmental policing personnel help compensate for the lack of resources to enforce environmental laws and are appointed locally[94]. This might explain why the total number of these personnel is unknown (estimates mention around 2,000 Bantay Gubat personnel[95] and one unsubstantiated claim mentions 100,000 Bantay Dagat personnel[96]) and why there is no centralised structure to manage them. **Barangay tanods** are enforcement officers at the local level. They are appointed by barangay captains and are tasked with auxiliary law enforcement. Citizen's arrests are possible under the Philippine Constitution, and every citizen can apprehend law offenders under defined conditions[97].

Service delivery

The following three functions relating to combating environmental crime offer a useful framework for analysing the role of the security sector in environmental protection, as well as possible entry points for future reforms: (i) prevention of future harm, (ii) detection of violations and (iii) imposition of sanctions (or other actions) against perpetrators[98].

Prevention of future harm

Legal framework: the increasingly felt consequences of environmental degradation have led to positive changes in the legal and policy framework for environmental protection over the past decades[99]. The 1987 Constitution of the Republic of the Philippines obliges the state to 'protect and advance the right of the people to a balanced and healthful ecology'[100]. The various types of environmental crime are addressed in individual laws and policies that provide the basis for sectoral enforcement. A full analysis of the legal and regulatory framework on environmental harms is outside the scope of this study. However, interviews suggest that some legal grey areas

remain, especially with regard to harmonising national and local legislation and fines.

Sensitisation and awareness raising: many interviewees expressed concerns about the lack of environmental awareness within Filipino society at large. Current awareness-raising activities were said to fall short of sensitising communities enough on the negative environmental impacts of environmental harms, and of shifting the government mindset from short-term gains towards a sustainable use of natural resources. Civil society and especially faith-based organisations play a significant role in this space, with one of the most active and influential institutions being the Roman Catholic Church. This stems from Pope Francis's encyclical *Laudato Si'* (2015), which points to the social effects of climate change and the depletion of natural resources[101]. The Catholic Church has a dedicated ecology department, including many social workers who are actively raising environmental awareness at the community level, and exercises considerable influence at the local and regional levels in its oversight function with regard to the enforcement of environmental crimes and harms.

Beyond civil society, many voices from within the state sector recognise the importance of environmental protection. For example, the National Security Policy identifies climate change and maintaining ecological balance as strategic challenges, moreover it aims to empower citizen organisations in governance and to protect and preserve the country's ecosystems through the sustainable use of resources[102]. An interviewee at NICA noted that NICA is highly aware of the need to include environmental factors in their data collection, analysis and reporting processes. Similar sentiments exist within the AFP, which has a long tradition of being involved in development work and community organising. Some units have begun linking environmental degradation and livelihoods with armed rebellion or social unrest, including community projects aimed at improving their livelihoods and contributing to preventing radicalisation that way.

Understanding root causes for environmental crime: effective crime prevention relies on a solid understanding of the motives for, perpetrators of and root causes of crime. Based on interviews, observations and research, there seem to be three different motives of environmentally destructive activities, in addition to an enabling factor, which is corruption.

Livelihoods. Interviewees at both the institutional and community levels agreed that the majority of environmental crime and harm caused by individuals is driven by poverty and people's need to secure a livelihood. Pressure from population growth, diminishing soil productivity, land-grabbing and decreasing fish stocks is causing migration towards urban centres and informal settlements. This in turn leads to encroachment into protected areas, such as forests and mangroves. Activities such as illegal logging, charcoal making and illegal mining are often the only sources of income for impoverished families. Communities in some informal settlements depend on collecting and sorting illegally dumped waste for their income. Much pollution comes from small-scale producers, such as fisherfolk cleaning boats with cheap chemicals, small-scale farmers overusing fertiliser, herbicides or pesticides, or runoffs from livestock manure. Uncertain land tenure further encourages short-term thinking instead of sustainable land stewardship.

Organised crime. According to interviewees, many environmental crimes are perpetrated by organised (transnational) criminal groups, including criminal and piracy networks. Examples of such crimes are deforestation, mining, pollution of waterways and soil (for instance with mercury as a side effect of mining), (toxic) waste dumping and smuggling, wildlife trafficking and IUU fishing. These networks appear to be well organised and were described as sometimes heavily armed and linked to other activities such as human trafficking and drug smuggling[103].

Businesses. Interviewees agreed that a third group of perpetrators, usually of non-criminal but serious environmental harm, are large businesses and investors, motivated by economic gains. Large mining, logging, tourism or agrobusiness corporations can exploit weaknesses in the legal or regulatory system to gain exploitation concessions. Moreover, the value chain on waste processing from vulnerable garbage collectors to junk shops, to recycling plants, is often opaque and vulnerable to illicit and illegal activities, such as using child labour, forced labour, money laundering and illegal waste dumping. Evidence from focus group discussions suggests that this takes place primarily in areas where the police presence is limited, such as in informal settlements.

Corruption. Interviews with community members, civil society representatives and experts hinted strongly at corruption and patronage networks at all levels of government, including the security sector, complicating the successful enforcement of environmental laws. Environmental protection concerns valuable natural resources, such as water, land, agricultural, forestry, fishery and minerals, which means that the financial stakes are high for politically influential actors. While interviewees mentioned instances of smaller-scale bribing, the main issue mentioned was around the

exploitation of legal grey areas to enable institutionalised and large-scale environmental harm. Interviewees brought up the fact that many agencies in charge of (local) environmental protection, such as the DENR or building offices, are the same institutions issuing permits for construction or mining. This makes them a potential target for interference by third parties. With regard to the main enforcement actors, there are several risks to the impartiality of their enforcement priorities and political interference. First, security sector actors can be dependent on the same political elites (both locally and nationally), whose interests are at stake when environmental laws are enforced. For instance, at the local level, the appointment of Bantay Dagat and Bantay Gubat is usually politically linked to the incumbent mayor of the LGU, with whom their appointment cycles coincide[104]. Moreover, mining is a politically contested topic that often takes place in remote areas prone to conflict. This leads to the AFP and PNP regularly being tasked with providing security to mining and agricultural operations, which can be seen as going against local communities' (including indigenous peoples') interests[105]. Finally, interviewees, confirmed by direct observation, noted that the AFP and PNP can have close ties to the corporations themselves, such as through a funding relationship (for instance vehicles or buildings).

Detection of violations

Mandates – delineation of roles and coordination of responsibilities: interviewees reported a variety of coordination efforts between agencies. Some of these were informal efforts, such as the NBI mentioning close coordination with the DENR, BFAR, police, coast guard, armed forces, customs and port authority, and Mines and Geosciences Bureau. Others were more formalised arrangements, the DENR and BFAR have, for instance, signed a memorandum of understanding to coordinate on enforcing national environmental laws. This includes adopting plans to harmonise interventions and avoid overlaps by jointly operating in areas under both jurisdictions, such as protected mangrove sanctuaries. The BFAR also has a memorandum of understanding with the coast guard, police and navy to provide vessels for joint marine patrols and operations against illegal fishing or trafficking of goods. Different maritime law enforcement agencies are also working on strengthening practical interoperability by conducting joint training activities with the police, coast guard and BFAR. At the local level, there are also promising examples of efforts towards achieving better coordination and collaboration. One such example is the Sarangani Bay Law Enforcement Group, which consists of the local government, coast guard, maritime police and BFAR. The group established a joint protocol for handling cases and a hotline to improve communication.

Yet, many interviewees agreed that coordination is hampered by ill-defined responsibilities between agencies, especially a lack of a clear delineation of lead agencies and command and control structures. This is particularly pertinent in the maritime domain and on non-criminalised environmental harms, for example between the DENR, BFAR, Bantay Dagat and Gubat. With regard to the Bantay Dagat and Bantay Gubat, the lack of institutionalisation, including on reporting relationships, legal mandates, roles and responsibilities and oversight, prevents such clarity (although it also allows a certain degree of flexibility in communities with limited resources). Interviewees from several traditional security providers suggested that they tend to be cautious and try not to overstep their mandate by engaging in environmental protection.

In terms of practical consequences, some interviewees noted that the lack of clear lead responsibility means that marine patrols are often conducted on an ad hoc basis and without clear command and control structures. This creates opportunities for illicit activities, and presents challenges in enhancing data management for better reporting on the extent of illicit environmental behaviours.

Information from interviews suggests that the divide between the national strategic level and the local operational level is another coordination issue. For instance, responsibilities with regard to marine patrols are not clearly delineated between different local and national actors. In some instances, pragmatic solutions to procedural issues have been found. The BFAR is not mandated to enforce fishing rights in municipal waters in accordance with the Philippine Fisheries Code of 1998 (amended in 2014)[106], which was confirmed by interviewees, but the local law enforcers interviewed said that they patrol using BFAR vessels (the BFAR is allowed to assist in municipal waters). Coordination challenges also exist further out at sea between the maritime police, coast guard and BFAR. Overall, effective local enforcement can be hindered by conflicting priorities between local and national agencies. This can also stem from mismatches between assigned responsibilities and allocated resources. Strong national policies and strategic commitments can flounder in the delegation of responsibilities from the national to the local level[107].

Another gap is the lack of a central (electronic) database for permits that can be accessed by all permit-issuing agencies. Not only does this give rise to questions around whose permit has precedence, but it means that for criminal investigations physical checks of permits in the archives of several authorities across different locations are required. This slows down the process of verification or investigation and prosecution, which means that action often comes too late to prevent the

damage caused by the criminal activity, while also taking up a lot of staff time.

Data and awareness: the lack of data makes it difficult to demonstrate the scale and impact of environmental harm. Several actors reported maintaining an individual database on environmental crime and environmental harms, including the maritime police, Mines and Geosciences Bureau, some CENROs and the Bantay Dagat. However, information from interviews, notably with members of the NBI, seems to confirm the absence of a central database for all environmental crimes (and harms). This is partially due to methodological challenges in collecting data on environmental crimes and harms. There is no standardised framework for categorising environmental crimes, confirmed by conversations with the United Nations Office on Drugs and Crime (UNODC). It gets even more difficult for non-criminalised environmental harms (such as illicitly obtained permits), which involve even more actors, without clear reporting frameworks or central instances to report instances of environmental harm to. Several interviewees mentioned that the absence of data makes it difficult to use evidence-based planning to use resources more efficiently and to assess or demonstrate the scale of the problem.

A related issue is the disproportionate order of priority given to environmental harms when it comes to combating their effects. While the most destructive harms against the environment stem from mining, logging, agriculture, IUU fishing, pollution and land conversion, law enforcement attention seems to be mainly on the smuggling of wildlife derivatives. This observation resonates with the international dynamics around wildlife engagement. A follow-up assessment would benefit from further exploring the underlying factors behind this reality.

Capacities and resources: interviews with security institutions, experts and civil society suggest that environmental protection policy objectives and ambitions, for example of the National Security Strategy, do not match the resources available.

At all levels of enforcement, interviewees spoke about the lack of available capacity. This applies to personnel, specialised expertise, equipment and operational budgets. Many noted the lack of prioritisation compared with traditional threats by LGUs and security sector actors as one underlying issue. Interviewees strongly suggest that none of the main enforcement agencies was sufficiently staffed and resourced in this area. In addition to having very small numbers of staff and even less specialised expertise, interviewees pointed towards the absence of operational budgets for environmental law enforcement by the PNP and AFP. This impacts on not only detection but also preventive action, as rapid responses to stop ongoing illicit activities are difficult. In the maritime domain, interviewees highlighted how the lack of equipment causes enforcement gaps, as vessels and surveillance equipment to effectively monitor the large Philippine territorial waters are lacking. Inadequate communications equipment poses an obstacle to quick communications and coordinated action between stakeholders.

Photo: DCAF

There are ongoing efforts to build up specialised expertise to deal with environmental crimes and harms. The DENR and BFAR are for instance providing training to the Bantay Gubat and Bantay Dagat. However, frequent staff rotations and subsequent loss of knowledge are a challenge, and also affect the environmental protection efforts of the armed forces, police and NBI.

Sanctions and remediation

Additional challenges prevent sanctions from becoming effective crime deterrents. These concern the severity of sanctions and procedural issues in the judiciary. Sanctions can include community service, fines, imprisonment, demolition, confiscation or expulsion and resettlement. Interviewees claimed that sanctions against environmental crimes are too low to act as deterrents, if fines are given at all. Local (environmental) ordonnances cannot be fined above 5,000 pesos (approximately USD 90)[108]. Especially for bigger corporations, this makes the fines mere operating expenses. Penalties for the violations of national law or provincial ordinances can differ substantially and incentivise 'venue and penalty shopping' to avoid higher penalties. These legal loopholes can be exploited to obtain construction and plantation permits for protected areas, permits for mining and logging in protected and indigenous lands (both linked to zoning policy and enforcement), or import licences for used goods that are de facto (e-)waste.

In some cases, although the material used for mining is seized and confiscated by the authorities, and legal cases are brought against perpetrators, the deterrence effect is unclear, with new groups of illegal miners being detected in similar areas as the previously found perpetrators[109]. Moreover, despite orders by authorities issued to small-scale miners to leave certain areas, they continue mining there, which could be seen as another sign of the lack of deterrence[110].

In terms of the cross-border trade of (endangered) species, as well as a lack of data on the scale of the problem, there are similar obstacles after a successful seizure, such as low penalties with no deterrent effect[111]. Moreover, the seizure of living animals does not mean that they will survive and can be put back into the wild. Although care centres exist[112], the relevant expertise to correctly identify the species and their natural habitats is sometimes lacking[113].

Environmental remediation was not mentioned by any interviewees.

Social cohesion and peacebuilding

Environmental crime and pollution can decrease human security and be a driver for conflict. The security sector is obviously not the only solution to these problems. However, given the importance of these issues to the Filipino population, there is certainly potential for greater engagement in environmental protection to strengthen trust in security institutions and the government more broadly.

There are three main links between social cohesion and peace, and environmental security: (i) how environmental protection affects perceptions of the state, (ii) environmental degradation as a root cause of conflict and (iii) opportunities for environmental peacebuilding.

Perceptions of the state: focus group discussions point to how the security sector's involvement in environmental protection affects people's perception of individual actors, and by association that of the state and its legitimacy. This can be a challenge and an opportunity from the perspectives of community trust and peacebuilding.

Evidence from focus group discussions and civil society interviews suggests an agreement on the importance of environmental protection, and a positive attitude and expectation towards a stronger effort by the security sector in this area. Even if environmentally harmful practices (such as fishing) are frequently linked to livelihoods, community groups see the necessity of protecting their natural environment and expect the security sector to play their part in it. Communities and civil society also appear to value traditional security providers (for instance police, armed forces) protecting civilian and unarmed enforcement actors in dangerous areas such as illicit mining or logging sites, or areas with rebel activity. However, community members and civil society interviewees spoke about how witnessing environmental offences committed with impunity decreased their trust in the state. This can be especially dangerous in areas where the social contract is more fragile, as in Mindanao.

Community members and civil society are critical of state security providers protecting corporations and their environmentally harmful activities. This was one of the reasons cited for a lack of trust in security institutions locally. Focus group members show some sympathy for individual needs to follow orders, but strongly feel like these orders are influenced by funding and political relationships with corporations.

A major issue in the Philippines that was recognised in interviews with members of CSOs is that environmental defenders are frequently victims of red-tagging[114] and extrajudicial killings[115]. Between 2012 and 2021, 270 environmental defenders were killed in the Philippines, the highest number of any country in Asia and the fourth highest globally; most, over a third, of these killings were linked to the mining industry, followed by agribusiness[116]. This links to the long history and ongoing practice of red-tagging, where activists are labelled as communist and thus associated with the communist insurgency. Consequently, many communities and environmental activists are afraid of actors such as the PNP and AFP. These types of operations can put the security sector's legitimacy in question, and thereby the legitimacy of the Philippine state.

Environmental governance addressing root causes of conflict: climate change, environmental degradation and the management of natural resources are recognised as prominent conflict drivers in the Philippines[117] in the National Security Policy and were also recognised in an interview with senior NICA officials[118].

One aspect of this is the extent to which **illicit income** from environmental crimes funds armed groups. There are different perspectives on this: some interviewees said that armed groups protect logging and mining companies for a share of the profits, while others said that armed groups act in a more protective role towards the environment. Both are to some extent consistent with research on the matter[119].

Security providers are already seizing opportunities for **environmental peacebuilding**, such as the reintegration of former rebel combatants into the Bantay Gubat and DENR's forest protection programme[120]. Experts reported how this has been piloted with the integration of former Republican People's Army rebels who were allowed to stay in their area of operation and carry weapons, while at the same time having a new livelihood by working as forest rangers. Another example provided by experts was a project that integrated former pirates into the Bantay Dagat. These initiatives have mostly taken place on a small scale and are generally not very well known, and so far, a thorough evaluation of to what extent they are successful has not been carried out.

Another potential area of opportunity identified by security providers is around **breaking extremist narratives**. Some security providers are proactively engaging with communities on livelihood issues. AFP interviewees mentioned that an internal AFP study had found that nearly half of rebel recruits joined because of grievances related to poverty and livelihoods. Building on the AFP's long tradition as a development actor, AFP interviewees reported expanding this work to include climate-smart and environmentally friendly agriculture (such as SALT), especially with communities at risk. As it seems to mainly be limited to pilot projects, there are not many systematic data yet on how communities perceive these efforts and to what extent they can strengthen trust in the security sector or prevent or counter violent extremism. It also poses a question regarding what the limitations of security sector actors mandates, roles and responsibilities should be.

Protect – Findings

Enforcement

Innovative community-based approach: the Philippines has pioneered promising community-based environmental law enforcement models such as the Bantay Dagat and Bantay Gubat. They are part of a 'soft' enforcement approach that raises awareness of and provides education on environmental offences, bridging the gap between the LGUs, whose ordinances they enforce, and the communities they are members of. There is also some evidence that this approach increases the self-compliance of potential violators in marine protected areas[121].

While staying conscious of the advantages of not overregulating this model and maintaining a degree of flexibility, their effectiveness and legitimacy would benefit from becoming more institutionalised. Key areas would be developing a clear legal framework and mandate, chains of command and oversight and reporting relationships, and strengthening their professionalism through more standardised recruitment, training, insurance and compensation. This could also be a step towards tackling opportunities for clientelism and corruption.

Prioritisation: with regard to budget, resources and capacities, the prioritisation of more traditional security issues comes at the cost of environmental protection, even though environmental harms can be a direct driver of more 'traditional' security issues. To some extent, this is due to resource limitations and competing security concerns. Both specialised and general law enforcement agencies are facing resource limitations around the number of personnel, dedicated training, equipment and operational budgets. This has implications for the ability to prevent, detect and investigate infringements. In other instances, this is also due to a lack of awareness by senior command, staff and political leaders of why environmental protection matters as a security issue. There are some promising pockets of voices in some

security sector actors that recognise the relevance of environmental and climate risks to their mandates. They miss data and evidence on the extent of the problem (for instance on environmental crime, connections to organised crime, and rebel funding), and they miss information on how to concretely integrate climate and environmental security into their work. This could be addressed by, for example, developing relevant indicators for forecasting and integrating the monitoring of those indicators into planning and operations.

Coordination and mandates: many enforcement actors are involved in environmental protection and this overlap was mentioned as a good thing that enhances enforcement. Moreover, the DENR and BFAR as the two main environmental protection actors are working to clarify cooperation and shared jurisdictions. However, the fact that there is no central entity responsible for environmental protection policy and enforcement leaves gaps, such as the lack of a central database on environmental crimes and offences, and environmental protection now falls under various national government agencies and local government. The role of local governments is also double-edged: LGUs can play a pioneering role in advance of national enforcement action, but the National Security Strategy also explicitly notes that some LGUs are unwilling to enforce environmental legislation[122]. Some environmental protection actors, such as the PCTC and the NBI's Environmental Crime Unit, seem to lack visibility among other actors in the system.

Little data sharing and information management between security providers and environmental agencies appears to be a missed opportunity. The sharing and coordinated management of data could allow better analysis of the scale of the problem, the monitoring of progression over time, the identification of the most prevalent crimes, assessments of the impact of policy and improved forecasting. Better environmental protection data can also be integrated into DRRM hazard planning and prevention.

The **legal framework** surrounding environmental crimes and offences is quite strong; however, implementation is lagging, and there are still some grey areas that can be exploited by environmental offenders. Overlapping jurisdictions enable 'penalty shopping' for the enforcement authority with the lowest fines. Leaving a significant part of offences to be regulated at the level of LGU ordinances decreases the deterrent effect that higher fines and penalties could have.

Corruption: in general, environmental protection is profoundly political, and this seems to be the case in the Philippines. Although additional data and analysis would be required, several interviewees pointed out how politically powerful actors in industry, agriculture and mining can benefit from weak environmental regulations and enforcement. Clear indicators suggest close ties between the security sector and large private corporations, as well as elements of clientelism and patronage. Interviewees pointed towards risks stemming from funding constraints that push security providers to accept or even depend on private funding, which can compromise their impartiality and public legitimacy. In interviews with civil society and community focus groups, it was suggested that some oversight actors enjoy a certain level of trust, such as the Commission on Human Rights, the Commission on Audit and the Catholic Church. Their exact roles and the level to which these sentiments can be generalised is outside the scope of this study.

Opportunities for social cohesion and peacebuilding: climate and environmental risks pose many challenges as conflict drivers, but they can also be opportunities to work together and build trust. Focus groups and interviews with several communities and civil society representatives suggest that many people expect the state and security sector actors to protect their natural environment. This makes responding to the environmental protection expectations of the population an opportunity for security providers to strengthen their legitimacy and the public's trust in the state. This potential to build trust (or repair strained relationships) between communities and security providers remains largely unexplored.

Initiatives to reintegrate former rebels into the Bantay Gubat and Bantay Dagat, as well as the AFP's attempts to integrate climate and environmental issues into its development efforts, have been very positive. There is a strong benefit to learn from these engagements and better articulate the added value of integrating environmental issues into peacebuilding efforts. The dividends of such approaches remain poorly understood and the SSG/R community would benefit from undertaking further analysis in this space. The shortfalls and risks of omitting environmental issues from social cohesion considerations could undermine peace and conflict prevention efforts.

4. Conclusion

Recommendations

Considerations for international partners

Beyond taking into account the opportunities for the various Philippine institutions, listed below, as a possible roadmap for their cooperation with the Government of the Philippines, international partners could consider:

- Supporting **comprehensive approaches** to SSG/R, DRRM and environmental protection:
  - International partners should consider encouraging cross-sectoral coordination and collaboration between relevant international stakeholders, such as bilateral security and development partners, relevant international organisations, such as UNEP, UNDRR and UNODC, and international financial institutions (IFIs). A first step could be the mapping of all relevant recent, ongoing and planned international support to the Philippines in the climate–environmental–peace nexus. Through advocating for IFIs to become fully part of cross-sectoral dialogue and coordination, international partners could move one step closer to operationalising this triple nexus.
  - When providing support, programming should span sectors and institutions on the climate–environmental–peace nexus, working simultaneously with security sector, environmental protection, DRR and development actors. Pilot programmes that simultaneously strengthen law enforcement while providing alternative sources of livelihoods to communities exist at the local level. International partners need to identify, support and scale up these initiatives. One way to do this would be by making climate finance and other funding instruments by, for example, IFIs more easily accessible at the local level.
  - International partners should also integrate the climate–environmental–peace nexus into security cooperation (for instance by technology transfers and capacity-building). A first step could be conducting a portfolio review of current engagements, such as capacity-building and equipment support, to identify opportunities for mainstreaming climate and environmental security considerations, and to inform future planning.
- Seizing opportunities for **social cohesion and peacebuilding:**
  - This would involve strengthening the oversight and accountability of environmental protection and DRR tasks of the Philippine security sector by providing support to external oversight bodies, such as the Commissions on Human Rights and Audit, the Office of the Ombudsman, CSOs, parliament and the media. Security cooperation programmes can be entry points to strengthen internal oversight mechanisms or for conducting corruption risk assessments. Examples of key environmental issues requiring stronger accountability and oversight processes are the protection of environmental defenders, problematic public–private partnerships, illicitly obtained natural resource exploitation permits and patronage at the local DRRM level.
  - International partners should increase budgetary transparency and accountability in security sector institutions' DRR work, building on existing analytical work and expertise by international and national financial institutions to support the Government of the Philippines in enhancing budget planning, tracking and execution for DRR related expenditures.
  - Supporting and exploring ongoing initiatives to integrate climate and environmental issues into peacebuilding efforts in the Mindanao peace process, such as on disarmament, demobilisation and reintegration (DDR) and governance structures for environmental governance, will also be important. A first step could be analysing environmental DDR processes in the Philippines to inform good practices and lessons learned, for instance involving the Bantay Gubat and Bantay Dagat.
  - International partners should also explore and where possible support (local) initiatives that strengthen relationships between security sector actors and communities. This could be through educational DRR activities, joint training activities for civil protection volunteers and security personnel, and community law enforcement initiatives such as the Bantay Gubat and Bantay Dagat. A first step could be a pilot study centred around a local initiative, such as Metal Horse, to identify to what extent there is potential for scaling up.

- Investing in **learning and knowledge generation**:
  - International partners should identify and share some of the promising practices applied by Philippine security institutions (such as community-based environmental enforcers, decentralised DRRM), and identify and support opportunities for sharing experiences and peer-to-peer exchanges with other countries facing similar challenges.
  - Studying the risks, limitations, benefits and opportunities of security sector engagement with CCA projects involving community development to address root causes of conflict and counter extremist narratives will also be important.

Opportunities for Philippine actors

Policy integration: ensure that policy integration between climate change, DRRM, environmental protection and security translates into implementation. This can be done by taking steps such as strengthening CLUPs and their enforcement, and holistic planning through the Cabinet Cluster on Climate Change Adaptation and Mitigation and DRR. Integration could be pursued by raising awareness among DRRM and law enforcement actors about the importance of environmental protection for DRRM and CCA. This can include clarifying responsibilities and supporting 'environmental champions'.

Budgeting and planning: allocate a transparent, needs-based budget for DRR and environmental protection tasks of the security sector could increase efficiency of spending. For this, security sector providers' budgeting processes could be reviewed to include DRRM and environmental protection requirements to implement a data-driven approach to budgeting, which is traditionally based on historical spending and forecasting. Such data-driven planning would require better tracking of the security sector actors' preparation and operational DRRM expenses, and an enhanced data system for environmental protection and crime that is (ideally) digitalised, accessible by multiple actors, and has clear classification and reporting criteria. Moreover, planning needs to include reviewing deputised environmental law enforcement operations in rural areas and the links that these have to DRRM prevention work. Similarly, climate change, DRRM and environmental degradation need to be integrated more closely into capability and operational planning.

Accountability: foster oversight and increasing internal and external accountability for all security sector actors engaged in DRRM and environmental protection. This includes supporting oversight actors such as the Commissions on Human Rights and Audit and the Office of the Ombudsman, as well as internal oversight mechanisms. One particularly promising entry point to consider relates to introducing performance-based service delivery indicators across different national and local agencies, including financial incentives, on DRR and environmental protection benchmarks. At the local level, LGUs can be stricter in the development and enforcement of **CLUPs**. This means addressing unauthorised construction activities, particularly in areas that are relevant to DRRM, such as riverbeds, hillsides and mangroves. This requires the strengthening of existing local accountability structures, given the potential links between local government official, local law enforcement and private (sector) interests. CENROs can play critical roles in this. Security agencies should consider regularising public–private partnerships by establishing resource registries and clear oversight mechanisms for private personnel.

Legal and regulatory frameworks: review the legal and regulatory framework concerning DRRM and environmental protection. This can help close gaps and harmonise penalties and fines at and between the national and local levels. It requires clarifying questions on land ownership and use, including the enforcement of land rights and zoning regulations at a local level. The Bantay Gubat and Bantay Dagat can be reviewed to clarify their mandate, compensation, insurance, benefits, training, chain of command and standard operating procedures.

Coordination: the OCD as the primary coordinating agency on DRRM could take the lead in closing coordination gaps at various levels and sectors of government. It can do this by enhancing **information sharing of risk analyses and monitoring**, including by enhancing risk data sharing both vertically (national to local) and horizontally (between local actors). The reliance on the University of the Philippines to fund Project NOAH could be reviewed, as this gives rise to questions about the sustainability and accountability of a vital DRRM resource. Digitalisation and processing of data can be improved, and data gaps can be identified and closed by the OCD working with regional and local DRR offices and authorities. Moreover, the OCD could further bridge the horizontal **coordination gap between local DRRM planning**. The OCD together with DOST, DENR and other actors can make risk assessments more complete by coordinating closer, and by seeing DRR more through the prism of integrated natural regions (for instance watersheds) rather than by administrative boundaries. Another avenue through which to strengthen coordination is **mapping and simplifying the relationships** between actors such as the DENR and BFAR, and law enforcement. Deputization of security sector actors for environmental law enforcement can be

organised better, for instance through ecosystem-based law enforcement coordination groups ('ridge to reef') with clear lead agencies. In addition to enforcement, the coordination of reforestation programmes and their sustainability could be centralised under the DENR, especially the coordination of reforestation efforts by the PNP and AFP. Coordination could be strengthened by **enhancing the visibility of the NBI and PCTC among law enforcement agencies** as specialised entities with environmental expertise. The PCTC could better use its mandate to raise awareness and address the transnational dimension of environmental crime within ASEAN and ASEANAPOL.[123] This could include research and data management improvements that it can share with partner states (including through Interpol). It could also play a more active coordinating role at the regional and international levels by facilitating information exchange and sharing best practices, including successes of other Philippine law enforcement actors and experiences of other countries in the region. Finally, responsible national and local agencies issuing permits (such as for construction, mining, logging) could develop a **central online database on permits**, to enable a rapid permit verification process.

Capacity-building: the OCD could work more closely with security sector actors and the DENR and BFAR to continue implementing the shift from a response-based to a prevention-based DRRM approach. Training and education curricula at all levels of government can include modules on the crucial role of environmental protection and nature-based solutions in preventive DRRM. These can build on existing curricula, where available, and on existing ongoing efforts to build environmental law enforcement capacity, notably in the maritime domain.

Linking climate and environmental risks to peace and security: climate and environmental issues can be used as opportunities to strengthen social cohesion and support peacebuilding and reconciliation efforts. For example, DDR initiatives can be used to stimulate sustainable resource management and also encourage security sector actors to use environmental protection and DRR issues to engage with communities and build trust. The AFP and PNP should, for instance, study the potential benefits (such as building public trust) of working together with communities in DRRM and environmental protection-related development efforts, such as remediation, clean-ups, reforestation and supporting disaster infrastructure work in rural areas. Such studies should also assess the impact of their response work in DRRM on their perceived legitimacy (especially in rural areas). These ideas should be balanced with securitisation risks.

In addition, there are several opportunities for strengthening the **role of climate and environmental risks in security analysis**. On the intelligence side, NICA could further its work on developing climate and environmental risk indicators to inform its intelligence. It could also collect intelligence on the issue of natural resource exploitation by armed groups to generate revenue, which can also help raise the profile of environmental crime in the Philippine law enforcement community. Similar indicators might be able to inform the forecasting of social unrest, crime hotspots and conflict of relevance to other security sector actors.

Photo: DCAF

Implications for security sector governance and reform

This section explores the insights and takeaways that emerged from the DCAF stocktaking study in the Philippines. It presents the factors that might determine how security sector governance evolves over the next few years. The below observations represent an analysis by the DCAF experts that might help clarify future perspectives for SSG/R programming as supported by the international community. Theses takeaways are targeted at the international SSG/R community.

- **Recognising and reinforcing climate and environmental security roles:** the international community should recognise and engage with the security sector in mitigating climate and environmental risks as a top priority:
  - The security sector's climate and environmental security roles should be integrated into **bilateral partnerships**, including bilateral development cooperation, climate partnerships and defence cooperation. This means, for example, mainstreaming DRR and environmental protection into capacity-building efforts and when delivering equipment.
  - International and regional cooperation to tackle environmental crime should be strengthened, recognising the importance of preventing non-criminalised forms of environmental harms. A legal approach that creates strong disincentives and enforcement mechanisms through criminalising offences (in addition to civil offences) has been shown, in combination with leveraging technology for customs controls and fraud detection, to be a promising entry point in this regard.
  - The knowledge base should be expanded, including with analysis, data and evidence on climate security and environmental crime and SSG/R, thus enabling future programming to be better equipped for delivering dividends for people, planet and peace.
- **Corruption and accountability:** corruption and lacking accountability in the security sector is an enabler and a driver of environmental crime; it also prevents effective disaster prevention and can lead to unequal access to disaster aid. Investment in capacities for tracking financial flows can increase transparency and at the same time enable better forward financial planning. Special attention needs to be paid to direct links between the security sector and private sector actors with interests in primary sector industries. A principled approach to supporting security sectors in these roles is paramount for maintaining the credibility and legitimacy of the international community and partner states.
- **Environmental degradation through waste disposal and pollution:** waste disposal and pollution are human security issues that are likely to become more important as pressures on ecosystems from climate change and demands for natural resources including land continue to increase. Polluted land and water affect public health and decrease food and water security, and the value chain linked to waste management is prone to illicit and illegal activities that can have transnational dimensions. In a global context of tightening environmental regulations, security institutions in many regions may also need to strengthen their understanding of the transnational dimensions of illegal waste disposal.
- **Shifting from response to prevention:** a longer-term focus on **prevention** is critical for DRR and environmental protection and for preventing conflict. **Risk-informed urban planning and land use planning** can make a significant contribution to mitigating future disaster risks but is not always well integrated with DRR functions or enforced. The widespread destruction of ecosystems is a **slow-onset disaster**, with potentially catastrophic consequences for future food and water security, and also increases vulnerability to other hazards by damaging nature-based solutions for mitigating climate and disaster risk. Climate and environmental risk data can provide useful insights for **forecasting security risks**, such as social unrest, crime and conflict.

- **Coordination and integration:** because of their high level of complexity, tackling environmental crime and analysing disaster risks require an approach that is **horizontally integrated between sectors** (in particular, close coordination is required between security institutions and environmental and other government agencies that may not traditionally work together) and **vertically integrated between levels of government** (which is of particular importance in decentralised systems). Furthermore, at the community level, disaster risk and environmental harm are often linked with different vulnerabilities, such as migration and livelihood pressures. Thus, solutions that focus solely on enforcement are unlikely to succeed.
- **Comprehensive international partner approaches:** working effectively on DRR and environmental protection, and more broadly on the triple nexus of humanitarian aid, development and peace, also requires development actors to view these issues as linked and act accordingly. This means developing innovative funding instruments that can cover several hitherto separate sectors and policy areas, and having the ability and willingness to engage with a wide range of national counterparts across sectors.
- **Private sector:** environmental protection and DRR pose many questions, and law enforcement and private actors can benefit from each other's expertise and cooperation in pursuing sustainable business exploitation. Companies need to be seen as important stakeholders to discuss environmental governance with and have a considerable interest in good governance. At the same time, where companies exploit weaknesses in the system and build unequal relationships with local and national security sector actors, or local, regional and national elites, security sector actors can be complicit or co-beneficiaries. Those working on oversight and accountability efforts to expose such exploitative and environmentally destructive schemes, such the media and civil society, especially environmental defenders, who often become targets, deserve special attention and protection.
- **Supporting capable communities**: especially in resource-constrained, remote and fragile contexts, communities play a key function **as a first line of defence**. This requires a realistic analysis of what communities themselves can do as a first line of defence, and where security and government institutions must play a role. Working with volunteers can multiply state capacity but requires the right institutional and oversight framework.
- **Sustaining peace:** climate change has been mostly studied as a risk multiplier for conflict. However, there are a variety of promising opportunities to leverage climate and environmental issues and SSG/R for sustaining peace:
  - The responses of states, including security sector actors, to climate and environmental risks, and the way in which they engage with communities and individual citizens on these risks, have a great impact on communities' perceptions. This is an opportunity to strengthen trust in the state, break extremist and rebel narratives and foster reconciliation between groups. Programming should fully leverage this through the inclusion of peacebuilding expertise and methodologies.
  - In addition to addressing questions of environmental governance and natural resource management in peace processes, DDR, military integration and rightsizing processes offer opportunities to re-hatting ex-combatants and former soldiers within the security sector into climate and environmental security roles. This in turn provides them with opportunities for sustainable livelihoods, draws on their experience and strengthens environmental protection and DRR.
  - Supporting volunteers and civic engagement, and applying confidence-building methodologies for joint training programmes, are opportunities for building trust between groups and the community and security sector.

Bibliography

Abano, Imelda, and Leilani Chavez. 2021. Wildlife trafficking, like everything else, has gone online during COVID-19. *Mongabay*. Manila, Philippines. Available at <https://news.mongabay.com/2021/06/wildlife-trafficking-like-everything-else-has-gone-online-during-covid-19/>. Accessed 5 June 2023.

ABC News. 2012. Philippines squatters clash with riot police. *ABC News*. Available at <https://www.abc.net.au/news/2012-09-25/an-philippines-informal-settlers-clash-with-demolition-crews/4278922>. Accessed 7 June 2023.

Acosta, Lilibeth, Elena Eugenio, Paula Beatrice Macandog, Damasa Magcale-Macandog, Kuan-Hui Lin, Edwin Abucay, Alfi Cura, and Mary Primavera. 2016. Loss and damage from typhoon-induced floods and landslides in the Philippines: Community Perceptions on climate impacts and adaptation options. *International Journal of Global Warming* 9: 33–65.

adelphi. 2016. Land Grabbing in the Philippines | Climate-Diplomacy. Available at <https://climate-diplomacy.org/case-studies/land-grabbing-philippines>. Accessed 27 February 2023.

AFP. 2012. Life a constant battle for Philippine squatters. *Bangkok Post Public Company Limited*. Bangkok, Thailand. Available at <https://www.bangkokpost.com/world/284004/life-a-constant-battle-for-philippine-squatters>. Accessed 7 June 2023.

Alberts, Elizabeth Claire. 2020. Illegal trade of Philippine pangolins is surging, report shows. *Mongabay Environmental News*. Available at <https://news.mongabay.com/2020/08/weak-enforcement-sees-surging-trade-in-philippine-pangolin-study-shows/>. Accessed 7 June 2023.

Alcoseba Fernandez, Hannah. 2022. Child scavengers — casualties of the Philippines' war against waste. Eco-Business. Available at <https://eco-business.shorthandstories.com/child-scavengers-casualties-of-the-philippines-war-against-waste/>. Accessed 9 August 2023.

ASEANAPOL. 2013. *About ASEANAPOL*. About ASEANAPOL. Available at <http://www.aseanapol.org/about-aseanapol>. Accessed 9 September 2023.

Asian Development Bank. 2011. Addressing Illegal Wildlife Trade in the Philippines: 12.

Asia-Pacific Economic Cooperation. 2015. APEC Disaster Risk Reduction Framework. Asia-Pacific Economic Cooperation.

Associaton for Southeast Asian States. 2020. ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2021-2025. Associaton for Southeast Asian States.

Attorneys of the Philippines. 2017. Warrantless Arrest: When Can It Be Lawful? Available at <https://attorney.org.ph/legal-news/360-warrantless-arrest-when-can-it-be-lawful>. Accessed 27 February 2023.

Australian Trade and Investment Commission. n.d. Mining to the Philippines. Australian Trade and Investment Commission. Available at <https://www.austrade.gov.au/australian/export/export-markets/countries/philippines/industries/mining>. Accessed 29 March 2023.

Barreda, Ariel B. 2022. Assessment on the Level of Implementation of Environmental Laws in the Philippines. Zenodo. Available at <https://zenodo.org/record/6816697>. Accessed 21 December 2022.

Biodiversity Management Bureau. 2020. DENR Awards Wildlife Defenders and Announces Intensified Efforts to Stop Organized Environmental Crime. *BMB*. Available at <https://www.bmb.gov.ph/index.php/resources/news-and-events/98-denr-awards-wildlife-defenders-and-announces-intensified-efforts-to-stop-organized-environmental-crime>. Accessed 5 June 2023.

Buendnis Entwicklung Hilft, and Ruhr University Bochum - Institute for International Law of Peace and Armed Conflict (IFHV). 2022. *WorldRiskReport 2022*. Bochum, Germany: Buendnis Entwicklung Hilft.

Castelo, Micah. 2019. Manila's informal settlers face relocation in exchange for clean bay. *Mongabay Environmental News*. Available at <https://news.mongabay.com/2019/10/manilas-informal-settlers-face-relocation-in-exchange-for-clean-bay/>. Accessed 6 June 2023.

Celeste, Brian Lee. 2021. Bantay Gubat's Challenges in Protecting Mt. Hamiguitan Wildlife Sanctuary, Davao Oriental, Philippines. *Journal of Academic Research* 6 (1): 11–24.

Christie, Patrick, Richard B. Pollnac, Enrique G. Oracion, Agnes Sabonsolin, Roxie Diaz, and Diana Pietri. 2009. Back to Basics: An Empirical Study Demonstrating the Importance of Local-Level Dynamics for the Success of Tropical Marine Ecosystem-Based Management. *Coastal Management* 37 (3–4). Taylor & Francis: 349–373.

Congress of the Philippines. 1991. Republic Act 7160 - Local Government Code of the Philippines. Official Gazette of the Republic of the PHilippines.

Congress of the Philippines. 1998. The Philippine Fisheries Code of 1998: Republic Act No. 8550. Available at <https://www.bfar.da.gov.ph/wp-content/uploads/2021/04/Pursuant-to-Republic-Act-No.-8550.pdf>. Accessed 20 October 2022.

Congress of the Philippines. 2010. Philippine Disaster Risk Reduction and Management Act of 2010. Congress of the Philippines.

Crost, Benjamin, Claire Duquennois, Joseph H. Felter, and Daniel I. Rees. 2018. Climate change, agricultural production and civil conflict: Evidence from the Philippines. *Journal of Environmental Economics and Management* 88: 379–395.

Crost, Benjamin, and Joseph H. Felter. 2020. Extractive resource policy and civil conflict: Evidence from mining reform in the Philippines. *Journal of Development Economics* 144. North-Holland: 102443.

Csordas, Viola, Anne Bennett, and Fredrik Wallin. 2023. *Stocktaking of security sector roles in climate and environmental security - Report on Sierra Leone.* Stocktaking Study. Geneva: DCAF - Geneva Centre for Security Sector Governance. Available at <https://www.dcaf.ch/sites/default/files/publications/documents/StocktakingStudy-SLE-Report-EN_May2023.pdf>. Accessed 26 June 2023.

Csordas, Viola, Abigail Robinson, and Fredrik Wallin. 2022. *Stocktaking of Security Sector Roles in Climate and Environmental Security - Report on the occupied Palestinian Territory*. Geneva: DCAF - Geneva Centre for Security Sector Governance. Available at <https://www.dcaf.ch/sites/default/files/publications/documents/StocktakingStudy-oPT_EN_Jan2023.pdf>. Accessed 3 February 2023.

DA-BFAR. 2022. *In Brief: Philippine IUU Fishing Assessment Report 2021*. Quezon City, Philippines: Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR. Available at <https://www.bfar.da.gov.ph/wp-content/uploads/2022/08/Philippine-IUUF-Assessment-2021.pdf>. Accessed 30 May 2023.

Department of Environment and Natural Resources. 2021a. DENR creates interim environmental law enforcement office. Available at <https://www.denr.gov.ph/index.php/news-events/press-releases/2902-denr-creates-interim-environmental-law-enforcement-office>. Accessed 20 October 2022.

Department of Environment and Natural Resources. 2021b. DENR-MGB clamps down on illegal, small-scale miners in Nueva Vizcaya. Available at <https://www.denr.gov.ph/index.php/news-events/press-releases/3129-denr-mgb-clamps-down-on-illegal-small-scale-miners-in-nueva-vizcaya>. Accessed 7 June 2023.

Department of Environment and Natural Resources. 2021c. DENR nabs 15 illegal miners, seizes quarrying equipment inside Taal Volcano protected area. Available at <https://www.denr.gov.ph/index.php/news-events/press-releases/3433-covid-19-updatesdenr-nabs-15-illegal-miners-seizes-quarrying-equipment-inside-taal-volcano-protected-area>. Accessed 7 June 2023.

Department of Environment and Natural Resources. 2022. Cimatu to public: Strictly follow law when buying certain wildlife species. Available at <https://www.denr.gov.ph/index.php/news-events/press-releases/3493-cimatu-to-public-strictly-follow-law-when-buying-certain-wildlife-species>. Accessed 7 June 2023.

Department of Human Settlements and Urban Development. 2023. Land Use Plan Status Dashboard. *DEPARTMENT OF HUMAN SETTLEMENTS AND URBAN DEVELOPMENT*. Available at <https://dhsud.gov.ph/services/environmental-land-use-and-urban-planning-and-development/clup-status/>. Accessed 6 June 2023.

Domingo, Sonny N, and Arvie Joy A Manejar. 2018. *Disaster Preparedness and Local Governance in the Philippines*. Discussion Paper Series. Philippine Institute for Development Studies.

FAO. n.d. Ecosystem Services & Biodiversity (ESB). *Food and Agriculture Organization of the United Nations*. Available at <http://www.fao.org/ecosystem-services-biodiversity/en/>. Accessed 6 June 2023.

Farrow, Aidan, Kathryn A Miller, and Lauri Myllyvirta. 2020. *Toxic Air: The Price of Fossil Fuels*. Seoul: Greenpeace Southeast Asia. Available at <https://www.greenpeace.org/static/planet4-philippines-stateless/2020/02/8c13fcaf-toxic-air-report-110220.pdf>. Accessed 5 June 2023.

Flores, Ronald. 2008. Financial Strategies in Managing the Economic Impact of Disasters - Funding Disaster Management in the Philippines. Philipines Office of Civil Defense. Available at <https://www.preventionweb.net/files/3289_FundingDRM.pdf>. Accessed 6 March 2023.

GFDRR. 2016. GFDRR Country Profile: the Philippines. Available at <https://www.gfdrr.org/sites/default/files/publication/PHILIPPINES2016.pdf>. Accessed 30 May 2023.

GIZ. 2013. *Analysis of Key Drivers of Deforestation and Forest Degradation in the Philippines*. Available at <https://forestry.denr.gov.ph/redd-plus-philippines/publications/Analysis%20of%20key%20drivers%20of%20deforestation%20and%20forest%20degradation%20in%20the%20Philippines.pdf>. Accessed 20 October 2022.

González Esquivel, Maria Teresa, Diego Garcìa Represa, Cristina Hoyos, Abigail Robinson, and Giulia Scortegagna. 2023. *Stocktaking of security sector roles in climate and environmental security - Report on Brazil*. Stocktaking Study. Geneva: DCAF - Geneva Centre for Security Sector Governance. Available at <https://www.dcaf.ch/sites/default/files/publications/documents/StocktakingStudy-BRA-EN.pdf>. Accessed 26 June 2023.

Government of the Philippines. 2018. National Security Strategy. Available at <https://www.officialgazette.gov.ph/downloads/2018/08aug/20180802-national-security-strategy.pdf>. Accessed 21 December 2022.

Hines, Ali. 2022. Decade of defiance: Ten years of reporting land and environmental activism worldwide. Global Witness. Available at <https:///en/campaigns/environmental-activists/decade-defiance/>. Accessed 22 March 2023.

International Pollutants Elimination Network. 2019. Philippines becoming a rich world dumping ground. Available at <https://ipen.org/news/philippines-becoming-rich-world-dumping-ground>. Accessed 21 October 2022.

IPCC. 2019. *Summary for Policymakers — Special Report on Climate Change and Land*. Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems. Available at <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/>. Accessed 8 July 2022.

Leppert, Gerald, Lena Hohfeld, Malte Lech, and Thomas Wencker. 2018. *Impact, Diffusion and Scaling-Up of a Comprehensive Land-Use Planning Approach in the Philippines. From Development Cooperation to National Policies*. Bonn: German Institute for Development Evaluation (DEval).

Maderazo, Mario. 2016. *Supporting the Fisheries Commission's Community Fisheries Watchdog Communities: Legal Review of the Bantay Dagat Program in the Philippines*. The USAID/Ghana Sustainable Fisheries Management Project (SFMP). Narragansett, RI: Coastal Resources Center, Graduate School of Oceanography, University of Rhode Island and SSG Advisors. Available at <https://www.crc.uri.edu/download/GH2014_POL051_SSG_508.pdf>. Accessed 20 December 2022.

Magcale-Macandog, Damasa B, Paula Beatrice M Macandog, Elena A Eugenio, Elaine Kuan-hui Lin, and Marites T Gonzalo. n.d. Assessment of the impacts of flashfloods and landslides in BRGY. Andap, New Bataan, Compostela Valley, Philippines: a local community perspective. *Journal of Nature Studies* 19 (2): 63–83.

National Bureau of Investigation. 2022. Overview | Welcome to National Bureau of Investigation. Available at <https://nbi.gov.ph/transparency-seal/overview/>. Accessed 20 December 2022.

National Intelligence Coordinating Agency. 2023. Mandate. Available at <https://nica.gov.ph/mandate.html>. Accessed 5 June 2023.

Nehren, Udo, Karen Sudmeier-Rieux, Simone Sandholz, Marisol Estrella, Mila Lomarda, and Tania Guillén. 2014. *The Ecosystem-based Disaster Risk Reduction - Case Study and Exercise Source Book*. Geneva and Cologne: Partnership for Environment and Disaster Risk Reduction and Center for Natural Resources and Development. Available at <https://www.unep.org/resources/case-study/ecosystem-based-disaster-risk-reduction-case-study-and-exercise-source-book>. Accessed 19 July 2022.

Nem Singh, Jewellord, and Alvin Camba. 2020. The role of domestic policy coalitions in extractive industries' governance: Disentangling the politics of "responsible mining" in the Philippines. *Environmental Policy and Governance* 30 (5): 239–251.

Ner, Nikko Torres, Seth Asare Okyere, Matthew Abunyewah, and Michihiro Kita. 2022. Integrating resilience attributes into local disaster management plans in Metro Manila: strengths, weaknesses, and gaps. *Progress in Disaster Science* 16: 100249.

Ng, Desmond. 2020. Why Manila is at risk of becoming an underwater city. *Channel News Asia*. Available at <https://www.channelnewsasia.com/cnainsider/why-manila-risks-becoming-underwater-city-climate-change-772141>. Accessed 7 November 2022.

Office of Presidential Adviser on the Peace Process. 2018. OPAPP Accomplishment Report Second Quarter 2018. Office of Presidential Adviser on the Peace Process. Available at <https://peace.gov.ph/wp-content/uploads/2018/07/OPAPP-Accomplishment-Report-Second-Quarter-Part-1-compressed.pdf>.

Office of the President of the Philippines. 2017a. *National Security Policy for Change and Wellbeing of the Filipino People*. Manila, Philippines: Office of the President of the Philippines.

Office of the President of the Philippines. 2017b. *National Security Policy for Change and Wellbeing of the Filipino People*. Manila, Philippines: Office of the President of the Philippines.

Office of the President of the Philippines. 2022. Overview. *Philippine Center on Transnational Crime*. Available at <https://pctc.gov.ph/?page_id=31>. Accessed 20 October 2022.

Office of the President of the Philippines, and Climate Change Commission. 2010. *National Framework Strategy on Climate Change 2010-2022*. Manila, Philippines: Office of the President of the Philippines.

Ohara, Miho, Hisaya Sawano, and International Centre for Water Hazard and Risk Management (ICHARM) under the Auspices of UNESCO, Public Works Research Institute (PWRI) 1-6 Minamihara, Tsukuba, Ibaraki, Japan. 2015. Current Issues Regarding the Incident Command System in the Philippines. *Journal of Disaster Research* 10 (2): 238–245.

Pavlova, Pavlina, and Joseph Hincks. 2013. The Philippines: an Overview. *Engineering and Mining Journal* 214 (3): 64–65.

Pettorelli, Nathalie, Nicholas A. J. Graham, Nathalie Seddon, Mercedes Maria da Cunha Bustamante, Matthew J. Lowton, William J. Sutherland, Heather J. Koldewey, Honor C. Prentice, and Jos Barlow. 2021. Time to integrate global climate change and biodiversity science-policy agendas. *Journal of Applied Ecology* 58 (11): 2384–2393.

Philippine Bureau of the Treasury. 2012. Budgeting for disaster risk in the Philippines. UNESCAP. Available at <https://www.unescap.org/sites/default/files/8Budgeting-for-disaster-risk-in-the-Philippines.pdf>. Accessed 6 March 2023.

Philippine Statistics Authority. 2015. Special Report - Highlights of the 2012 Census of Agriculture (2012 CA). Available at <https://psa.gov.ph/caf/id/51722>. Accessed 27 February 2023.

Philippines Anti-Money Laundering Council. 2019. *A Risk Assessment on the Philippines' Exposure to External Threats based on Submitted Suspicious Transaction Reports*. Manila, Philippines: Philippines Anti-Money Laundering Council.

Philippines Climate Change Commission. 2011. *National Climate Change Action Plan 2011-2028*. Manila, Philippines: Climate Change Commission.

Philippines National Disaster Risk Reduction and Management Council. 2020. *National Disaster Risk Reduction and Management Plan 2020-2030*. Quezon City, Philippines: Philippines National Disaster Risk Reduction and Management Council. Available at <https://ndrrmc.gov.ph/attachments/article/4147/NDRRMP-Pre-Publication-Copy-v2.pdf>. Accessed 12 October 2022.

Philippines National Disaster Risk Reduction and Management Council, Matt. 2018. *National Disaster Response Plan for Earthquakes and Tsunamis*. Manila, Philippines: Philippines National Disaster Risk Reduction and Management Council.

Philippines National Economic and Development Authority. 2017. *Updated Philippine Development Plan (2017-2022)*. Pasig City, Philippines: Philippines National Economic and Development Authority.

Pope Francis. 2015. Encyclical Letter Laudato si' of the Holy Father Francis on Care of Our Common Home. Available at <https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html>. Accessed 27 February 2023.

Pörtner, Hans-Otto, Robert J. Scholes, John Agard, Emma Archer, Almut Arneth, Xuemei Bai, David Barnes, et al. 2021. *Scientific outcome of the IPBES-IPCC co-sponsored workshop on biodiversity and climate change*. Bonn, Germany: IPBES Secretariat. Available at <https://research-management.mq.edu.au/ws/portalfiles/portal/199334454/Lim_IPBES_report.pdf>. Accessed 17 April 2023.

Queensland Government. 2022. Prevention Preparedness, Response and Recovery Disaster Management Guideline. *Government Website*. Available at <https://www.disaster.qld.gov.au/dmg/Pages/DM-Guideline-2.aspx#5>. Accessed 14 July 2022.

Rasul, Amina. 2008. The Earth at risk: 'Bantay Dagat, Bantay Yaman'. *Sunday Times*. Philippines. Available at <https://web.archive.org/web/20140913174850/http://ecologyasia.com/news-archives/2008/apr-08/tst_080427_1.htm>. Accessed 18 April 2023.

Republic of the Philippines. 1987. The Constitution of the Republic of the Philippines. Official Gazette of the Republic of the PHilippines.

Ritzhie Mantaring, Jelo. 2022. PH remains worst place for land, environmental defenders in Asia — watchdog. *CNN Philippines*. Available at <https://www.cnnphilippines.com/news/2022/9/30/PH-remains-worst-place-for-land-and-environmental-defenders-in-Asia.html>. Accessed 9 August 2023.

Rivera, Shannon N., Andrew Knight, and Steven P. McCulloch. 2021. Surviving the Wildlife Trade in Southeast Asia: Reforming the 'Disposal' of Confiscated Live Animals under CITES. *Animals* 11 (2): 439.

Sarmiento, Bong S. 2022. 'I am pro-mining': Indigenous opposition to Philippine mine project falters. *Mongabay Environmental News*. Available at <https://news.mongabay.com/2022/02/i-am-pro-mining-indigenous-opposition-to-philippine-mine-project-falters/>. Accessed 6 June 2023.

Schachter, Jonathan, and Rachel Karasik. 2022. *Plastic Pollution Policy Country Profile: Philippines*. Nicholas Institute for Environmental Policy Solutions.

Secretariat for the Acid Deposition Monitoring Network in East Asia. 2020. Philippines. Policies and Practices Concerning Acid Deposition. Available at <https://www.eanet.asia/wp-content/uploads/2020/04/9-Philippines_Factsheet_compressed.pdf>. Accessed 20 October 2022.

Senate of the Philippines. 2022a. Environmental Protection and Enforcement Bureau (EPEB) Act - SBN-846. Senate of the Philippines. Available at <https://legacy.senate.gov.ph/lis/bill_res.aspx?congress=19&q=SBN-846>. Accessed 9 August 2023.

Senate of the Philippines. 2022b. Department of Disaster Resilience Act - SBN-662. Available at <https://legacy.senate.gov.ph/lis/bill_res.aspx?congress=19&q=SBN-662>. Accessed 1 June 2023.

Sunstar Philippines. 2010. AFP vows to support mining industry. *SUNSTAR*. Available at <https://www.sunstar.com.ph/article/198432/afp-vows-to-support-mining-industry>. Accessed 5 June 2023.

TRAFFIC. 2019. Critically Endangered Echidna among wildlife menagerie seized in Philippines - Wildlife Trade News from TRAFFIC. Available at <https://www.traffic.org/news/echidna-among-wildlife-menagerie-seized-in-philippines/>. Accessed 7 June 2023.

UN Office of the High Commissioner for Human Rights. 2020. Philippines: UN report details widespread human rights violations and persistent impunity. *OHCHR*. Available at <https://www.ohchr.org/en/press-releases/2020/06/philippines-un-report-details-widespread-human-rights-violations-and>. Accessed 5 June 2023.

UNDRR. 2015. Sendai Framework for Disaster Risk Reduction 2015 - 2030. United Nations Office for Disaster Risk Reduction (UNDRR).

UNEP, and INTERPOL. 2016. *Strategic Report: Environment, Peace and Security. A Convergence of Threats*. Available at <https://wedocs.unep.org/bitstream/handle/20.500.11822/17008/environment_peace_security.pdf>. Accessed 20 October 2022.

UNHCR. 2021. Climate change is a threat multiplier for the forcibly displaced in Mindanao. *UNHCR Philippines*. Available at <https://www.unhcr.org/ph/24073-jul2021-enews-mindanao.html>. Accessed 8 November 2022.

UNHCR. 2022. Mindanao Displacement Dashboard - Issue 96. United Nations High Commissioner for Refugees.

United Nations Office for Disaster Risk Reduction. 2019. *Disaster Risk Reduction in the Philippines*. Bangkok, Thailand: United Nations Office for Disaster Risk Reduction. Available at <https://www.unisdr.org/files/68265_682308philippinesdrmstatusreport.pdf>. Accessed 12 October 2022.

United Nations Office for Disaster Risk Reduction. 2021. Asia-Pacific Action Plan 2021-2024 for the Implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030. United Nations Office for Disaster Risk Reduction.

UNODC. n.d. Wildlife, Forest & Fisheries Crime: Implications of Wildlife Trafficking. Available at <https://www.unodc.org/e4j/en/wildlife-crime/module-1/key-issues/implications-of-wildlife-trafficking.html>. Accessed 20 December 2022.

U.S. Embassy in the Philippines. 2021. BFAR-USAID Study Calls for Public Support to Combat Illegal Fishing. Available at <https://ph.usembassy.gov/bfar-usaid-study-calls-for-public-support-to-combat-illegal-fishing/>. Accessed 20 October 2022.

Vicente, Jezreel B, Greg D Ammiyao, Phoebe Mae T Arud, Christopher P Asiaben, Nick R Balunos, Ulyssis D Bangsara, and Anselmo B Cacap. 2020. COMMUNITY CRIME PREVENTION: THE CASE OF A BARANGAY IN THE NORTHERN PHILIPPINES 9 (6).

Villanueva, Rhodina. 2020. DENR focuses on protecting biological diversity in 2020? *The Philippine Star*. Manila, Philippines. Available at <https://faspselib.denr.gov.ph/sites/default/files//200123_PHLSTAR_Villanueva_DENR%20focuses%20on%20protecting%20biological%20diversity%20in%202020.pdf>. Accessed 5 June 2023.

Wickeri, Elisabeth, and Anil Kalhan. 2010. *Land Rights Issues in International Human Rights Law*. Institute for Human Rights and Business. Available at <https://www.ihrb.org/pdf/Land_Rights_Issues_in_International_HRL.pdf>. Accessed 27 February 1923.

World Bank. 2020. *Public Expenditure Review: Disaster Response and Rehabilitation in the Philippines - Technical Report*. Washington DC, USA: World Bank. Available at <https://openknowledge.worldbank.org/bitstream/handle/10986/35064/Disaster-Response-and-Rehabilitation-in-the-Philippines-Public-Expenditure-Review-Technical-Report.pdf?sequence=1&isAllowed=y>. Accessed 6 March 2023.

World Bank. n.d. World Bank Climate Change Knowledge Portal - Philippines. Available at <https://climateknowledgeportal.worldbank.org/>. Accessed 7 November 2022.

World Bank Group. 2021. *Market Study for the Philippines: Plastics Circularity Opportunities and Barriers*. Washington, DC: World Bank. Available at <https://openknowledge.worldbank.org/handle/10986/35295>. Accessed 20 October 2022.

World Bank Group and Asian Development Bank. 2021. *Climate Risk Country Profile: Philippines*. Washington DC, USA: World Bank.

2022. Co-Chairs' Summary: Bali Agenda for Resilience. Available at <https://www.preventionweb.net/publication/co-chairs-summary-bali-agenda-resilience>. Accessed 7 July 2022.

Endnotes

1. Csordas, Robinson, and Wallin 2022.
2. González Esquivel et al. 2023.
3. Csordas, Bennett, and Wallin 2023.
4. Pörtner et al. 2021; Pettorelli et al. 2021.
5. Co-Chairs' Summary: Bali Agenda for Resilience 2022.
6. Nehren et al. 2014.
7. IPCC 2019.
8. FAO n.d.
9. The stocktaking team included a DCAF SSR Advisor, a DCAF project officer, an environmental expert and two local SSR experts.
10. Held in Marikina and Manila (both in Metro Manila) and in General Santos City.
11. Buendnis Entwicklung Hilft and Ruhr University Bochum - Institute for International Law of Peace and Armed Conflict (IFHV) 2022.
12. World Bank n.d.
13. World Bank 2020.
14. World Bank n.d.
15. United Nations Office for Disaster Risk Reduction 2019.
16. GFDRR 2016.
17. United Nations Office for Disaster Risk Reduction 2019.
18. Ibid.
19. Germanwatch places the Philippines fourth on the long-term Climate Risk Index (CRI) for countries most affected by climate change between 2000 and 2019. The Notre Dame Global Adaptation Initiative (ND-GAIN) ranks the Philippines at 113 (out of 182) for vulnerability and readiness (with a ranking of 1 being the best and a ranking of 182 being the worst country in terms of vulnerability and readiness) and the INFORM Climate Change Risk Index, co-led by the European Commission, ranks the Philippines 30th (out of 191) for climate change risk.
20. Office of the President of the Philippines 2017a; Ner et al. 2022.
21. World Bank Group and Asian Development Bank 2021, 25.
22. Ner et al. 2022; Ng 2020.
23. World Bank Group and Asian Development Bank 2021, 24–25; Philippines National Economic and Development Authority 2017, 23.
24. Schachter and Karasik 2022.
25. World Bank Group 2021.
26. International Pollutants Elimination Network 2019.
27. Secretariat for the Acid Deposition Monitoring Network in East Asia 2020.
28. Farrow, Miller, and Myllyvirta 2020.
29. GIZ 2013.
30. Philippines Climate Change Commission 2011.
31. Australian Trade and Investment Commission n.d.
32. Pavlova and Hincks 2013.
33. Magcale-Macandog et al. n.d.; Acosta et al. 2016.
34. Asian Development Bank 2011; UNEP and INTERPOL 2016.
35. UNODC n.d.
36. DA-BFAR 2022.
37. U.S. Embassy in the Philippines 2021.
38. Ibid.
39. Philippine Statistics Authority 2015.
40. Wickeri and Kalhan 2010; adelphi 2016.
41. Crost et al. 2018.
42. World Bank Group and Asian Development Bank 2021, 14; Office of the President of the Philippines and Climate Change Commission 2010.
43. UNHCR 2022.
44. UNHCR 2021.
45. UNDRR 2015; United Nations Office for Disaster Risk Reduction 2021.
46. Associaton for Southeast Asian States 2020.
47. Asia-Pacific Economic Cooperation 2015.
48. Philippines National Economic and Development Authority 2017, 51.
49. Office of the President of the Philippines 2017a.
50. Philippines Climate Change Commission 2011.
51. Congress of the Philippines 2010.

52. World Bank 2020.
53. Senate of the Philippines 2022b.
54. Congress of the Philippines 2010, section 8 and 9.
55. Ibid.
56. Philippines National Disaster Risk Reduction and Management Council 2018.
57. Philippines National Disaster Risk Reduction and Management Council 2020, 67.
58. World Bank 2020.
59. A barangay (native Filipino term for village) is the smallest political unit in the Philippines, and often exists within municipalities and cities, thereby dividing those administrative entities.
60. Ohara, Sawano, and International Centre for Water Hazard and Risk Management (ICHARM) under the Auspices of UNESCO, Public Works Research Institute (PWRI) 1-6 Minamihara, Tsukuba, Ibaraki, Japan 2015.
61. Queensland Government 2022.
62. Examples being the OCD, DENR, (local) DRRMOs and CENROs.
63. NOAH is a project that was started in 2012 by the DOST and is now continued by the University of the Philippines. It produces digital hazard maps that are freely accessible.
64. Growing perennial nitrogen-fixing tree or shrub species are planted along contour lines to create a living barrier that traps sediments and gradually transforms the sloping land to terraced land. SALT increases the soil's water-holding capacity and water runoff while reducing floods and landslides.
65. Buying garbage, cleaning and separating it, and then reselling what is still usable.
66. Alcoseba Fernandez 2022.
67. Philippine Bureau of the Treasury 2012.
68. Flores 2008; World Bank 2020.
69. World Bank 2020.
70. Philippine Bureau of the Treasury 2012; World Bank 2020.
71. Philippine Bureau of the Treasury 2012.
72. World Bank 2020.
73. Philippines National Disaster Risk Reduction and Management Council 2020.
74. Leppert et al. 2018; Domingo and Manejar 2018.
75. Department of Human Settlements and Urban Development 2023.
76. This section covers available staff and equipment for disaster response; storage and warehousing of relief goods were outside the scope of the study.
77. Ohara, Sawano, and International Centre for Water Hazard and Risk Management (ICHARM) under the Auspices of UNESCO, Public Works Research Institute (PWRI) 1-6 Minamihara, Tsukuba, Ibaraki, Japan 2015.
78. Higher-level authorities get involved if two or more of the lower government level bodies are affected: for instance, national authorities get involved if two or more regions are affected, and city/municipal authorities get involved if two or more barangays are affected.
79. Castelo 2019.
80. Philippines National Disaster Risk Reduction and Management Council 2020, 67.
81. ABC News 2012; AFP 2012.
82. Not all actors are treated here, which focuses on actors included in this study.
83. For example the Biodiversity Management Bureau and the Geosciences and Mining Bureau.
84. Department of Environment and Natural Resources 2021a.

85. Senate of the Philippines 2022a.
86. 2022 Asia Environmental Enforcement Awards.
87. Villanueva 2020; Abano and Chavez 2021.
88. Office of the President of the Philippines 2022.
89. National Bureau of Investigation 2022.
90. Biodiversity Management Bureau 2020; Villanueva 2020.
91. National Intelligence Coordinating Agency 2023.
92. Congress of the Philippines 1991.
93. Or MENRO for municipalities.
94. Maderazo 2016.
95. Celeste 2021.
96. Rasul 2008.
97. Congress of the Philippines 1991; Attorneys of the Philippines 2017.
98. European Commission. Directorate General for Environment. 2021.
99. Barreda 2022.
100. Republic of the Philippines 1987, sec. 16.
101. Pope Francis 2015.
102. Office of the President of the Philippines 2017b.
103. Government of the Philippines 2018.
104. Maderazo 2016.
105. Sunstar Philippines 2010; Nem Singh and Camba 2020; Sarmiento 2022.
106. Congress of the Philippines 1998, sec. 3, rule 3.1.
107. Vicente et al. 2020.
108. Congress of the Philippines 1991
109. Department of Environment and Natural Resources 2021c.
110. Department of Environment and Natural Resources 2021b.
111. Alberts 2020.
112. Department of Environment and Natural Resources 2022; TRAFFIC 2019.
113. Rivera, Knight, and McCulloch 2021.
114. 'The phenomenon of "red-tagging" – labelling individuals or groups (including human rights defenders and NGOs) as communists or terrorists – has posed a serious threat to civil society and freedom of expression. The report notes how in some cases those who have been red-tagged were subsequently killed. Others told the UN Human Rights Office they had received death threats or sexually-charged comments in private messages or on social media.' UN Office of the High Commissioner for Human Rights 2020.
115. Ritzhie Mantaring 2022.
116. Hines 2022.
117. Crost et al. 2018.
118. Office of the President of the Philippines 2017a, 17.
119. Crost and Felter 2020; Philippines Anti-Money Laundering Council 2019.
120. Office of Presidential Adviser on the Peace Process 2018.
121. Maderazo 2016. Christie et al. 2009.
122. Government of the Philippines 2018, 60.
123. ASEANAPOL is a coordinating body National Police organisations of ASEAN member countries with the goal to ensure better collaboration in regional policing and against transnational crime; ASEANAPOL 2013.

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