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Conservation Telecouplings

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1 Introduction

The Anthropocene is characterised by widespread defaunation, by extinction rates about 1000 times higher than background rates, and by the extensive transformation of natural ecosystems (Pimm et al. 2014).

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Humanity has caused this biodiversity crisis, mainly via habitat loss, overexploitation, climate change, pollution, and fostering invasive species (Maxwell et al. 2016). Given continued human population growth and surging consumption, the outlook for biodiversity is grim. This is worrisome, as biodiversity underpins nature's contributions to people (Díaz et al. 2018) and as biodiversity loss amplifies other drivers of global change (Hooper et al. 2012).

Identifying effective strategies for lessening biodiversity loss and for balancing human resource use and conservation is therefore a central sustainability challenge. Yet, despite strong and increasing conservation efforts, societies have thus far not succeeded in reversing declining biodiversity trends (Butchart et al. 2010). This is in part due to the sheer magnitude and footprint of some extinction drivers, especially land use and overexploitation (Maxwell et al. 2016; Venter et al. 2016). Conservation efforts also fall short in part due to the difficulty and complexity of many conservation problems (Game et al. 2014). Approaching conservation problems from the perspective of social-ecological systems might improve conservation outcomes by better considering local contexts, agency, system dynamics, or feedback between actors, threats, and conservation actions.

Social-ecological systems around the world are increasingly interconnected through flows of commodities, information, people, or capital (Liu et al. 2013; Eakin et al. 2014; Friis et al. 2016). For example, according to the Food and Agriculture Organization (FAO), international agricultural commodity trade has grown by 4% annually from 1961 to 2016, twice the annual production increase in that period.[1] New technologies for sharing information are spreading rapidly (e.g. mobile phone coverage has increased from 60% of the world population in 2003 to 90% in 2010[2]). Local land-use decisions are increasingly caused by and modulated through distal actors, capital inflows, and distal markets (see Chaps. 2 and 3). As regions become increasingly interconnected, the threats to biodiversity, which always play out locally, are thus ever more linked to distal rather than local causes (Lenzen et al. 2012; Carrasco et al. 2017).

Our understanding of conservation challenges and opportunities brought by such distal connections, however, remains poor. Ignoring distal feedbacks and cross-scale linkages likely often undermines conservation effectiveness. For instance, investing in intensification may escalate, not lower, conservation costs (Phelps et al. 2013). Intensification, to spare land for nature, might also lead to higher, not lower, pressure on land due to rebound effects (Hertel et al. 2014; Meyfroidt et al. 2018). Similarly, agroecological landscapes that balance conservation and agriculture locally might lead to rising pressure on biodiversity at broader scales when food imports to such landscapes rise (Carrasco et al. 2017; Phalan et al. 2016). Conservation thus urgently needs to more deeply consider the spatial decoupling of local threats and distal root causes of these threats.

Studying and addressing distal links also opens up new avenues for conservation. Historically, conservation planning and action have focussed on populations of species or ecosystems of conservation concern in a particular place and on the conservation actions to be implemented there (e.g. protected areas, anti-poaching patrols, reintroduction projects, educational programmes). Recognising telecouplings may bring about new entry points and opportunities for conservation, or allow the strengthening of existing conservation efforts. For example, as information on environmental degradation and biodiversity loss in far-away regions percolates to consumers and companies, the demand for and willingness to implement clean supply chain mechanisms, such as zero-deforestation commitments, grows (Gibbs et al. 2016; Lambin et al. 2018). Understanding supply chain structures may also allow focussing on key actors, such as traders, which might be more effective than addressing large numbers of producers and consumers directly, and may allow the creation of synergies between place-based conservation efforts and other flow-based approaches.

Conservation itself is globalising and responses to local threats to biodiversity increasingly come from afar (Carrasco et al. 2017; Waldron et al. 2017). Such conservation feedbacks can take a range of forms, from inflowing conservation funding, to the engagement of international conservation organisations, capacity building in biodiversity loss regions, land acquisitions by distal conservation-minded individuals and organisations, or supply chain mechanisms such as certification (Fairhead et al. 2012; Tscharntke et al. 2015; Lambin et al. 2018). Conservation planning, policy-making, and on-the-ground action have become major factors forging telecoupled social-ecological systems, and conservation is reshaping interactions and power constellations among actors in these systems. Despite their increasing importance, we still lack a proper conceptual and empirical assessment of distal causes of threats and distal conservation responses.

Here, we define conservation telecouplings as *the coupling of social-ecological systems through distal, conservation-related responses to local threats to biodiversity*. These distal conservation responses are triggered through flows of information from the system undergoing biodiversity loss and environmental degradation to the system that includes conservation-minded societies and actors (and that then link to such actors in the source system). Importantly, the root causes of biodiversity losses can be either local or distal. In the following, we will discuss how conservation telecouplings can be framed and how they might help to identify more effective conservation strategies.

2 Conceptualising Conservation Telecouplings

Biodiversity loss occurs when biodiversity facets (e.g. species populations, particular ecosystems, genetic diversity, or functional diversity) dwindle in response to rising threats. For this chapter, we follow the joint threat definition of the International Union for the Conversation of Nature (IUCN) and the Conservation Measures Partnership (CMP), which defines direct threats as the proximate human activities or processes that cause the destruction or degradation of biodiversity facets of conservation concern (Salafsky et al. 2008). In an increasingly interconnected world, commodities are transported flexibly across the world and flows of information, capital, people, and norms now link formerly remote and distal places (Carrasco et al. 2017). Thus, although threats are often the result of direct actions carried out by actors *within* a social-ecological system undergoing biodiversity loss, the root causes of threats are increasingly situated *outside* that system. For example, growing coffee consumption in the Western world leads to deforestation in Vietnam (Meyfroidt et al. 2013), or the use of wildlife parts in Asia leads to pangolin or rhino poaching in Africa (Wilcove et al. 2013).

The telecouplings framework, that describes linkages between distal, yet clearly defined social-ecological systems (see Chaps. 2, 3, and 4 in this book), could be a useful heuristic to more fully embrace the "distal nature" of what threatens local biodiversity. A starting point is to distinguish threats linked to root causes that are part of the same system (Fig. 15.1A, left)

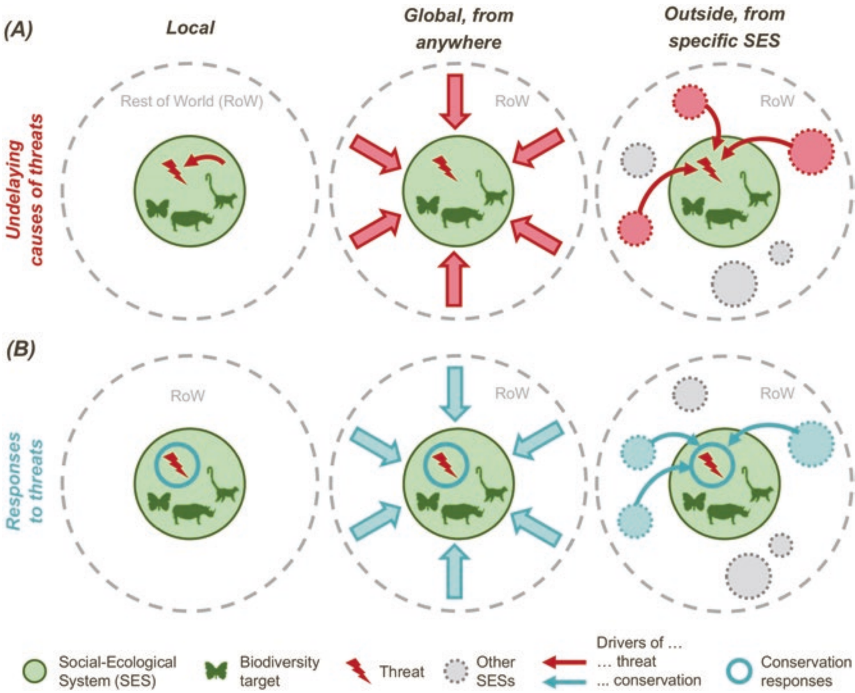

Fig. 15.1 Origins of biodiversity threats and conservation responses. (**A**) Threats to species or ecosystems of conservation concern (i.e. biodiversity targets) play out locally but can be caused by processes and actors that are inside a specific social-ecological system (e.g. shifting cultivation; left), that are outside that system but cannot be traced back easily (e.g. ocean acidification; centre), or that are outside that system but originate from another specific and distal social-ecological system (e.g. the expansion of cash crops for a specific consumer market; right). (**B**) Conservation responses to threats can either originate within a social-ecological system (e.g. cultural taboos; left), originate from elsewhere in an unspecified manner (e.g. global agreements; centre), or originate from specific social-ecological systems (e.g. inflow of conservation funding for a specific project, land purchase for private protected areas, a country's legal framework; right)

from situations where the root causes for local threats are outside of that system. It is often difficult to trace back the distal root causes to a particular source system, as in the case of ocean acidification leading to coral bleaching or global warming leading to changes in mountain vegetation (Fig. 15.1A, centre). However, tracing back distal root causes through actor networks to a specific system is possible and can improve the understanding of the direct drivers of threats, such as in the case of traded agricultural or wildlife products that exert pressure on biodiversity in their source regions (Fig. 15.1A, right, see also Chap. 4).

Similarly, conservation responses to local threats to biodiversity can be local or distal (Fig. 15.1B). Sometimes, responses emerge from within a social-ecological system (Fig. 15.1B, left), for example where ecosystem degradations trigger local communities to manage resources as commons (Rudel 2011), to organise resistance against external drivers of biodiversity loss (e.g. land purchases by actors seeking to expand agriculture), or to establish no-take zones or taboos to prevent over-utilisation of valued species (Daw et al. 2015). Conservation responses can also come from outside of a social-ecological system, again either in a diffuse or ubiquitous manner (i.e. from *anywhere* in the "outside world," Fig. 15.1B, centre). For example, in the form of international agreements (e.g. CITES agreement regulating wildlife trade, REDD+ mechanism). Commonly however, conservation responses to local threats originate from *somewhere* (i.e. another social-ecological system; Fig. 15.1B, right), for example, where foreign conservation organisations raise funds to invest in conservation planning, protected areas, or capacity building in a specific place that is undergoing biodiversity loss, where governmental bodies enact conservation legislation or implement a protected area, or where foreign actors purchase land for nature protection.

Classifying root causes of threats and conservation responses into local versus diffuse versus originating from a specific social-ecological system allows the identification of distinct combinations of threats and responses. We understand conservation telecouplings as the coupling of two or more social-ecological systems through *distal* conservation responses to threats to biodiversity. Proximate drivers of these threats are always local (e.g. agricultural expansion) and ultimately lead to missing local (and possibly global) biodiversity targets. The underlying causes of these

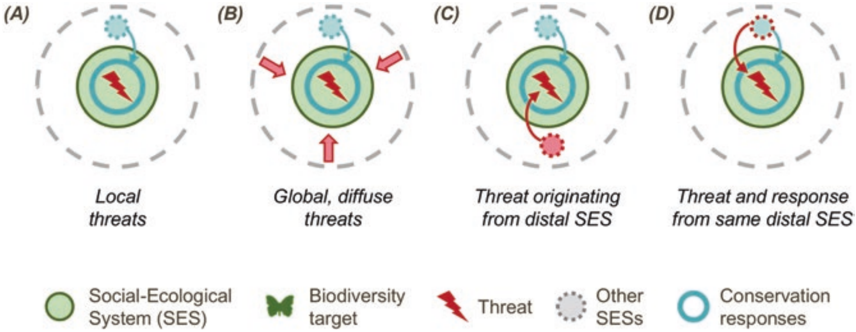

Fig. 15.2 Types of conservation telecouplings. We here define conservation telecouplings as the coupling of *distal* social-ecological systems through *distal* conservation responses to threats to biodiversity. The underlying drivers of these threats can originate from within the social-ecological system where biodiversity loss takes place (**A**), from the outside in a ubiquitous manner (**B**), or from a specific, distal social-ecological system (SES). Threats and conservation responses can originate from different (**C**) or identical (**D**) social-ecological system (legend: see Fig. 15.1)

threats, however, can originate from within the social-ecological system where biodiversity loss takes place (Fig. 15.2A), from the outside, in a diffuse manner (Fig. 15.2B), or from a specific, distal social-ecological system (Fig. 15.2C and D). As information about local biodiversity loss percolates to other systems, concerns about these losses trigger responses of distal actors (e.g. through campaigning, financing conservation action, policy discussions and forging conservation telecouplings). Threats and conservation responses can originate from different (Fig. 15.2C) or identical (Fig. 15.2D) social-ecological systems.

Conservation telecouplings are thus characterised by two types of flows: a flow of information about ongoing biodiversity loss to a distal system containing actors concerned about these losses (Fig. 15.3) and feedback flow in the form of a conservation response. Information flows about biodiversity loss (e.g. rhino poaching, deforestation) can percolate through the press, through social media, or targeted information campaigns by conservation actors in the source system A (Carrasco et al. 2017). As this information reaches system B, concern about these losses arises, which in turn mobilises distal conservation actors (e.g. international conservation organisations, conservation-minded individuals, sustain-

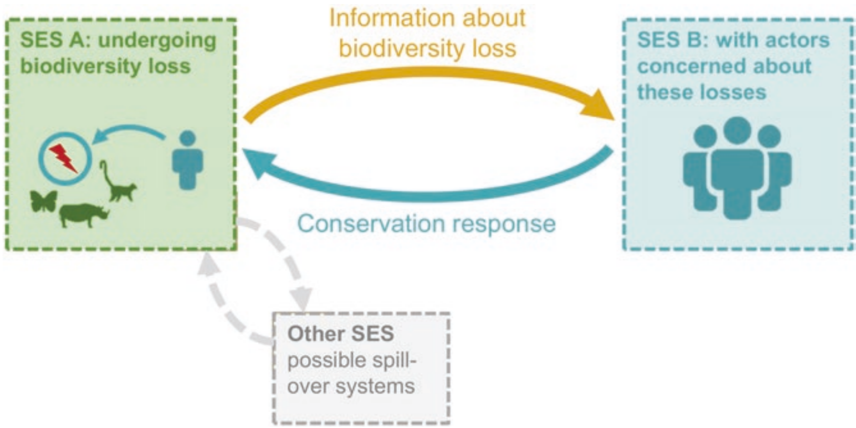

Fig. 15.3 Systems in conservation telecouplings. One social-ecological system (SES A) experiences biodiversity loss and sends an information flow to another system (SES B) that contains actors concerned about these losses. This triggers feedback in the form of mobilising conservation actors in that system. These actors might link to, and work together with, local conservation actors to implement actions. These actions (e.g. new protected areas) might trigger unintended spillover effects to other SES (e.g. relocation of land-use pressure to another region)

ability branches of companies). This triggers distal conservation response, such as conservation funding or supply chain mechanisms, which typically flow through local conservation actors in system A (e.g. local NGOs or an indigenous community). As conservation actions are implemented (e.g. the creation of a protected area), spillovers to other systems might happen (Liu et al. 2015). From a conservation perspective, these spillovers can be negative (e.g. leakage of land-use pressure to other regions) or positive (e.g. mobilisation of conservation in another region).

Importantly, all arrows linking systems are simplifications of interactions that occur within and along actor networks (Eakin et al. 2014). The coupling of distal systems is initiated once these interactions reach critical levels. For instance, information about biodiversity losses spreading from system A might mobilise distal actors only when these losses are stark, or if the local institutions and governance mechanisms in social-ecological system A are unable to address these losses effectively. Similarly, distal conservation responses might only be triggered if the awareness in social-ecological system B reaches certain thresholds (e.g. attention or mobilisation among consumers, funders), or if organisations aiming at addressing biodiversity loss in system A are able to build coalitions with other organisations in system B (Rudel 2011).

3 Local versus Distal Causes of Threats to Biodiversity

Understanding whether the root causes of threats to biodiversity are local or distal is important (Fig. 15.2), because different conservation responses are possible or necessary depending on whether the actors driving these threats are embedded in the system undergoing biodiversity loss, in a distant system, or if they cannot easily be located (e.g. in the case of diffuse threats such as ocean acidification). Examining the threats listed in the Unified Classifications of Threats and Actions (Salafsky et al. 2008)[3] reveals that eight out of eleven main threat categories listed are potentially or dominantly "telecoupled," that is, originating from and driven by actors in another, distal social-ecological system.[4] Only three main threat categories appear to be solely due to either local causes (i.e. pollution, geological events) and/or distal, but diffuse causes (e.g. climate change, pollution).

Out of the eight "telecoupled" threat categories, most occur in relation to some form of land use, particularly the threat categories of *residential and commercial development*, *agriculture and aquaculture*, and *energy production and mining*. Most of the land uses causing these threats (e.g. agricultural expansion leading to habitat loss) are expected to become more telecoupled in the future. For example, agro-industrial farming and aquaculture will continue to expand in many regions of the world, due to structural change in agriculture, whereas the importance of subsistence farming (e.g. shifting cultivation) and smallholder agriculture is expected to decline (Haberl et al. 2014). As a result, the rapidly growing international trade in agricultural and forestry commodities is an increasingly important driver of biodiversity loss. While few studies have addressed biodiversity loss embodied in trade, existing work clearly highlights the key role of agricultural exports for threatening local biodiversity (Lenzen et al. 2012; Chaudhary and Kastner 2016), especially in the tropics (Fig. 15.4).

Fig. 15.4 Biodiversity loss embodied in agricultural exports from Indonesia. Threats to biodiversity (expressed as the number of mammals, birds, reptiles, and amphibians committed to extinction) are largely caused by distal consumption (highlighted in red, with the strength of the arrows indicating relative pressure). The largest threat originates from the European Union's collective consumption of Indonesian agricultural products (committing 28 species to extinction). Source: Chaudhary and Kastner (2016)

Other telecoupled threats include *transportation and service corridors* (e.g. road construction, shipping lanes, air traffic), *biological resource use* (e.g. hunting, logging, collection of plants), *human intrusion and modifications* (e.g. recreational activities, armed conflict), *natural system modification* (e.g. dam building, fire suppression), and *invasive and other problematic species and genes* (e.g. alien species or diseases). While all of these can be driven by both local and distant actors or phenomena, the importance of the telecoupled version of these threats is expected to increase. For instances, as urbanisation progresses (e.g. 68% of the global population are expected to live in cities by 2050[5]), hunting for meat in the tropics increasingly occurs in order to satisfy urban demands rather than for the subsistence of rural populations (Brashares et al. 2011; Ripple et al. 2016).

Finally, there are often large synergistic effects among threats (Dirzo et al. 2014; Maxwell et al. 2016), particularly between land-use and other telecoupled threats. For example, the expanding trade of agricultural commodities does not only embody major biodiversity losses via habitat destruction in source regions (Chaudhary and Kastner 2016; Chaudhary et al. 2017), but also plays a key role in wildlife trafficking and the invasions of exotic species (e.g. through creating options for smuggling or species translocations via agricultural trade). Analysing such links through the lens of telecouplings can promote a better understanding of synergies among threats.

4 Conservation Responses in Telecoupled Systems

The key element of conservation telecouplings is the distal conservation response (Fig. 15.3). Reviewing commonly implemented conservation actions, as categorised by the Unified Classifications of Threats and Actions (Salafsky et al. 2008),[6] reveals that, in principle, all actions can occur at least partly through conservation telecouplings. In other words, there is no category of conservation action that is necessarily always initiated, driven and implemented from within a social-ecological system.

Distal conservation responses occur in relation to all types of threats—be they local, diffuse, or telecoupled (Fig. 15.2). For example, expanding smallholder farming (a largely local threat) might trigger foreign conservation actors to fund protected area expansion, such as in the case of Gorongosa National Park in Mozambique.[7] Likewise, diffuse threats, such as rising temperature due to climate change that shifts the climate niche of species faster than they can disperse, might trigger assisted recolonisation projects in areas where climate will become suitable in the future, such as in the case of the Western larch (*Larix occidentalis*) in British Columbia (Klenk and Larson 2015). Finally, as an example of a telecoupled threat, increasing concerns about deforestation in Amazonia due to the production of agricultural commodities for global markets have triggered almost all large international conservation organisations to engage in this region, at various institutional levels, which has played a part in the major expansion of the protected area network there since the 1990s (Walker et al. 2009).

As the importance of telecoupled threats increases in the Anthropocene, so does the relevance of conservation telecouplings. For example, the world's largest international conservation organisations, World Wildlife Fund (WWF), Conservation International (CI), The Nature Conservancy (TNC), and Wildlife Conservation Society (WCS), all of them originating from the Global North, have grown substantially during the last 30 years (e.g. the total programme expenses of these four NGOs have almost doubled since 2001[8]) and are more than ever engaging in the Global South (e.g. WCS works in 15 African countries, 16 Asian countries, and 12 Latin American and Caribbean countries).

Similarly, as the volume of conservation funding spent by countries has increased (e.g. the United Kingdom's public spending on conservation increased by 76% between 2000 and 2012[9]), so has the share of conservation funding spent abroad. While exact numbers are not readily available, recent estimates suggest that US$840 million of foreign aid went into biodiversity-related projects in lower-income countries between 2002 and 2008, a sum similar to the domestic conservation spending (US$904 million) in these countries (Waldron et al. 2013). Multilateral organisations (e.g. The World Bank, the European Union, Global Environment Facility) contributed US$548 million, with another US$290 million coming from individual countries in the EU and North America. In the Amazon Basin alone, international donors contributed at least US$215 million annually during 2007–2012 (De La Mata and Riega-Campos 2014) and US$357 million annually during 2013–2015 (Strelneck and Vilela 2017) (Fig. 15.5).

Telecouplings also can be leveraged for renewing the pathways for conservation actions. New conservation-minded individuals, companies, and states can create new conservation telecouplings. For example, private investments in conservation lands, such as those that led to the establishment of the Iberá Reserve in Argentina or a number of Andean National Parks in Chile,[11] have become common phenomena recently (Stolton et al. 2014). Distal actors, from cities or abroad, now frequently invest in ecotourism infrastructure partly to provide incentives to maintain natural areas via alternative income strategies (Brandt and Buckley 2018). Countries now actively engage and invest in international conservation funds, such as Norway's massive contributions to the REDD programme.[12]

Perhaps most importantly, as consumer pressure on companies rises, incentives to clean supply chains and to source raw materials and

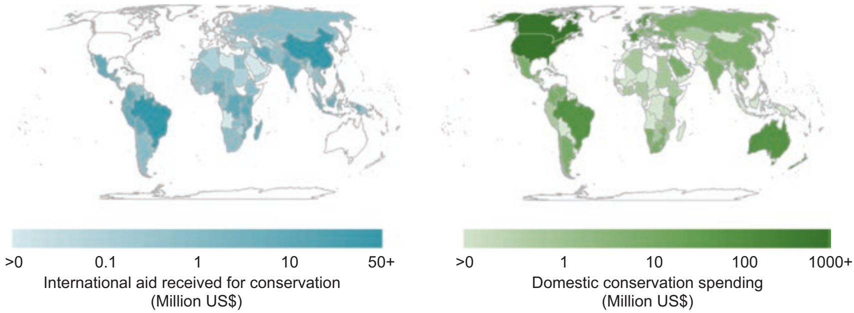

Fig. 15.5 Foreign and domestic conservation spending. Conservation spending has increased substantially recently, with major funding flowing from the Global North to the Global South. The top five recipients in 2002–2008 were China, Brazil, India, Mexico, and Colombia. Indonesia, a country experiencing substantial threats to local biodiversity (see Fig. 15.4), received US$500 million for conservation purposes during 2000–2013.[10] Data source: Waldron et al. (2013)

commodities in sustainable ways are increasing, spawning a wide range of certification and labelling schemes (Lambin et al. 2018). Such supply chain mechanisms can be grouped into four main categories: (1) collective aspirations by multi-stakeholder groups, such as the Consumer Goods Forum, the Tropical Forest Alliance 2020, the 2014 New York Declaration on Forests, and the 2015 Amsterdam Declarations; (2) company pledges such as zero-deforestation commitments by Wilmar, GAR, APP, Unilever, Cargill, and McDonalds; (3) company codes of conduct such as Unilever's Responsible Sourcing Policy; and (4) sector standards including incentive-based mechanisms (e.g. the Forest Stewardship Council certification for timber, the Rainforest Alliance for coffee and other tropical products, or those developed by roundtables), and sanction-based mechanisms such as moratoria on purchases from suppliers that do not comply with standards (e.g. the Soy and the Beef Moratoria).

Monitoring the effectiveness of such supply chain initiatives is far from trivial and requires combining distinct sets of information on traceability of the different actors involved in a supply chain, transactions and investment decisions, social and environmental impacts, actors' policies and commitments, actual actions undertaken, and the effectiveness of distinct interventions and actions (Gardner et al. 2018). Information is currently scarce, but supply chain monitoring initiatives are gaining momentum. These include platforms to inform on the most influential actors in supply chains and their commitments (e.g. Forest 500 and Company Action on Deforestation by Global Canopy or Supply Change), the impacts of key commodities (e.g. Global Forest Watch Commodities), or supply chain connections (e.g. TRASE). Most data and initiatives still focus on a few commodities (i.e. soy, palm oil, and beef) produced in a few countries (e.g. Brazil and Indonesia) but coverage remains scarce in countries where deforestation rates are increasing rapidly (e.g. Paraguay, many African countries), and on most other commodities (Grimard et al. 2017). Current research suggests that supply chain mechanisms offer real opportunities, but key challenges related to both scientific (e.g. coverage, precision, and detail of the monitoring) and political aspects (how to govern increased data availability and transparency) remain.

5 Conservation Opportunities in Telecoupled Systems

Globalisation and the corresponding increasing interconnectedness of places and people alter the context in which conservation is taking place, yet conservation action and planning are poorly equipped to deal with such distal phenomena at the present time. Conservation telecouplings, as introduced here, provide a conceptual framework that can be used to identify and account for such distal phenomena—specifically on how information flows about biodiversity loss link systems across large distances, and how this triggers distal conservation actions. Considering the distal nature of threats and conservation responses can help to identify new entry points for conservation approaches (e.g. along supply chains), for increasing conservation effectiveness (e.g. by combining area-based and supply chain-based tools), and for avoiding unwanted conservation outcomes (e.g. avoiding leakage).

Mainstream conservation has predominantly focussed on populations, species, or ecosystems of conservation concern in a particular place, and sometimes been criticised for ignoring people and their agency (Stephanson and Mascia 2014; Iwamura et al. 2018). As new approaches for considering human agency in biodiversity models are emerging

(Grimm et al. 2017), a conservation telecouplings framework could build on them to consider both the distal nature of threats and conservation responses, and the actor networks through which these distal links affect biodiversity. Figure 15.2 provides a starting point for typifying different conservation responses and to identifying which combinations of conservation responses are most appropriate for distinct configurations of distal versus local threats. For example, place-based conservation such as protected areas and zoning might be effective where threats are diffuse, while supply chain interventions appear more appropriate where threats are clearly linked to particular actors (Piquer-Rodríguez et al. 2018). Merging analytical lenses that are place based and that are focussed on actor networks can also help to identify key entry points for conservation (e.g. where supply chains narrow down to just a few traders or retailers) and to decide where, in space and in actor networks, interventions are promising.

Conservation actions are often less effective than expected or fail altogether (Butchart et al. 2010). Ignoring the distal nature of threats and conservation responses might be a key reason for this. For instance, implementing strict protected areas might increase competition for land, thereby escalating the costs of future conservation efforts (Armsworth et al. 2006). Likewise, considering the actor networks linked to threats (e.g. agricultural expansion into the forests of the South American Chaco) can highlight which actors are more or less flexible in relocating their activities to other regions once conservation actions are implemented (e.g. the relocation of activities from the Brazilian Amazon to the Cerrado or the Chaco in response to tightening regulation). This, in turn, can help in the avoidance of leakage effects. The growing importance of distal links also highlights the need to develop a new generation of conservation planning tools that can build on recent advances in conservation prioritisation to help decide which combinations of place-based, actor-based, or supply chain-based interventions are most likely to maximise conservation outcomes, to minimise conflicts between conservation and other goals, or to minimise conservation costs (Wilson et al. 2010; Cattarino et al. 2015; Hanson et al. 2017; Law et al. 2017).

Finally, a conservation telecoupling framework can provide a better understanding of the nature of distal conservation interventions. Some regions, such as Amazonia, Madagascar, or Indonesia, have received considerable attention globally, with many conservation telecouplings emerging in response, while other biodiverse regions, such as the Cerrado, the Chaco, or Africa's rainforests, have not yet been focussed on. Understanding when and how conservation efforts are triggered, which actors are most likely to engage under which conditions, and how conservation interventions can lead to snowball effects and positive spillovers (e.g. the mobilisation of conservation actors and actions) are important knowledge gaps in an increasingly telecoupled world undergoing accelerating biodiversity loss.

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Notes

1. Food and Agricultural Organization: www.fao.org/faostat.
2. The World Bank (2012): *Maximising Mobile*. Information and Communications for Development 2012. Washington, DC: International Bank for Reconstruction and Development/The World Bank.
3. Full list: www.iucnredlist.org/technical-documents/classification-schemes/threats-classification-scheme.
4. When carrying out this categorisation, we adhered to a Euclidean concept of distance, meaning that different social-ecological systems are separate geographic spaces (e.g. cities linked to rural systems in their hinterland or too far-away regions through trade). Other concepts of distance, such as social or institutional distance, might be equally relevant (see Chaps. 3, 9, and 18) but are omitted here.
5. UN World Urbanization Prospects 2018: https://esa.un.org/unpd/wup/.
6. Full list: www.iucnredlist.org/technical-documents/classification-schemes/conservation-actions-classification-scheme-ver2.

7. www.gorongosa.org/our-story.
8. Charity Navigator. Historical Data: www.charitynavigator.org.
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10. http://aiddata.org/realizing-agenda-2030.
11. www.tompkinsconservation.org/home.htm.
12. www.regjeringen.no/en/topics/climate-and-environment/climate/climate-and-forest-initiative/kos-innsikt/samarbeidspartnere/id2345203/.

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