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Unpacking SDG 15, its targets and indicators: tracing ideas of conservation

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ABSTRACT

The United Nations' Sustainable Development Goals (SDGs) include a goal focusing on terrestrial biodiversity conservation: SDG 15, dubbed Life on Land. There has been little critical social-science analysis of how SDG 15, its targets and indicators understand conservation. This article contributes to closing this gap by analysing in detail SDG 15 and affiliated progress reports. Contravening the SDGs' stated objective of leaving no one behind, the paper shows that SDG 15 ignores vital connections between human and nonhuman nature, fails to centre people and champion justice systematically, while reaffirming unsuccessful previous indicators. The article argues that SDG 15, its targets and indicators thus perpetuate ideas of conservation which exacerbate inequalities and prevent 'transforming our world'. These structural shortcomings risk placing SDG 15 in the same intellectual vein as other contemporary large-scale conservation planning efforts in terms of lacking inclusion and recognition of human lives and livelihoods.

KEYWORDS

Conservation; Sustainable Development Goals; inclusion; inequalities; transformation

Introducing SDG 15

In 2015, the United Nations established 17 Sustainable Development Goals (SDGs; UN, 2015a). Aiming to go beyond previously agreed language (Chasek & Wagner, 2016), the goals were to promote people, planet, prosperity, peace and partnerships: the stated objective of Agenda 2030, of which the SDGs are a part, is '[t]ransforming our world' (UN, 2015a, 2015b, 2021b). Between now and 2030, the SDGs shape policy-making and funding globally (Gabay & Ilcan, 2017; Hope, 2020; Spann, 2017; Weber, 2017). The closest link to terrestrial biodiversity conservation, a vital task considering accelerating biodiversity loss (Diaz et al., 2019), is visible in SDG 15, dubbed life on land. It aims to '[p]rotect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss' (UN, 2021b, p. 16). In its affiliated targets (12) and indicators (15), monitored through diverse progress reports (e.g. UN, 2018, 2020, 2021a), SDG 15 makes legible what ideas shape conservation's benefits and costs for planet and people in the SDGs. Consequently, this article asks: what ideas of conservation are present in SDG 15, and with what implications?

This is a necessary research question because critical social-science analysis of SDG 15's targets and indicators in relation to wider debates on conservation and the Sustainable Development Goals

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has been limited. The SDGs have remedied some of the issues raised about their predecessors, the Millennium Development Goals (MDGs), which were criticized as being formulated by few rich countries (Sen & Mukherjee, 2013), discounting the agency of the poor (Poku & Whitman, 2011), or using a technocratic approach which failed to direct targets at wealthy nations (Carant, 2017). Consequently, one almost universally lauded feature of the SDGs was identifying targets and goals requiring wealthy countries to act (Death & Gabay, 2015; Fukuda-Parr, 2017). However, there has also been criticism (e.g. Fletcher & Rammelt, 2017; Hope, 2020; Salleh, 2016; Spann, 2017): not only does the basic notion of ‘sustainable development’ remain a problematic term (cf. Adams, 2010; Lele, 1991) given allegations of being an oxymoron and relegating the environment to a mere enabler of socio-economic progress. More specifically, the SDGs have been argued to turn a very specific, neoliberal, capitalist idea of development (Weber, 2017), including ecological modernization notions of valorizing nature (Weber & Weber, 2020), into a universal project. In the conservation literature, there have been diverse calls to recognize the importance of ecosystem viability for the SDGs (e.g. Reid et al., 2017; Vasseur et al., 2017). However, despite SDG 15’s relevance in shaping monitoring, funding and policy between now and 2030, there has been comparatively little work unpacking its conceptual underpinnings and practical implications by critical social science. Ideas of conservation, such as what nature to aim for, and how what humans relate and matter to that nature, shape different organizations and individuals’ approaches (e.g. Brockington et al., 2008; Cronon, 1996; Sandbrook, 2015; Sandbrook et al., 2019). Consequently, there is a need to explore what ideas of conservation the SDGs champion, and with what implications.

Exploring SDG 15

SDG 15 ‘Life on land’ is divided into twelve targets (cf. Appendix 1 for details). The outcome targets, 15.1–15.9, encompass diverse issues, ranging from protecting terrestrial ecosystems and particularly important biodiversity sites (15.1) via sustainable forest management (15.2) and halting land degradation (15.3) to mountain biodiversity (15.4). Combating species extinction (15.5), access and benefit-sharing (15.6), illegal wildlife trafficking (15.7), invasive alien species (15.8) and incorporating biodiversity values into planning (15.9) complete the outcome targets. The means of implementation targets, 15.a to 15.c, focus on increasing funding for biodiversity (15.a) and sustainable forest management (15.b), and on capacity-building to combat illegal wildlife trafficking (15.c).

Inspired by a special issue in this journal investigating the SDGs through the lens of leaving no-one behind (Gabay & Ilcan, 2017),¹ this paper reviews SDG 15 and its progress reports following the template of Fletcher and Rammelt (2017)’s analysis of decoupling in the SDGs and subsequent United Nations Environment Programme reports. It explores four key issues through specific conceptual lenses: firstly the reuse of previously unattained indicators through Žižek’s disavowal (1989); and secondly the idea of non-inclusive (Tallis & Lubchenco, 2014) and non-people-centred (Sandbrook et al., 2019) conservation. A third focus is ignoring connections in light of Salleh’s (2016) and Plumwood’s (2003) thoughts on human-nature separation, and finally the lack of emphasis on Menton et al.’s (2020) justice.

The paper argues that SDG 15, its targets and indicators perpetuate ideas of conservation which do not sufficiently acknowledge the manifold relations between more-than-human and human nature and therefore may prevent ‘transforming our world’. Its structural shortcomings, i.e. failing to acknowledge interdependencies and connections between conservation and livelihoods, to centre people and to prioritize justice, place the SDGs in a similar intellectual vein as other

contemporary large-scale conservation planning and mapping efforts which have been criticized for lacking recognition of human lives, livelihoods and lands (Agrawal et al., 2020; Dutta et al., 2020; Kashwan et al., 2021; Schleicher et al., 2019). While critical scholars may not consider this argument surprising, it is important to trace in the detail of SDG 15's targets and indicators how these framings and their implications contradict the SDGs' stated objectives of transforming our world also in conservation. The study used a three-step process of reviewing in detail goal, targets and indicators, prior suggestions for indicators and metadata provided by the United Nations Statistics Division as of May 2021, examining existing conservation agreements and analyzing subsequent progress reports on SDG 15.

SDG 15 and disavowal

The ideas enshrined in SDG 15 indicators lean heavily on prior agreements. On the one hand, this highlights necessary continuity, with indicators proposed by international agencies and entities (UN, 2015c), but on the other hand equally chimes with Žižek's idea of disavowal, i.e. a 'means for an ideology to take its own failure into account in advance' (1989, p. 142). SDG target 15.1 on terrestrial ecosystems and indicator 15.1.2, which aim to protect a certain percentage of the planet, have gone through prior, slightly different iterations in the Convention on Biological Diversity's 2010 biodiversity target (CBD, 2004) and in Aichi Biodiversity Target 11 (CBD, 2010). Firstly, this approach contradicts a stated goal of the Open Working Group developing the SDGs' indicators which, in keeping with the SDGs' objective of transforming our world, had sought to move away from previously agreed language (Chasek & Wagner, 2016). Reusing the same language secondly reiterates countries' failure to attain them previously (Silva & Topf, 2020). This is visible particularly in 15.6 on installing mechanisms for fair and equitable access and benefit-sharing, which does not state a year by which this goal is to be attained, unlike other SDG 15 targets and indicators (e.g. 15.4, 15.5, 15.8). Aichi Biodiversity Target 16 had specified 2015 as the deadline for the same objective. Reusing this indicator highlights that it has not yet been attained, while removing a deadline constitutes a step back: this recalls Fletcher and Rammet's (2017) characterization of Žižek's disavowal as a state of half-knowing, in which there is a superficial acknowledgement of the illusion in place, yet it is nevertheless adhered to.

Non-inclusive, non-people-centred conservation?

The substance of SDG 15's indicators raises broader questions about the degree to which SDG 15's ideas of conservation are people-centred and inclusive. Sandbrook et al. (2019) identify as key elements of people-centred conservation giving voice to those affected by conservation and advancing human well-being. However, SDG 15 as currently constituted has more hallmarks of what they classify as science-led ecocentrism, i.e. protecting biodiversity for nature's sake and maintaining strict protected areas (Sandbrook et al., 2019).

Firstly, the only implicit mention of poverty in SDG 15 comes in connection with Target 15.9's idea of incorporating biodiversity values into poverty reduction strategies, which in part still has no data (as of May 2021; UNEP et al., 2019) despite being based on Aichi Target 2 (CBD, 2010). Equally, SDG 15's only mention of communities comes in 15.c, in reference to building communities' capacity to combat wildlife poaching. Aichi Target 14 acknowledges communities' role e.g. with a focus on preserving ecosystem services taking into account the needs of women, indigenous and local communities and the poor and vulnerable (CBD, 2010). While one may question

whether the sheer inclusion of the words women, indigenous and local communities and poor and vulnerable makes a difference, the wording creates some expectations of inclusion to which the Aichi Targets, unlike SDG 15, can be held.

Finally, Aichi Target 18 (CBD, 2010) discusses the importance of incorporating indigenous knowledge, which is equally unaddressed by SDG 15 (Baptiste & Martín-López, 2015). Broader questions have been raised about a need for conservation that is more inclusive of diversity, including diverse knowledges and contributions (Kashwan et al., 2021; Sze et al., 2021), and has less agenda-setting by few, largely male (Tallis & Lubchenco, 2014), largely Global Northern² voices (Kothari, 2021; Mbaria & Ogada, 2016; Milner-Gulland, 2021; Rodríguez et al., 2007).³ Even the 2018 High-Level Political Forum's (HLPF) progress review of SDG 15 emphasizes the importance of sustainable co-management with local communities (UN, 2018), echoing a 2018 progress assessment on the Aichi Biodiversity Targets which emphasizes considering societal factors such as poverty or livelihoods, and working more systematically with local communities (CBD, 2018). In contravention of Aichi Target 11's requirement of equitable management of protected areas, the expansion of state-owned-and-managed protected areas can come at the expense of indigenous and local communities, whose knowledges and efforts in conserving nearly 2 billion hectares of land often go unrecognized (Tauli-Corpuz et al., 2020). This lack of recognition also ignores that indigenous lands have been effective at limiting deforestation and environmental degradation, partly more so than protected areas (Sze et al., 2021). However, SDG 15 equally has no mechanisms to protect and respect indigenous and local communities' lands, rights and knowledges. Its indicators and targets – all quantitative (UN, 2018, p. 9) – do not mandate listening to those whose lives and livelihoods are immediately affected by conservation-related decisions and to those who, as individuals or groups, are often disadvantaged by income, status, gender, or (dis)ability inequalities.

Cementing blindness: SDG 15's indicators

As discussed above, the SDGs overall are characterized as being 'integrated and indivisible' (UN, 2015a, p. 1). In metadata offered by the United Nations Statistics Division, there is a section for each indicator which states related indicators (UN Stats, 2021). However, despite the manifold ways that biodiversity and humans are linked, SDG 15's indicators only specify a very limited number of related indicators, as Table 1 illustrates:

Table 1. List of SDG 15 indicators and their specifications of related indicators, as of May 2021.

SDG 15 indicator	Related indicators	Sources
15.1.1	15.2.1, Sustainable forest management	FAO (2021a)
15.1.2	Not specified	UNEP-WCMC, BLI & IUCN (2020a)
15.2.1	15.1.1, Forest area as a proportion of total land area	FAO (2021b)
15.3.1	2.4.1 (agriculture); 6.6.1 (clean water); 11.3.1 (settlements); 15.1.1 (forest cover); 15.2.1 (forests)	UNCCD (2021)
15.4.1	Not specified	UNEP-WCMC, BLI & IUCN (2020b)
15.4.2	6.6.1 (clean water); 15.1.1 (forest cover), 15.2.1 (forests)	FAO (2021c)
15.5.1	Not specified ⁴	IUCN & BLI (2021)
15.6.1	N/A	Secretariat of the CBD (2021)
15.7.1	Not specified	UNODC (2016a)
15.8.1	Specified as 'Not available'	IUCN (2018)
15.9.1	15.a.1 (funding for biodiversity), 15.b.1 (funding for forests), but 'not directly'	UNEP, CBD, UNSD & UNEP-WCMC (2019, p. 7)
15.a.1	Not specified	OECD (2020a)
15.b.1	Not specified	OECD (2020b)
15.c.1	Not specified	UNODC (2016b)

Source: Author based on sources as indicated.

Immediately apparent is the volume of SDG 15 indicators which, according to their own metadata, have no connections to other SDGs. While there are some internal links between indicators and targets within SDG 15, explicit connections to other SDGs to actualize the SDGs' indivisibility are lacking. The HLPF's progress review on SDG 15 emphasizes the importance of acknowledging the centrality of SDG 15 for goals around 'climate change, water, food security, gender equality, and leaving no one behind' (UN, 2018, p. 7). Among this enumeration, the above-detailed SDG 15 indicator connections only reflect the emphasis on water, not climate change, food security, power dynamics including the gender dimension, or the poverty aspect of leaving no-one behind. What is more, this raises the question of how the intended balance between the environmental, economic and social dimensions of sustainable development (UN, 2015a, p. 1) is to be attained, if there are no mechanisms to measure how the stipulations of one goal, target and indicator affect other dimensions and thus safeguard internal coherence. More generally, questions have been raised about the lacking acknowledgements of trade-offs and interdependencies between different SDGs (e.g. Pradhan et al., 2017; Scharlemann et al., 2020). Despite the SDGs' stated objective of indivisibility, there appear to be significant limits in the degree to which SDG 15's connections and interactions with social and economic SDGs can be measured or monitored. This lacking acknowledgement of connections continues an abiding understanding in conservation of humans and nature as being separable and separated (Plumwood, 2003; Salleh, 2016) despite the manifold, intricate connections between them (Sandbrook, 2015).

In addition to these intellectual blind spots, there are also abiding monitoring blind spots. Tier II indicators, i.e. indicators with no data, are still present even several years after the SDGs were passed. For example, there is a Tier II indicator, 15.7.1 for the target combatting illegal wildlife trafficking, i.e. an area in which considering conservation in isolation from human aspects can yield particularly violent results (Duffy et al., 2019). The same indicator is repeated for means of implementation target 15.c.1, meaning that the one target which mentions communities, albeit only as facilitators of fighting poaching, does not have data to trace it, as of May 2021. Equally, 15.9.1 on incorporating biodiversity values into national planning has currently no data, though the methodology was developed in 2019 (UNEP, CBD, UNSD & UNEP-WCMC, 2019).

Beyond this lack of explicit connections to other SDGs that even the progress review acknowledges as being linked, SDG 15's indicators themselves risk furthering separation. Three indicators, 15.1.2 on terrestrial ecosystems, 15.2.1 on forests and 15.4.1 on mountain ecosystems, rely on protected areas (FAO, 2021b; UNEP-WCMC, BLI & IUCN, 2020a, 2020b), continuing a trend from the Convention on Biological Diversity (Corson et al., 2014). Protected areas are premised on separation between humans and nature, though the degrees to which humans can access resources vary considerably across the six distinct categories of protected areas (Dudley, 2008; Mulongoy & Chape, 2004). However, the SDG 15 indicators do not specify what categories of protected areas are to be championed, or how they are to link to lives and livelihoods, neither in the indicator connections nor in the indicators themselves. This leaves the door open for implementing protected areas in the name of SDG 15 in ways that do not recognize sufficiently their impact on lives and livelihoods, despite diverse research on protected areas emphasizing their role in distributing fortune and misfortune especially for local residents (e.g. Brockington & Wilkie, 2015; Corson et al., 2014; Zafra-Calvo et al., 2017).

Fundamentally, the findings about separating humans and nature and the lack of consideration for social equity and diverse knowledges, place SDG 15 in a similar vein as large-scale conservation mapping and planning efforts which have met with forceful recent critique. There has been intense

debate about the degrees to which Half Earth, 30 by 30 or the Global Safety Net have or have not taken into account the humans whose lives, livelihoods and lands would be affected, and embraced local leadership and knowledges (cf. Schleicher et al., 2019, for Half Earth; Waldron et al., 2020, on 30 by 30 and the reply by Agrawal et al., 2020; the Global Safety Net proposal by Dinerstein et al., 2020, and replies by Dutta et al., 2020, Brockington, 2021, and Kashwan et al., 2021, across all proposals). Schleicher et al. (2019), Agrawal et al. (2020), Dutta et al. (2020) and Brockington (2021) all challenge these initiatives for not measuring the number of humans, and their lands, that would be affected by placing half the earth (Half Earth) or 30% by 2030 (30 by 30) under protection, arguing that not measuring them makes them invisible to these mapping processes. As the above analysis shows, SDG 15 equally lacks mechanisms for measuring the individuals affected by its interventions, and the impacts that result from them, or for safeguarding equitable inclusion of local knowledge holders and decision-making.

The diagnosed blinkers and blind spots thus raise further questions about the SDGs' ability to create equitable benefits for both nonhuman and human nature, particularly for individuals and groups disadvantaged by income, status, gender or (dis)ability inequalities. Progress reports by the UN Secretary General on SDG 15 (2018, 2020, 2021), following the prescribed indicator structure, equally make no reference to nor mention of the humans who live with conservation. These absent links to conservation's implications for lives and livelihoods are equally in contravention of Oldekop et al.'s (2016) findings that socioeconomic benefits within protected areas were a better predictor of positive conservation outcomes than any other characteristic. Zafra-Calvo et al. (e.g. 2017) have explored ways of integrating social-equity components into protected area and conservation indicators; however, these efforts are not reflected in SDG 15. The 2018 HLPF's progress review describes the advances on SDG 15 as mixed (UN, 2018). While ever more important areas for terrestrial, freshwater or mountain biodiversity have been placed under protected-area status (reaching 44, 47 and 48 percent respectively and thus nearing 'Half Earth' levels of protection), the overall loss of biodiversity continues unabated; equally, forest loss slowed, but is still alarmingly high (UN, 2018). In 2019, the report by the Intergovernmental Panel on Biodiversity and Ecosystem Services came to similar conclusions (Diaz et al., 2019). This suggests that SDG 15 as currently constituted is unlikely to achieve its stated goal of protecting, conserving and restoring terrestrial ecosystems. Fundamentally, by not connecting to other relevant SDGs or social-equity aspects of how conservation can affect lives and livelihoods in its vicinity, SDG 15 risks failing both to protect and restore ecosystems and to recognize those who live close-by.

While some thematic focus per goal is necessary in the emic structure of the SDGs, SDG 15's indicators systematically appear not to acknowledge connections. Firstly, failing to connect conservation and its implications to other SDGs concerned with poverty, economic growth, sustainable consumption, climate change or power dynamics including the gender dimension raises questions about the SDGs' enabling women and men living in poverty to become dignified agents of their own future (as demanded by Pope Francis in 2015). What is more, it perpetuates problematic dualistic trajectories of seeing nature and humans as separable, and separate (Plumwood, 2003; Salleh, 2016), even though many conservationists state that they see humans as part of nature (Sandbrook et al., 2019). While SDG 15 can cite the SDGs' indivisibility and the focus in SDG 1 on poverty as justification for not including people in its own indicators and reporting, the lack of mechanisms to safeguard internal coherence and monitor indicator connections and interactions, coupled with intellectual and monitoring blind spots, raises the question to what degree indivisibility may be a performative fig leaf.

No focus on structural drivers and justice

Connected to the above-discussed failure to interrogate equity concerns and connections are an indifference to economic-structural drivers of biodiversity loss in SDG 15's targets and indicators. The logic of protected areas, on which 15.1, 15.2 and 15.4 rely, arguably links biodiversity destruction very specifically to those who live on and from the land in question, rather than the resource extraction necessary e.g. for wealthy far-away tourists to visit. This mirrors Gupta and Vegelin's (2016) observation that the SDGs run the risk of prioritizing the interests of the rich. This also extends to an inattention to international trade in SDG 15, unlike the SDG Dashboards: the dashboards are a shorthand produced independently of the United Nations, providing overviews of countries' progress on specific SDGs based on SDG indicators, but also deviating from them where rigour and methodology, according to the authors, warrant a departure (Sachs et al., 2017, 2018, 2019). For SDG 15, the dashboards explicitly include a marker which takes into account biodiversity impacts imported through trade, building respectively on Chaudhary and Kastner (2016) for 2017 and Lenzen et al. (2012) for 2018 and 2019 (Sachs et al., 2017, 2018, 2019). SDG 15 does not address nor acknowledge any international trade effects on biodiversity.

By the same token, biophysical limits, and the need particularly for industrialized countries to abide by them (Hickel, 2019), do not find mention anywhere in the SDGs (Eisenmenger et al., 2020; Spangenberg, 2017), nor in SDG 15 in particular. Despite much work challenging the primacy of economic growth in light of finite resources (e.g. Acosta, 2016; Kallis, 2011), and questioning resource extraction's adverse impacts on humans and nature which render conservation necessary in the first place (Büscher et al., 2017; Cavanagh & Benjaminsen, 2017; Grove, 1995), there is no acknowledgement of planetary boundaries (Steffen et al., 2015). This recalls equally the SDGs' problematic reliance on a fantasy of decoupling (Fletcher & Rammelt, 2017; Hickel, 2019). Moreover, both the means of implementation targets 15.a and 15.b actively rely on increased funding from all sources, including the private-sector. SDG 15 thus leaves it again to other socio-economic SDGs to address wider economic structures, yet this intended indivisibility again risks exacerbating inequalities by not addressing them. Although many environmental issues are problems of justice by their very nature (Lele, 2017), Menton et al. (2020) find that environmental and social justice are not central to the SDGs given a general failure to acknowledge power dynamics and complex interactions between injustices. This disregard for justice dovetails with the above findings on failing to monitor interdependencies and include and consult with residents, risking to exacerbate the inequalities which the SDGs overall were built to address.

Concluding observations

This in-depth analysis of SDG 15's goal, targets and indicators found it to use a Žižekian (1989) disavowal strategy in reusing past indicators, further a separation between humans and nature (Plumwood, 2003; Salleh, 2016), fail to include and recognize the rights, lives and lands of those living with conservation (Sandbrook et al., 2019; Tauli-Corpuz et al., 2020), and neglect to prioritize justice (Menton et al., 2020). This is problematic since, while none of these phenomena may be new, this global governance framework cements conservation thinking, monitoring, funding and policy into the future. In sum, there is serious doubt whether SDG 15, as currently constituted, can live up to its objectives of protecting planet and people while transforming our world. While the HLPF progress review (UN, 2018) references the ambition to reach the furthest behind

first (2015b, para 4), this paper has demonstrated that SDG 15 has no mechanism to identify those effects or groups, nor mandate inclusion of their rights, knowledges and decision-making, cognisant of biodiversity conservation needs and interventions.

The paper shows that although the SDGs have been declared ‘indivisible’, the SDGs, and specifically SDG 15, can still divide and separate. As social and economic matters are dealt with in other SDGs, the indivisibility of the SDGs suggests there is no need to address them in SDG 15, life on land. However, this article has shown that this risks to exacerbate the inequalities which the SDGs overall are to eradicate. What is more, SDG 15’s choice of indicators, and failure to monitor interdependencies with livelihoods and international trade, position the SDGs in the intellectual trajectory of large-scale conservation mapping efforts which have been criticized for failing to account adequately for humans’ rights and lands (e.g. Brockington, 2021; Dutta et al., 2020; Kashwan et al., 2021; Schleicher et al., 2019).

Notes

1. While I acknowledge that the SDGs’ language such as ‘transforming our world’ or ‘leaving no-one behind’ is performative, it is important to investigate how their translation into goals in complex inter-governmental processes lives up to their aspirational origins as investigated by the special issue and its authors (e.g. Weber, 2017).
2. While I use ‘Global North’ here for brevity, I acknowledge that the Global North/Global South dichotomy is reductive and problematic, e.g. given the risk of perpetuating binaries, the presence of Norths in the South and vice versa, etc.
3. Please see Krauss (2021) for an analysis of SDG 15 from a decolonial and convivial perspective.
4. IUCN and BLI (2021) state that disaggregations of the Red List Index are particularly relevant as indicators towards targets related to food and agriculture (2), climate action (13), marine life (14) and 15 (forests, terrestrial, freshwater, mountain biodiversity). However, these are not listed here as there is no explicit connection made to any other indicators, nor mechanisms to monitor that connection.

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Notes on contributor

Judith Krauss is a post-doc on the ‘Convivial conservation’ research project, based at the University of Sheffield’s Institute for Global Sustainable Development. She is interested in all intersections of sustainability and solidarity.

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Appendix 1: SDG 15, its targets and indicators in full (as of May 2021)

Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.

Goals and targets	Indicators	Measured by:	Responsibility for monitoring goal (called 'data compilers' in 2021 metadata format)
15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	15.1.1 Forest area as a proportion of total land area 15.1.2 Proportion of important sites for terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type <i>Previously used as an indicator for the CBD, 2010 target and to track progress towards the 2011–2020 Strategic Plan for Biodiversity (Aichi Target 11), though Aichi specified the percentage at 17%</i>	Protected area coverage data (polygons); overlay with key sites for terrestrial biodiversity polygons and freshwater biodiversity (UNEP-WCMC, BLI and IUCN, 2020)	15.1.1: FAO (2021a) 15.1.2: UNEP-WCMC, BLI, IUCN (2020a)
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest Management <i>Based on prior 2007 UN General Assembly decision on what constitutes sustainable forest management</i>	<ol style="list-style-type: none"> 1. Annual forest area change rate 2. Above-ground biomass stock in forest 3. Proportion of forest area located within legally established protect[ed] areas 4. Proportion of forest area under a long-term forest management plan 5. Forest area under an independently verified forest management certification scheme (FAO, 2021b, p. 2) 	FAO (2021b)
15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world	15.3.1 Proportion of land that is degraded over total land area	<ol style="list-style-type: none"> 1. Trends in Land Cover 2. Land Productivity 3. Carbon Stocks 	UNCCD (2021)
15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development	15.4.1 Coverage by protected areas of important sites for mountain biodiversity 15.4.2 Mountain Green Cover Index		15.4.1: UNEP-WCMC, BLI, IUCN (2020b) 15.4.2: FAO (2021c)
15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species	15.5.1 Red List Index <i>Previously used for 2011–2020 Strategic Plan for Biodiversity (particularly Aichi Target 12), Convention on Biological Diversity and Millennium Development Goal</i>		IUCN, BLI (2021)
15.6 Promote fair and equitable sharing of the benefits arising from the utilization of genetic	15.6.1 Number of countries that have adopted legislative, administrative and policy frameworks	– Countries that are contracting Parties to the International Treaty on Plant Genetic Resources	Secretariat CBD (2021)

resources and promote appropriate access to such resources, as internationally agreed	to ensure fair and equitable sharing of benefits <i>Reference to Aichi Biodiversity Target 16 (to be completed by 2015) and Nagoya Protocol</i>	for Food and Agriculture (PGRFA) – Countries that are parties to the Nagoya Protocol – Countries that have legislative, administrative and policy framework[s] or measures reported through the Online Reporting System on Compliance of the International Treaty on Plant Genetic Resources for Food and Agriculture – Countries that have legislative, administrative and policy framework[s] and measures reported to the Access and Benefit-Sharing Clearing-House – Total reported number of Standard Material Transfer Agreements (SMTAs) transferring plant genetic resources for food and agriculture to the country (Secretariat of the CBD, 2021, p. 1)	
15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products	15.7.1 Proportion of traded wildlife that was poached or illicitly trafficked <i>Links to Convention on Illegal Trafficking of Endangered Species</i> <i>Tier II indicator (no data)</i> <i>Recurr as 15.c.1</i>		UNODC (2016a)
15.8 By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species	15.8.1 Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species <i>Links to Aichi Biodiversity Target 9</i>		IUCN (2018) Classified as Tier I (Nov 2020; IAEG-SDGs, 2021)
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	15.9.1 (a) Number of countries that have established national targets in accordance with or similar to Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011–2020 in their national biodiversity strategy and action plans and the progress reported towards these targets; and (b) integration of biodiversity into national accounting and reporting systems, defined as implementation of the System of Environmental-Economic Accounting <i>b: Tier II indicator (no data)</i>		UNEP, CBD, UNSD & UNEP-WCMC (2019)
15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	15.a.1 (a) Official development assistance on conservation and sustainable use of biodiversity; and (b) revenue generated and finance mobilized from biodiversity-relevant economic instruments <i>Link to OECD biodiversity marker, Aichi Biodiversity Target 20</i>	(a) Official development assistance on conservation and sustainable use of biodiversity, defined as gross disbursements of total Official Development Assistance (ODA) from all donors for biodiversity. (b) revenue generated and finance mobilized	OECD (2020a)

(Continued)

Goal 15 Continued.

Goals and targets	Indicators	Measured by:	Responsibility for monitoring goal (called 'data compilers' in 2021 metadata format)
15.b Mobilize significant resources from all sources and at all levels to finance sustainable forest management and provide adequate incentives to developing countries to advance such management, including for conservation and reforestation	cf. 15.a.1	<p>from biodiversity-relevant economic instruments, defined as revenue generated and finance mobilized from biodiversity-relevant economic instruments, covering biodiversity-relevant taxes, fees and charges, and positive subsidies. (OECD 2020a, p. 1)</p> <p>(a) Official development assistance on conservation and sustainable use of biodiversity, defined as gross disbursements of total Official Development Assistance (ODA) from all donors for biodiversity.</p> <p>(b) revenue generated and finance mobilized from biodiversity-relevant economic instruments, defined as revenue generated and finance mobilized from biodiversity-relevant economic instruments, covering biodiversity-relevant taxes, fees and charges, and positive subsidies. (OECD, 2020b, p. 1)</p>	OECD (2020b)
15.c Enhance global support for efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities	cf. 15.7.1		UNODC (2016b)

Source: Author based on sources as indicated.