Make nature's role visible to achieve the SDGs

Social Media Summary: *Harmonizing links between the SDGs and the CBD's post-2020 Global Biodiversity Framework is vital for promoting sustainable development*

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1. Introduction

Six years have passed since the United Nations adopted the Sustainable Development Goals (SDGs) as a blueprint for governments, businesses, donors and civil society to accelerate efforts to "end poverty, protect the planet and ensure prosperity for all." With an estimated USD $3.3-4.5 trillion needed annually to achieve the Goals worldwide (UNDOCO, 2018), effective resource allocation and synergistic solutions are critical – an urgency magnified by the devastating impacts of COVID-19 on our societies and economies. The next 12 months present a pivotal opportunity to fast-track alignment, with the UN Convention on Biological Diversity (CBD) set to define a post-2020 Global Biodiversity Framework (GBF) for the conservation and sustainable use of nature, and countries updating their national commitments under the Paris Agreement of the UN Framework Convention on Climate Change (UNFCCC), ahead of crucial meetings in 2021 that will address the world's interrelated climate and nature emergencies.

Central to the SDGs is the notion that environmental sustainability underpins economic and social dimensions of development, backed by a wealth of research linking nature to human wellbeing via ecosystem services or, more broadly, 'nature's contributions to people' (NCPs) (Dasgupta, 2021; Diaz et al., 2018; IPBES, 2019). Yet the language of the 17 Goals and 169 Targets comprising the SDGs is largely blind to the myriad ways in which nature supports our health and wealth (Reyers & Selig, 2020). While Goals 14 (*Life Under Water)* and 15 (*Life on Land*) recognize the urgent need to conserve, restore, and more sustainably use nature, the lack of clear links between healthy ecosystems and achievement of the other Goals means Goals 14 and 15 have come to be seen by many as simply "the environmental goals" rather than the foundation upon which achievement of the entire SDG agenda depends. As a result, progress on achieving them has been limited, investment is trending in the wrong direction (Sachs et al., 2020), nature continues to decline faster than at any time in human history (Brauman et al., 2020; IPBES, 2019), while 'business-as-usual' (BAU) development compounds the problem, providing short-term support for individual Targets while undermining the natural world that supports the totality.

In this Intelligence Briefing, we argue that only a radical increase in the visibility of nature's role, and its incorporation into planning and implementation, will ensure the SDGs catalyze truly sustainable development. To support this contention, we illuminate nature's role through an assessment of the language of all 169 Targets, alongside a review of documented nature–human well-being linkages. We categorize which of the 169 Targets are *dependent* upon nature for their achievement; could *harm* nature if attained through BAU actions; or may synergistically *benefit* nature through their attainment (Table 1 and Supplementary Materials). Doing so provides insights critical for increasing effectiveness across the SDG agenda regarding where to invest, how to enhance synergies and limit unanticipated impacts, and how to measure success. It also suggests a path for integrating the "nature that people need" to achieve the 2030 Agenda into the CBD's post-2020 GBF.

2. **Invest in nature to promote sustainable development**

We find that 84 (50%) of the 169 Targets are *dependent* on nature for their achievement via clearly documented mechanisms (Figure 1). For 24 Targets the relationship is 'obvious'; either the Target's language relates to nature itself (e.g., Target 15.4 – *ensure the conservation of mountain ecosystems*) or explicitly references the sustainable use of nature (e.g., 12.2 – *achieve the sustainable management and efficient use of natural resources*). For most, however, (60 Targets) nature's role goes unstated. For example, in many countries mangroves and other coastal ecosystems are critical for protecting vulnerable coastal communities from storm surge and flooding, while forests are vital sources of food and raw materials for people in times of social or economic stress (IPBES, 2019) – their conservation is thus critical for achieving Target 1.5 (*build resilience of the poor to climate-related extreme events and other disasters*). Similarly, nature's medicine cabinet provides us with compounds used to treat everything from cancer (e.g. vincristine derived from the Madagascar periwinkle) to pain relief (e.g. morphine from the Opium poppy), with new compounds being found all the time (Atanasov et al., 2021; Chivian & Bernstein, 2008) – all vital for progress on 3.4 (*reduce premature mortality from non-communicable diseases*). Meanwhile, the natural world inspires innumerable innovations in technology – from buildings that replicate termite mounds to more efficiently regulate temperature (Singh et al., 2019), to the Namib desert beetle's shell that is encouraging new ways to harvest water from mist in water-stressed regions (Brown & Bhushan, 2016) – driving progress on 8.2 (*achieve higher levels of productivity through innovation*). Yet the language of all these Targets, their indicators and most reporting on implementation progress to date (Sachs et al., 2020), obscures or ignores nature's role. With the monetary value of these benefits to the private sector alone standing at USD $44 trillion (WEF, 2020), this is extraordinarily shortsighted. In effect, these dependencies on nature represent a vast, unseen subsidy towards achieving the SDGs that we are failing to track or measure, and so cannot effectively steward.

Instead, *dependent* Targets should be seen as critical opportunities for investing in nature-based solutions (NBS) (Cohen-Shacham et al., 2016) for sustainable development. For example, with USD $90 trillion expected to be spent globally on infrastructure over the next 15 years,

there is growing acknowledgment that investments must prioritize low-carbon projects that retain flexibility under climate change (Browder et al., 2019). Focusing investment in 'green infrastructure' that actively leverages nature's regulating functions, provides flexible pathways for rapid and sustainable progress toward Targets in the water sector (6.1 - *access to safe & affordable drinking water*), sustainable cities and disaster risk reduction (11.5 - *reduce number of people affected by disasters*) and the design of resilient infrastructure more generally (9.4 - *sustainable infrastructure & industries*) (Browder et al., 2019; Vorosmarty et al., 2018).

3. Implement actions that enhance synergies and reduce unintended consequences

Implicit in the logic of the SDGs is that the Goals are interdependent. Yet despite some progress on mapping specific Target-to-Target interactions (Lusseau & Mancini, 2019; Scharlemann et al., 2020), most links remain poorly described and ignored in practice. Pursuing Targets individually ignores opportunities to capitalize on synergies and risks the achievement of one Target having unanticipated consequences for others. Nature's central role as a mediator of interactions across a host of Targets highlights these risks and opportunities (Scharlemann et al., 2020; Wood et al., 2018). The good news is achieving the majority of Targets (157; 93%) will potentially benefit nature – either intentionally (32%) or as a "knock-on" consequence (61%). Actions toward Target 5.5 (*ensure women's full and effective participation and equal opportunities for leadership*), for example, should enhance nature stewardship, as sustainability outcomes of development projects generally improve when women participate (Cook et al., 2019). Similarly, achieving Target 8.4 (*improve resource efficiency in consumption and production*) should indirectly lessen pressures on nature by reducing the estimated 1.6 billion tons of food waste, from production to retail, each year (FAO, 2019). While unsurprising given the premise of the SDGs, such beneficial outcomes are not written in stone – achieving 102 Targets (60%) could *benefit* or *harm* nature depending on how they are achieved, with at least 15 Targets (9%) likely to *harm* nature based on historical precedent. These Targets point to the urgency of building on existing, and establishing new, environmental safeguards, in planning and implementation (e.g. the International Finance Corporation's (IFC) Performance Standards on Social and Environmental Sustainability). In the medium term, we must capitalize on recent

progress in mechanisms that value nature as an asset and include it in the balance sheet of nations and corporations, such as Natural Capital Accounting (Hein et al., 2020), if synergies and trade-offs with nature are to be robustly accounted for.

More broadly, these Targets demonstrate that, in most cases, achievement of the SDGs presents a choice: invest in actions that prioritize short-term wins in support of a single Target, or adapt interventions to harness and conserve nature, fostering longer-term sustainability across linked *dependent* Targets. Target 2.1 (*end hunger*) is a prime example: instead of adopting BAU agricultural expansion to boost yields through converting natural habitats and increasing fossil fuel-based inputs, stakeholders could combine best practices in integrated landscape management, close yield gaps on underperforming lands (including through targeted intensification), employ technologies that promote efficiencies in chemical and water inputs, invest in agricultural extension services, and ensure property rights. Such an approach is feasible, cost-effective and a prerequisite for our food systems to remain within planetary boundaries (Willett et al., 2019). The result will be synergistic gains in linked *dependent* Targets, including 2.4 (*ensure sustainable food production systems*), 6.4 (*increase water use efficiency & sustainable withdrawals*) and 12.4 (*environmentally sound management of chemicals and wastes*).

4. Integrated monitoring to track nature's role

To track progress towards Targets that leverage nature's role, exploit synergies and reduce trade-offs, fit-for-purpose monitoring systems and indicators are essential. Recent work has noted the inadequacy of existing indicators for tracking environmental health (Zeng et al., 2020). Yet even more glaring is the lack of indicators that track nature's role in achieving *dependent* targets. From our review (see Supplementary Materials), of the 241 official SDG indicators, only 11 explicitly track nature's role, just six can be measured using existing methods and data, while only five pertain to Targets beyond Goals 14 and 15. Moreover, the majority of official indicators are uni-dimensional, designed to track progress only towards their parent Target and thus blind to the interconnectedness between Targets. COVID-19 unequivocally

demonstrates the risk of ignoring interactions: with zoonotic spillovers increasing as a result of unsustainable human exploitation of wildlife habitats and poor management of wildlife and domestic animals, to help prevent future pandemics we must track the relationship between human *and* ecosystem health (Dobson et al., 2020). One potential solution is the further development of 'integrated' indicators, such as the Ocean Health Index (OHI) (Halpern et al., 2012) which tracks progress on multiple socio-ecological goals, within a framework that explicitly integrates nature's support for human well-being. To accelerate both indicator development and support broader Target implementation, however, there is an urgent need to develop methodologies and data-gathering platforms that further illuminate nature's role.

5. Map the nature people need

Foremost is the need to rapidly advance efforts to spatially map ecosystems and the NCPs they provide in support of *dependent* Targets. Till now, such efforts have been limited to individual regions or nations, apply only to a subset of NCPs, or are unable to quantify the amount of NCP being delivered in relation to people's needs. Solving these challenges is vital for exploring spatial synergies and trade-offs among scenarios of BAU development interventions versus NBS, guiding investments to the right places, and identifying stakeholders whose participation is key for delivering equitable and just outcomes. The good news is rapid progress is being made including, for example, global mapping of the role of mangroves and coral reefs in providing coastal protection (Chaplin-Kramer et al., 2019; Jones et al., 2020) and the carbon stored in ecosystems that is "irreplaceable" if we are to achieve the Paris Climate Agreement (Goldstein et al., 2020), alongside quantification of the positive links between protected areas globally and the health and wealth of nearby communities (Naidoo et al., 2019). These studies reveal that priority areas for NCP delivery in support of *dependent* Targets are widespread (for example, more than 2.6 million ha of mangroves protect vulnerable coastal people globally (Jones et al., 2020)). Importantly, while overlap with other biodiversity priorities (e.g. threatened species) is substantial, it is far from comprehensive (Girardello et al., 2019; Larsen et al., 2011). This suggests spatial targets for the percentage of Earth we need to conserve,

restore or sustainably manage to achieve our inter-linked global goals on nature, climate change and sustainable development, will need to be substantial (Dinerstein et al., 2020).

6. Harmonize the SDGs with the CBD's post-2020 Global Biodiversity Framework

The emerging post-2020 GBF represents an immediate opportunity to operationalize the interconnectedness between these global goals. To do so, we see three key needs: First, while the current draft GBF text includes a Goal and Targets focused on delivery of NCPs (CBD, 2021) – and so begins to explicitly capture key links between nature and *dependent* targets in the SDGs (including disaster risk reduction, food and water security) – many countries lack the data or modeling frameworks to robustly evaluate these linkages. Exponentially scaling the mapping work highlighted above is therefore critical for capturing additional NCPs, developing relevant indicators and targeting implementation actions under both the SDGs and the GBF. Second, to sustain *all* the nature we need – to conserve species and ecosystems, help mitigate climate change, avoid tipping points in the biosphere *and* support the achievement of *dependent* Targets and the broader SDG framework – will require the protection, sustainable management and restoration of substantially more than half the Earth, while at the same time fully addressing issues of justice and equity. While the current draft spatial Targets in the GBF ("30% of the planet to be protected and conserved" and "50% of land and sea under spatial planning") may reflect current political feasibility, they must be understood as starting points, with ambition rapidly increasing through 2030. Third, these spatial Targets should include *all* dimensions of biodiversity – including NCPs – to enhance efficiencies and capture the critical role of species in underpinning ecosystem functions that drive the stocks and flows of NCPs.

7. Conclusions

Though nature's foundational role is implicit in the global vision articulated by the SDGs, to realize that vision it must be made explicit. Other essential enabling conditions, from improving governance of the global commons to the removal of perverse economic incentives that prioritize short-term financial returns over resilience (Dasgupta, 2021), are all represented in one or more of the SDGs – and in many cases mirrored in the GBF. Yet without greater visibility

of nature's role we fail to see the forest for the trees. Delivering on the SDGs will be even more challenging in a post COVID-19 world (Naidoo & Fisher, 2020); all the more reason that nature must be the driver of our economic and social recovery, not a victim, if we are to achieve sustainable development for all.

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Author Contributions

DH and WT developed the concept; PC led the textual analysis along with AT; all authors contributed to writing and review.

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Conflicts of interest

None.

Research data and transparency

All relevant data and methods are available as Supplementary Materials.

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Figure 1 (a) Percentage of SDG Targets under each Goal that are *dependent* on nature for their achievement and **(b)** proportion of total 169 SDG Targets that are *dependent* and could *harm* or *benefit* nature through their achievement.

Table 1 Definitions of Dependent, Harm and Benefit and No Link categorizations applied to all 169 Targets. Note that categories are not mutually exclusive, except for No Link. (See *Supplementary Materials* for details on methods and the list of categorizations for all 169 Targets).

Categorization	**Explanation**	**Example**
Dependent	Nature can help achieve the Target	"*Ending hunger*" (Target 2.1) is dependent on, for example, the sustainable contribution of freshwater fisheries, that are critical sources of dietary protein for 158 million people (McIntyre et al., 2016).
Harm	Actions typically taken to achieve the Target can negatively impact nature	Actions taken to "*strengthen resilience to climate hazards*" (Target 13.1) can cause knock-on impacts to biodiversity and ecosystems (Turner et al., 2010).
Benefit	Achieving the Target will likely benefit nature	"*Improving resource efficiency in consumption and production*" (Target 8.4) should lessen

		pressures on nature by reducing food waste (FAO, 2019).
No Link	Target's connection to nature is trivial or unknown	"*Provide legal identify for all, including birth registration*" (Target 16.9).

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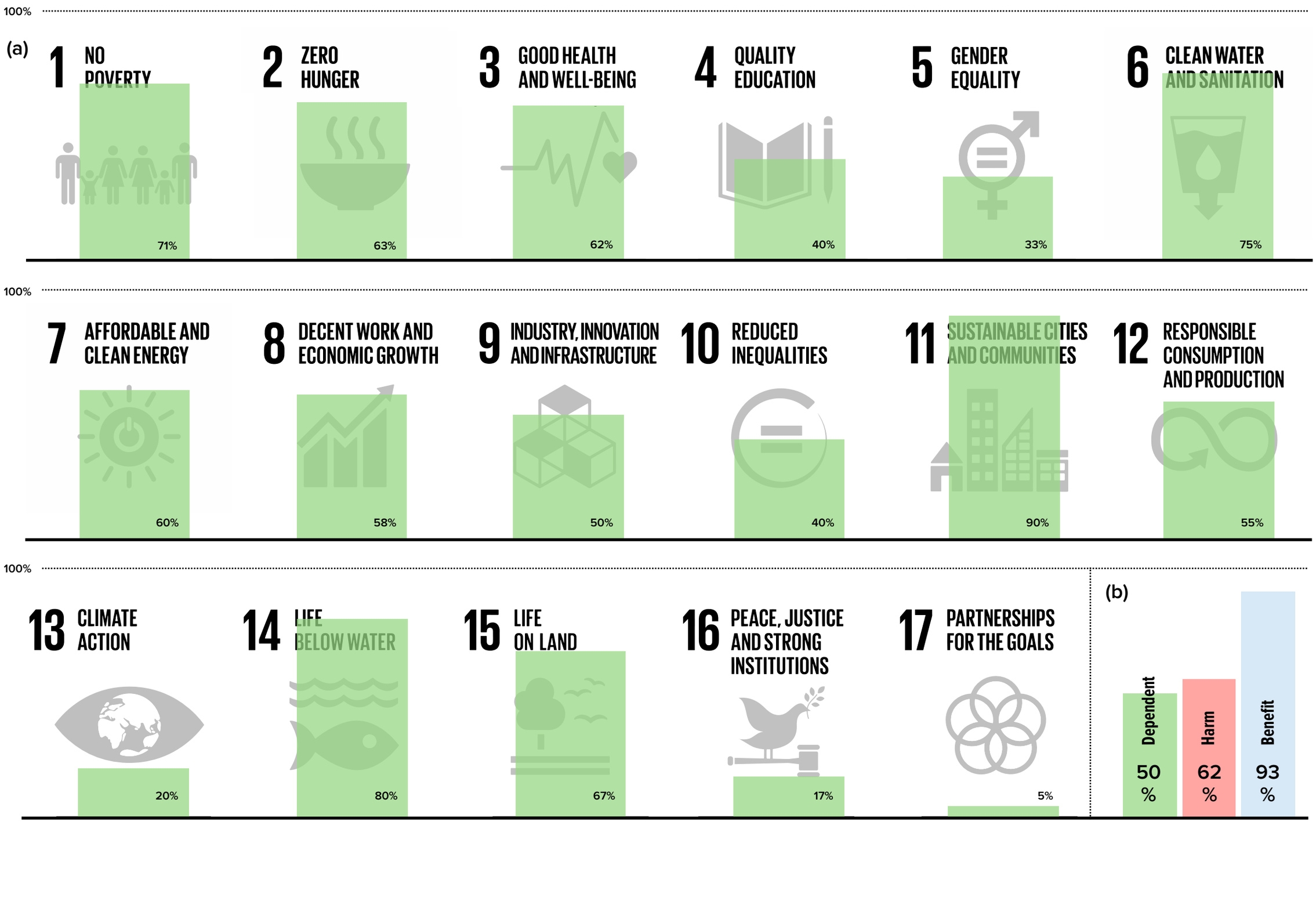
Sustain Nature to Achieve the Sustainable Development Goals



Supplementary Methods

See Supplementary Table 1 for the results of applying these Methods for all 169 Targets.

Defining Targets: *Dependent*

For the purposes of this work, "nature" is defined as the biosphere, atmosphere, and hydrosphere; minerals and insolation are excluded. A simple classification of Targets by nature-related keywords[1] was found to be unreliable due to subjectivity in Target wording, so a team of four experts[2] individually reviewed all 169 Targets to identify possible mechanisms by which nature may contribute to Target achievement, after which all results went through multiple rounds of collaborative revision. This procedure yielded the following five categories, for which reasoning (and citations, where relevant) are listed in Supplementary Material Table 1:

1. The text of the Target states that the Target's objective is to protect or restore an aspect of nature.
2. The text of the Target states that achieving the Target requires the existence or use of a good or service provided by nature; i.e. the *dependence* on nature is "obvious" in the language of the Target.
3. The text of the Target does not state an explicit link to nature, but at least one nature-based pathway to Target achievement was identified from the literature; i.e. the *dependence* on nature is "unstated" but implicit – it will be leveraged only if the actor trying to achieve the Target is aware of the link.
4. There is no clearly identifiable dependency of the Target on nature.
5. There may be a nature-based pathway to Target achievement, but a clear example could not be found in the literature, or the text of the Target focuses on supporting societal institutions whose existence may have effects on protecting, restoring, or implicitly/explicitly using nature, but is at least one-step removed.

For this analysis we deem categories 1-3 as *dependent.* Identification of Targets that are implicitly *dependent* on nature (category 3) is especially important, as prioritizing nature-based solutions (NBS) may unlock potential for generating co-benefits and minimizing trade-offs in ways that might otherwise be undervalued or entirely missed. In Supplementary Table 1, we provide a brief justification for each category 3 *dependent* Target and supporting reference(s).

Defining Targets: *Harm* and *Benefit*

Every Target was scored separately for its potential to either *harm* or *benefit* nature. As with the assessment of *dependence*, each of the four experts conducted their analysis independently, then all results were reviewed and revised collaboratively. Targets were evaluated for the possible environmental impacts of alternative implementation pathways (as determined by each expert), as well as on the possible consequences of Target achievement. Note that Targets could be categorized as both *benefit* and *harm* at the same time (see below). The full list of classifications and mechanisms can be found in Supplementary Material Table 1.

[1] Following Elder & Olsen 2019.

[2] Adapted from method used in Weitz et al, 2017, in which each author individually assessed one quarter of all 122 SDG Target-Target interactions considered in the analysis, then all four authors collectively reviewed all results.

Benefit scores are divided into three categories:

1. *Intended Benefit:* The Target's stated purpose is to help nature. Any Target using the words "sustainable" or "restoration" in reference to nature is included, as are all Targets belonging to *dependent* category 1.
2. *Knock-on Benefit*: The stated purpose of the Target is something other than nature protection/restoration, but Target achievement could nevertheless lead to positive impacts on nature.
0. *No Benefit*: There is no obvious mechanism for Target achievement to directly or indirectly benefit nature.

Harm scores are also divided into three categories:

1. *High risk*: While no Target's stated purpose is to explicitly harm Nature, Targets in this category have a heavy emphasis on natural resource use or management, make no mention of sustainability, and historically have led to natural resource degradation in many contexts. Hence, they have a high risk of inadvertently causing environmental harm.
2. *Medium risk*: While the Target's focus is on sustainable natural resource use (or is on something else entirely), there is a clear mechanism for net environmental harm to be an unintended outcome.
0. *Low risk*: There is no obvious mechanism for Target achievement to harm Nature.

H1 Targets represent the greatest risk for undermining the broader sustainability agenda of the SDGs, but *H2* Targets also require careful implementation to avoid the potential for trade-offs. *B1* Targets are in accordance with what one would expect from a truly *sustainable* SDG framework, and *B2* Targets represent exciting opportunities to choose implementation pathways that may promote environmental benefits.

Targets with mixed scores of *B1:H2*, *B2:H1*, and *B2:H2* (no Target could receive an *H1:B1* score) highlight opportunities to choose pathways that leverage synergies and minimize tradeoffs for nature. With thoughtful implementation strategies, these mixed-score Targets may offer no-regrets opportunities to generate co-benefits across a wide range of *dependent* Targets. Though we take Targets containing the words "sustainable" and "restore" at face value as beneficial to nature, we acknowledge that humanity's understanding of what is sustainable and how best to perform ecosystem restoration is still evolving, and there is a risk of making "sustainable" or "restoration" decisions now that may lead to suboptimal outcomes in the future (hence the *B1:H2* designation of these Targets).

Since the entire framework is called "the Sustainable Development Goals", it could be argued that each Target within the framework is, by definition, intended to be sustainably implemented to achieve a sustainable outcome. However, countries, cities, and other implementers are, in reality, approaching achievement of the SDG framework piecemeal, focusing on the subset of Targets that seem most relevant or attainable in their particular contexts. This makes a Target-by-Target assessment approach even more essential, as piecemeal implementation strategies are vulnerable to undesired tradeoffs and missed opportunities.

Indicators Analysis

To identify nature-relevant indicators, we first performed a keyword search of all 252 official SDG indicators (number correct at time of analysis in late 2020) for nature-related text, following Zeng *et al.* (2020). We then manually reviewed the resulting indicator subset and used expert judgement to select only those that measured a physical aspect of the non-human environment (such as water quality). While Zeng *et al.* (2020) found 101 "nature-related" indicators, 22 of which "are correlated with at least one measure of environmental conditions", no details were given for how this correlation was assessed

or what the significance of this observation might be. Their analysis includes all indicators belonging to any Target classified as "nature-related" by Elder & Olsen (2019), regardless of the wording of the indicator itself. This led to the inclusion of indicators like "number of new HIV infections per 1,000 uninfected population, by sex and age (per 1,000 uninfected population)" in their tally. Such indicators that do not measure a physical aspect of the non-human environment were excluded from our assessment by the expert judgement review step, yielding a more nuanced count of nature-related indicators than has been generated by previous work.

Caveats

Since the Earth is effectively a closed system in an SDGs context, all Targets depend in some way on nature for their achievement and the achievement of all Targets will in some way affect nature. Though we consider a Target here to be *dependent* only if a Target-nature relationship could be derived clearly from the Target text or was implicit and a mechanism found in the published literature, this approach will underestimate the importance of nature to achieving the SDGs. It also misses out on other equally valid worldviews that treat, for example, sunlight as 'part' of nature (with attendant implications for the *dependence* of solar energy related Targets). While we have made every effort to be rigorous, systematic, and consistent in our methods, we acknowledge there is an unavoidable element of subjectivity in this analysis which leaves ample room for further discussion.

References

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Supplementary Table S1. Categorization of all 169 Targets into Dependent (D), Harm (H), and/or Benefit (B), and No Link groups. See Supplementary Methods for definitions and explanation of the textual analysis. 'References' tab lists all publications cited in support of a D3 categorization.

G	T	Target text	D	D description	H	H description	B	B description
1	1	By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	3	Ecosystems provide goods and services (food, materials, clean water, cultural considerations, etc.) essential to reducing poverty by meeting household needs, providing income, and boosting physical and mental well-being. (de Koning et al. 2011, Turner et al. 2012, Angelsen et al. 2014, Suich et al. 2015).	1	Poverty eradication actions could lead to revenue generation through natural resource over-exploitation (e.g. timber, non-timber forest products, mining) and/or habitat conversion for other uses (e.g. forests cleared for agriculture).	2	Poverty alleviation efforts harmonized with local ecosystems (e.g. agroforestry to replace monoculture, the "green growth approach") could lead to more productive and diverse landscapes. (B
1	2	By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	3	Ecosystems provide goods and services (food, materials, clean water, cultural considerations, etc.) essential to reducing poverty by meeting household needs, providing income, and boosting physical and mental well-being. (de Koning et al. 2011, Turner et al. 2012, Angelsen et al. 2014, Suich et al. 2015).	1	Poverty eradication actions could lead to revenue generation through natural resource over-exploitation (timber, non-timber forest products, mining) and/or habitat conversion for other uses (e.g. forests cleared for agriculture).	2	Poverty alleviation efforts harmonized with local ecosystems (e.g. agroforestry to replace monoculture, the "green growth approach") could lead to more productive and diverse landscapes.
1	3	Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	3	Social protection systems can include natural resource stewardship programs that ensure long-term presence of, and access to, wild and locally cultivated foods and materials. (de Koning et al. 2011)	2	If social protection strategy implementation includes land distribution, could lead to previously wild lands being converted to agricultural/extractive uses.	2	If implementation involves securing property rights of resource users, could lead to decisions that nurture rather than over-exploit ecosystems.
1	4	By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	2	Land and natural resources (flora, fauna, waters) are of greater use to humanity when they are abundant and in good condition; equal rights are less valuable if the resources they concern are degraded.	2	Greater access without sustainable governance plans could lead to "tragedy of the commons" scenarios, particularly if wild lands are converted to agricultural/extractive uses.	2	When greater rights and access are coupled with governance plans that include the voices and represent the interests of all members of society, the consideration of a broader range of concerns could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

1	5	By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	3	Nature enables resilience to social and environmental shocks and disasters, particularly for the poor and vulnerable without access to social capital, institutions, or built infrastructure, by reducing physical exposure to such events as coastal flooding (Arkema et al. 2013, Arkema et al. 2015), riverine flooding (Bradshaw et al 2007, Tan-Soo et al 2016, Noori et al 2016), drought (Postel & Thompson 2005, Keys et al 2016, Figueira et al 2013), and landslides (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020), as well as by providing wild and cultivated biodiversity to meet caloric and micronutrient needs (Humphry et al. 1993) and the opportunity for diversified livelihoods (Angelsen et al 2014).	1	Disaster risk reduction strategies often lead to construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity).	2	Nature-based solutions for disaster risk reduction (e.g. coastal ecosystem restoration for storm surge, reconnecting floodplain for riparian flooding, forest restoration for landslides) lead to environmental benefits ranging from habitat restoration to improved biogeochemical cycling.
1	a	Ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation, in order to provide adequate and predictable means for developing countries, in particular least developed countries, to implement programmes and policies to end poverty in all its dimensions	5		2	Financial resource mobilization could lead to natural resource over-exploitation to generate needed revenue.	2	Greater financial resource availability could enable improved conservation, restoration, and sustainable management activities as part of poverty alleviation strategies.
1	b	Create sound policy frameworks at the national, regional and international levels, based on pro-poor and gender-sensitive development strategies, to support accelerated investment in poverty eradication actions	5		2	Poverty eradication actions could lead to natural resource over-exploitation (timber, non-timber forest products, mining) and/or habitat conversion for other uses (e.g. forests cleared for agriculture).	2	Gender-sensitive poverty eradication should empower the vulnerable and could give them a greater voice in decision-making. The consideration of a broader range of concerns (particularly those of women, who are often more dependent on natural resources) could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
2	1	By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round	3	Healthier ecosystems are better able to provide the wild food, pasturage, and crop services (water, pollination) essential for ending hunger. (Brandon et al. 2008, FAO 2009, Nasi et al. 2011, McIntyre et al. 2016).	1	Agricultural productivity to provide sufficient and nutritious food might be boosted by increased pesticide/fertilizer use (causing eutrophication, environmental toxicity, etc.) and/or changes in land use patterns, including habitat conversion (e.g. forest to pasture or cropland).	2	Ending hunger and providing access to nutritious and sufficient food year-round could be achieved by changes in agricultural strategies towards polyculture, agroforestry, agroecology, etc. that could improve soil health, provide wildlife habitat, and yield more nutrients and higher-quality calories per unit farmland, with decreased chemical inputs (herbicides, pesticides, fertilizers) and associated pollution.

2	2	By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons	3	Healthy ecosystems provide a significant proportion of the calories, protein, carbohydrates, vitamins, and minerals necessary to prevent malnutrition, both through the water and pollination services that support crop production and in the provision of wild foods. (Ogle et al. 2001, Eilers et al. 2011, Golden et al. 2011).	1	Agricultural productivity to help end malnutrition might be boosted by increased pesticide/fertilizer use (causing eutrophication, environmental toxicity, etc.) and/or changes in land use patterns, including habitat conversion (e.g. forest to pasture or cropland).	2	Nutritional gains could be achieved through agroecological approaches or by otherwise increasing agricultural intensity/efficiency in ways that don't harm ecosystems.
2	3	By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	2	Nature can boost the productivity of agricultural and other forms of small-scale food production (pollination, moisture recycling, soil health, quality of pastures and fisheries). Access to land is more valuable if that land is productive and in good condition. Non-farm employment can be in nature-based sectors like ecotourism.	1	Agricultural productivity might be boosted by increased pesticide/fertilizer use (causing eutrophication, environmental toxicity, etc.) and/or changes in land use patterns, including habitat conversion (e.g. forest to pasture or cropland).	2	Greater productivity of local agriculture could lead to a) land sparing / land sharing, b) better land stewardship due to secure land rights/access, and c) lower greenhouse gas emissions as less food needs to be imported from elsewhere.
2	4	By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	2	Sustainable food production systems and resilient agricultural practices are more effective when supported by healthy ecosystems (e.g. through pollination, moisture recycling, soil health, quality of pastures and fisheries).	2	Risk of harm if previously natural areas are converted to agriculture.	1	Should lead to healthier agroecosystems, reduced impact on other ecosystems, and better yields (which, assuming constant demand, could allow marginal croplands to rewild).
2	5	By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Greater access without sustainable governance plans could lead to over-exploitation, or a "tragedy of the commons" scenario.	1	Genetic diversity (by providing drought-, flood-, or pest-tolerant plants, or improving productivity of animals) is an important part of nature, and cultivated genetic diversity reduces pressure on wilder ecosystems. Enhanced sense of value also provides incentive for better stewardship.
2	a	Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	5		2	Increased agricultural investment could lead to increased pesticide/fertilizer use (causing eutrophication, environmental toxicity, etc.) and/or changes in land use patterns, including habitat conversion (e.g. forest to pasture or cropland).	1	Should lead to healthier agroecosystems, reduced impact on other ecosystems, and better yields (which, assuming constant demand, could allow marginal croplands to revert to more wild ecosystem types).

2	b	Correct and prevent trade restrictions and distortions in world agricultural markets, including through the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	4		2	Changes in trade dynamics might lead to habitat conversion (e.g. forest to pasture or cropland) to compensate for shift in flow of agricultural commodities.	2	Removal of subsidies and changes in trade dynamics could lead to more efficient use of land and natural resources, reducing pressure on ecosystems.
2	c	Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	4		2	Changes in food commodity market dynamics might lead to changes in land use patterns, including habitat conversion (e.g. forest to pasture or cropland), to compensate for shift in flow of agricultural commodities.	2	Changes in food commodity market dynamics could lead to more efficient use of land and natural resources, reducing pressure on ecosystems.
3	1	By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3	Poor water quality contributes to maternal mortality, and healthier ecosystems are better able to provide cleaner water. (Cheng et al. 2012, Benova et al. 2014)	2	Malaria and lack of access to clean water both influence maternal mortality. Malaria-reduction efforts include draining swamps/wetlands and spraying pesticides, while clean drinking water provisioning infrastructure can disrupt aquatic ecosystems.	2	Reducing maternal mortality should empower women and could give them a greater voice in decision-making. The consideration of a broader range of concerns (particularly those of women, who are often more dependent on natural resources) could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
3	2	By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births	3	Poor water quality contributes to newborn and child mortality, and healthier ecosystems are better able to provide cleaner water. (Pattanayak and Wedland 2007, Cheng et al. 2012, Herrera et al. 2017)	2	Malaria and lack of access to clean water both influence newborn and child mortality. Malaria-reduction efforts include draining swamps/wetlands and spraying pesticides, while clean drinking water provisioning infrastructure can disrupt aquatic ecosystems.	0	
3	3	By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	3	Ecosystem degradation or destabilization can lead to increased spread of communicable diseases in humans (Molyneux 2008, Levi et al. 2012, Bausch and Mills 2014, Dobson et al. 2020).	2	Malaria-reduction efforts include draining swamps/wetlands and spraying pesticides, while clean drinking water provisioning infrastructure can disrupt aquatic ecosystems.	0	

3	4	By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being	3	Nature can support the prevention and treatment of non-communicable diseases and the promotion of mental health and well-being by providing the nutrition, materials, and recreation/spiritual outlets necessary for maintaining physical and mental health (Chivian & Bernstein 2008, Pretty et al. 2008, Douglas 2012), by mitigating air pollution (Powe and Willis 2004, Nowak et al 2014), or by providing medicines like the cancer drugs Taxol (Guenard et al. 1993) and Vincristine (Moudi et al. 2013).	0		0	
3	5	Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	5		0		0	
3	6	By 2020, halve the number of global deaths and injuries from road traffic accidents	4		0		0	
3	7	By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes	4		0		2	Giving women control over their own reproductive health should empower them and could enable them to better participate in decision-making. The consideration of a broader range of concerns (particularly those of women, who are often more dependent on natural resources) could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
3	8	Achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality and affordable essential medicines and vaccines for all	3	Access to safe, effective, quality and affordable essential medicines and vaccines depends on their continued existence, which depends on nature. Between 1981 and 2010, 75% (78 of 104) of the antibacterials newly approved by the United States (US) Food and Drug Administration can be traced back to natural product origins (Newman and Cragg 2012). At least 584 animal species, distributed in 13 taxonomic categories, have been used in traditional medicine in Latin America (Alves & Alves 2011).	2	Over-harvesting of plants and animals for use in essential medicines and vaccines can threaten their populations (e.g. Pacific Yew over-exploited for anti-cancer compound until tamoxifen synthesized; horseshoe crab blood used to manufacture some COVID-19 vaccines).	2	Prioritizing access to quality and affordable essential medicines and vaccines could encourage sustainable stewardship of habitats containing relevant medicinal plants and animals.
3	9	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	3	Nature can decrease the incidence of pollution-related death and illness by neutralizing and/or sequestering pollutants (Bragg et al 1994, Nowak et al 2014).	0		2	Measures taken to reduce deaths could include efforts to mitigate pollution emissions (e.g. wetland restoration could enable mitigation of sewage-related nutrient/pathogen pollution).

3	a	Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate	4		0		0	
3	b	Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the TRIPS Agreement and Public Health, which affirms the right of developing countries to use to the full the provisions in the Agreement on Trade-Related Aspects of Intellectual Property Rights regarding flexibilities to protect public health, and, in particular, provide access to medicines for all	3	The development of vaccines and medicines depends on nature, with drug discovery based on existing organisms significantly more successful than that based on de novo laboratory syntheses. Between 1981 and 2010, 75% (78 of 104) of the antibacterials newly approved by the United States (US) Food and Drug Administration can be traced back to natural product origins (Newman and Cragg 2012).	2	Over-harvesting of plants and animals for use in essential medicines and vaccines can threaten their populations (e.g. Pacific Yew over-exploited for anti-cancer compound until tamoxifen synthesized; horseshoe crab blood used to manufacture some COVID-19 vaccines).	2	Prioritizing access to quality and affordable essential medicines and vaccines could encourage sustainable stewardship of habitats containing relevant medicinal plants and animals.
3	c	Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States	4		0		0	
3	d	Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.	3	Healthy ecosystems can mitigate global health risks (Dobson et al 2020), and hybrid green/grey infrastructure can help communities strengthen their resilience and adaptive capacity to climate-related hazards and natural disasters (e.g. land management influences flooding and water supply (Postel & Thompson 2005, Bradshaw et al 2007, Figueira et al 2013, Keys et al 2016, Tan-Soo et al 2016, Noori et al 2016), forests reduce landslide risk (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020), coastal ecosystems reduce coastal flooding (Arkema et al. 2013, Arkema et al. 2015)).	2	Reduction and management of health risks like malaria include draining swamps/wetlands and spraying pesticides, while clean drinking water provisioning infrastructure to reduce the spread of water-borne pathogens can disrupt aquatic ecosystems.	2	Strategies for managing health risks resulting from climate-related disasters could leverage green infrastructure / nature-based solutions.

4	1	By 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	3	Access to nature improves the quality of education and the effectiveness of learning outcomes by enhancing children's cognitive, emotional and physical capabilities and improving mental and emotional well-being, thus aiding focus and retention of learned material (Louv 2005).	0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	2	By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	3	Access to nature improves the quality of education and early childhood development by enhancing children's cognitive, emotional and physical capabilities and improving mental and emotional well-being, thus aiding focus and retention of learned material (Burdette and Whitaker 2005, Louv 2005).	0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	3	By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university	5		0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	4	By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	5		0		2	Vocational skills could include the conservation, restoration, and nature-based tourism sectors (e.g. Greenbelt Movement, South Africa forestry program).
4	5	By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations	3	Gender disparities in education could be exacerbated by the fact that environmental degradation disproportionately harms women (Van Haaften and Van de Vijver 1999, Jahan 2008, Bell 2016, Deonandan et al 2017). Vocational training can include nature-related sectors, such as ecotourism or agroforestry, that may be particularly important for indigenous peoples and other vulnerable communities.	0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	6	By 2030, ensure that all youth and a substantial proportion of adults, both men and women, achieve literacy and numeracy	4		0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

4	7	By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development	5		0		1	Better education that focuses on environmental concepts should enable vulnerable people to more effectively advocate for better environmental outcomes.
4	a	Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	3	Access to nature in education facilities improves the effectiveness of learning environments by enhancing children's cognitive, emotional and physical capabilities and improving mental and emotional well-being, thus aiding focus and retention of learned material (Louv 2005).	2	Construction in previously un-developed areas could disrupt ecosystems, and unsustainable materials sourcing and construction practices could cause additional damage.	2	Better education resulting from better education facilities should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	b	By 2020, substantially expand globally the number of scholarships available to developing countries, in particular least developed countries, small island developing States and African countries, for enrolment in higher education, including vocational training and information and communications technology, technical, engineering and scientific programmes, in developed countries and other developing countries	4		0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
4	c	By 2030, substantially increase the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially least developed countries and small island developing States	4		0		2	Better education should empower the vulnerable and give them a greater voice in decision-making, which could lead to more stewardship-oriented policies and better environmental outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

5	1	End all forms of discrimination against all women and girls everywhere	3	As environmental degradation disproportionately harms women (Van Haaften and Van de Vijver 1999, Jahan 2008, Bell 2016, Deonandan et al 2017), maintaining healthier ecosystems could remove one driver of discrimination.	0		2	Ending discrimination should give women better access to natural resources. When greater access is coupled with governance plans that include the voices and represent the interests of all members of society, the consideration of a broader range of concerns (particularly those of women, who are often more dependent on natural resources) could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	2	Eliminate all forms of violence against all women and girls in the public and private spheres, including trafficking and sexual and other types of exploitation	3	Environmental degradation can drive resource insecurity, the income-related and social stress of which can lead to trafficking and sexual and other types of exploitation (William et al 2010, Molinari 2017, Brown et al 2019); healthier ecosystems may help prevent this.	0		2	Ending violence against women and girls (who are often more dependent on natural resources) should empower them and could give them a greater voice in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	3	Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation	4		0		2	Ending these harmful practices should empower women (who are often more dependent on natural resources) and could give them a greater voice in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	4	Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate	4		0		2	Recognizing and rewarding such work should empower women (who are often more dependent on natural resources) and could give them a greater voice in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	5	Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	3	As environmental degradation disproportionately harms women (Van Haaften and Van de Vijver 1999, Jahan 2008, Bell 2016, Deonandan et al 2017), maintaining healthier ecosystems could better enable women's participation in leadership roles.	0		2	Empowering women (who are often more dependent on natural resources) and including them in decision-making could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

5	6	Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the International Conference on Population and Development and the Beijing Platform for Action and the outcome documents of their review conferences	4		0		2	Giving women (who are often more dependent on natural resources) control over their own reproductive health should empower them and could enable them to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	a	Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	5		0		2	Giving women (who are often more dependent on natural resources) equal rights to economic resources should empower them and could enable them to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	b	Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women	4		0		2	Empowering women (who are often more dependent on natural resources) should enable them to be more included in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
5	c	Adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	5		0		2	Greater equality and empowerment could enable women (who are often more dependent on natural resources) to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
6	1	By 2030, achieve universal and equitable access to safe and affordable drinking water for all	3	Healthy ecosystems can provide a more reliable supply of freshwater for drinking through moisture retention and recycling (Keys et al 2016), promoting increased soil/groundwater infiltration (Figueira et al 2013), and reducing the incidence of waterborne disease (Pattanayak and Wedland 2007, Cheng et al. 2012, Herrera et al. 2017).	1	Could lead to infrastructure construction that disrupts habitats (dams, reservoirs) and/or to overconsumption (unsustainable groundwater pumping).	2	Could promote use of green infrastructure and/or reduce need to import drinking water from elsewhere (e.g. bottled water industry creates plastic waste, uses fossil fuels to process and transport, and can lead to over-exploitation of water resources at bottling site).

6	2	By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	3	Healthy ecosystems can provide a more reliable supply of freshwater for sanitation and hygiene through moisture retention and recycling (Keys et al 2016), promoting increased soil/groundwater infiltration (Figueira et al 2013), and reducing the incidence of waterborne disease (Pattanayak and Wedland 2007, Cheng et al. 2012, Herrera et al. 2017).	2	Modification of hydrology to provide water supply needed for sanitation could lead to infrastructure construction that disrupts habitats (dams, reservoirs) and/or leads to overconsumption (unsustainable groundwater pumping). May also lead to concentration of waste and/or export of problem elsewhere (e.g. construction of sewage systems that pollute waterways downstream from communities).	2	Improved sanitation access may reduce fecal contamination of surface waters.
6	3	By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	3	Wetlands and lakes absorb excess nutrients (Vymazal 2011), clean runoff from protected forests reduces downstream water treatment costs through dilution (Vincent et al 2016), and vegetated buffer strips can prevent excess sediment from entering waterways (Ramesh et al 2021).	0		1	Reducing pollution reduces harmful impacts on ecosystems.
6	4	By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity	2	Healthy ecosystems can mitigate water scarcity and provide a more sustainable supply of freshwater through moisture retention and recycling, bringing water further inland and promoting increased soil/groundwater infiltration.	2	Addressing water scarcity by tapping previously unused water sources could degrade aquatic ecosystems.	1	Assuming constant demand, better water use efficiency will require less water for same task, reducing pressure on underground and surface freshwater and leaving more water available for the ecosystems that rely on it.
6	5	By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	3	Strategies for integrated water resources management can include ecosystem conservation, restoration, and management. (Roy et al 2011, Cook & Spray 2012).	2	Integrated water resources management could harm ecosystems if the focus is primarily on grey infrastructure and water supply with little consideration of ecosystem health.	1	Integrated water resources management could benefit ecosystems by increasing water use efficiency and explicitly planning to support biodiversity.
6	6	By 2020, protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Protection and restoration should lead to reduced habitat destruction and improved ecosystem health.
6	a	By 2030, expand international cooperation and capacity-building support to developing countries in water- and sanitation-related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	5		2	Could lead to infrastructure construction that disrupts habitats (dams, reservoirs, sewers, latrines) and/or leads to overconsumption (unsustainable groundwater pumping) or production of waste products (desalination).	1	Should lead to greater water use efficiency (leaving more water for ecosystems) and reduced pollution. Could also lead to expanded use of green infrastructure / nature-based solutions (creating/protecting habitat).
6	b	Support and strengthen the participation of local communities in improving water and sanitation management	5		2	Inclusion of local voices could lead to ecosystem-degrading grey infrastructure construction or water over-exploitation if conservation and sustainability are not local priorities.	2	Including the voices of local communities could lead to more sustainable outcomes through leveraging local/traditional environmental knowledge.

7	1	By 2030, ensure universal access to affordable, reliable and modern energy services	3	Affordable, reliable, and/or modern energy services can depend heavily on healthy ecosystems, e.g. the use of green infrastructure to regulate water and sediment regimes favorable to the operation of hydropower facilities (Stickler et al 2013, Saenz et al 2014).	1	Could lead to increased fossil fuel use (driving climate change). Expansion of hydropower could disrupt aquatic and riparian ecosystems, and expansion of biofuels could drive habitat conversion and overuse of pesticides and fertilizers, leading to eutrophication and environmental release of toxic compounds.	2	Access to modern energy services could reduce both carbon emissions (if renewables are used) and other types of air pollution.
7	2	By 2030, increase substantially the share of renewable energy in the global energy mix	3	The long-term viability of renewable energy sources can depend heavily on healthy ecosystems, e.g. the use of green infrastructure to regulate water and sediment regimes favorable to the operation of hydropower facilities (Stickler et al 2013, Saenz et al 2014).	1	Expansion of hydropower could disrupt aquatic and riparian ecosystems, and expansion of biofuels could drive habitat conversion and overuse of pesticides and fertilizers, leading to eutrophication and environmental release of toxic compounds.	2	Greater use of renewables could reduce both carbon emissions (if renewables are used) and other types of air pollution.
7	3	By 2030, double the global rate of improvement in energy efficiency	4		0		2	Efficiency improvements can partially offset the climate change consequences of the rising energy demands associated with both increasing per capita energy usage and population growth.
7	a	By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	5		1	Expansion of hydropower could disrupt aquatic and riparian ecosystems, and expansion of biofuels could drive habitat conversion and overuse of pesticides and fertilizers, leading to eutrophication and environmental release of toxic compounds.	2	Cleaner, more efficient and/or renewable energy could reduce both carbon emissions (if renewables are used) and other types of air pollution.
7	b	By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	3	Modern and sustainable energy infrastructure can depend heavily on healthy ecosystems, e.g. the use of green infrastructure to regulate water and sediment regimes favorable to the operation of hydropower facilities (Stickler et al 2013, Saenz et al 2014).	2	The construction of new energy infrastructure (e.g. hydropower) could harm aquatic ecosystems.	1	Low-carbon energy production should mitigate climate change.

8	1	Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries	3	Sustainable management and use of ecosystems can contribute to economic growth through both direct revenue generation (via nature-based sectors including cultivation and wild harvest of foods, materials, and medicines; recreation and ecotourism; payment for ecosystem services) (Arrow et al. 1995, Turner et al. 2012, Suich et al. 2015) and through reducing disaster risk to communities and infrastructure (Bradshaw et al 2007, Arkema et al 2013, Grima et al 2020).	1	Traditional approaches to economic growth focus on ecosystem-disrupting natural resource exploitation (e.g. mining, timber extraction).	2	Greater prosperity could lead to greater equality, which could lead to the consideration of a broader range of concerns in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
8	2	Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	3	Higher levels of economic productivity can be attained by leveraging nature in ways that also enhance ecosystem productivity. Examples include diversification from monoculture into more varied and labour-intensive forms of cultivation like agroforestry (Droppelmann et al. 2000, Charbonnier et al. 2017); value-addition / value chain improvement in Pacific and Caribbean artisanal fisheries (Bjorndal et al 2014); or innovations in ecotourism (Hunt et al 2015), crop development (Hajjar and Hodgkin 2007, Ford-Lloyd et al. 2011), or biomimicry (Norgarrd et al. 2012, Lurie-Luke 2014, Schacht and Scheibel 2014).	2	Without a focus on conservation, restoration, and sustainable management, natural resource over-exploitation and pollution could increase.	2	Value-added and labor-intensive sectors include ecosystem-enhancing practices like poly-cropping agroforestry that increase food security and financial resilience of communities as well as support more biodiversity.
8	3	Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services	5		2	Without a focus on conservation, restoration, and sustainable management, natural resource over-exploitation and pollution could increase as a result of the rise of new businesses.	2	People could be employed in conservation, restoration, nature-based tourism, or other sectors that support ecosystem health. Better employment should empower the vulnerable and could enable them to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

8	4	Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-Year Framework of Programmes on Sustainable Consumption and Production, with developed countries taking the lead	3	Nature can be leveraged in achieving global resource efficiency in consumption and production, and in decoupling economic growth from environmental degradation, through strategies including agroforestry (Droppelmann et al. 2000, Charbonnier et al. 2017), ecosystem-based fisheries management (Fletcher et al 2010, Fletcher et al 2016, Gullestad et al 2017), and the use of green infrastructure to improve production-relevant resource streams such as fresh water (Vincent et al 2016, Ramesh et al 2021).	0		1	Decoupling economic growth from environmental degradation should benefit nature. Assuming constant demand, better resource efficiency will require fewer resources for the same task, lightening the load on nature (e.g. improve fisheries value chain management).
8	5	By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	3	Nature-based sectors offer productive employment and decent work opportunities (e.g. agriculture, fishing, forestry, ecotourism) (Hunt et al. 2015).	2	People could be employed in sectors that drive natural resource over-exploitation, habitat conversion, etc.	2	People could be employed in conservation, restoration, nature-based tourism, or other sectors that support ecosystem health. Better employment should empower the vulnerable and could enable them to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
8	6	By 2020, substantially reduce the proportion of youth not in employment, education or training	3	Nature-based sectors (e.g. agriculture, forestry, fishing, aquaculture, eco-tourism) offer productive employment and decent work opportunities and are a significant part of the economy in many countries (Walsh & Mena 2016).	2	People could be employed in sectors that drive natural resource over-exploitation, habitat conversion, etc.	2	People could be employed in conservation, restoration, nature-based tourism, or other sectors that support ecosystem health. Better employment should empower the vulnerable and could enable them to better participate in decision-making, which could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
8	7	Take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour, including recruitment and use of child soldiers, and by 2025 end child labour in all its forms	3	Environmental degradation can drive resource insecurity, the income-related and social stress of which can lead to forced labour, child labour, modern slavery, and human trafficking; healthier ecosystems may help prevent this (Turner 2017).	0		2	Combating slavery and forced labor (e.g. fish processing in Asia, wildlife trafficking in Africa) could lead to reduced hunting/harvesting/poaching pressure.

8	8	Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment	4		0		2	Protecting labor rights and promoting safe working environments should empower the vulnerable and could enable them to better participate in decision-making. The consideration of a broader range of concerns (particularly those of women, who are often more dependent on natural resources) could lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
8	9	By 2030, devise and implement policies to promote sustainable tourism that creates jobs and promotes local culture and products	3	Sustainable tourism includes ecotourism (Hunt et al 2015).	2	Opening previously pristine areas for tourism could cause ecosystem degradation.	1	Should lead to greater appreciation of, and better stewardship of, ecosystems.
8	10	Strengthen the capacity of domestic financial institutions to encourage and expand access to banking, insurance and financial services for all	4		2	Greater access to finanical resources could lead to activities that over-exploit natural resources and/or pollute, if sustainability not recognized as priority.	2	Greater access to financial resources could enable more effective environmental stewardship activities.
8	a	Increase Aid for Trade support for developing countries, in particular least developed countries, including through the Enhanced Integrated Framework for Trade-related Technical Assistance to Least Developed Countries	4		2	Increased trade could lead to land conversion for agriculture or increased natural resource consumption to generate tradeable goods.	2	Making aid conditional on social/environmental performance could lead to positive environmental outcomes, including reducing the focus on unsustainable resource extraction and encouraging movement towards resource reclamation and reuse.
8	b	By 2020, develop and operationalize a global strategy for youth employment and implement the Global Jobs Pact of the International Labour Organization	5		2	People could be employed in sectors that drive natural resource over-exploitation, habitat conversion, etc.	2	People could be employed in conservation, restoration, nature-based tourism, or other sectors that support ecosystem health. And better employment should empower the vulnerable and could enable them to better participate in decision-making.
9	1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	3	Healthy ecosystems shield infrastructure from landslides (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020), extend the lifetime of hydropower facilities (Wolancho 2012, Stickler et al 2013, Saenz et al 2014), and facilitate more cost-effective function of municipal water supply infrastructure (McDonald et al. 2016).	2	The construction of new infrastructure could degrade ecosystems.	2	Sustainable infrastructure could incorporate nature-based solutions that protect/restore/create habitat.

9	2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	3	To be inclusive and sustainable, industrialization and industrial growth can incorporate nature-based strategies. For example, healthy ecosystems can be leveraged to reduce pollution and flood/storm damage, and commodity crops like palm oil, coffee, and cacao can be produced using agroforestry practices that promote biodiversity and leverage healthy ecosytems to provide the needed water and pollination services (Droppelmann et al. 2000, Klein et al. 2007, Stickler et al. 2013, Vincent et al 2016, Charbonnier et al. 2017, Ramesh et al 2021).	2	Environmental harm could result if overall resource consumption or waste generation increase.	1	Sustainable industrialization can reduce demand for natural capital through increased efficiency (assuming constant demand) and/or by changing practices (e.g. removing deforestation from the supply chain).
9	3	Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets	4		2	Access to financing may lead to natural resource over-exploitation, habitat fragmentation, and pollution, especially in the early stages of the development process.	2	Lending standards on finance could promote sustainability. Microfinance schemes could have a natural resource management requirement.
9	4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	3	Infrastructure upgrades can incorporate nature-based strategies to reduce risk of pollution and damage from floods/storms (Stickler et al. 2013). Industries like the food industry can make their supply chains more sustainable by for example adopting agroforestry practices (Droppelmann et al. 2000, Charbonnier et al. 2017) with healthier ecosytems providing the needed water (Vincent et al 2016, Ramesh et al 2021).	0		1	Upgrading and retrofitting for sustainability should reduce the negative environmental impacts of existing infrastructure and industry. Assuming constant demand, better resource use efficiency should require fewer resources for the same task, leading to reduced natural resource extraction and waste production, both of which benefit ecosystems.
9	5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	4		2	If upgrades are not done sustainably, greater natural resource overexploitation, pollution, or other environmental harms may result.	2	There are scenarios where research capacity and environmental outcomes are addressed simultaneously (e.g. UNIPA in Papua New Guinea).

9	a	Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States	3	Enhanced support could leverage nature-based solutions to sustainable and resilient infrastructure, including landscape management to support hydropower facilities (Wolancho 2012, Stickler et al 2013, Saenz et al 2014) and slope stabilization to protect from landslides (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020).	2	The construction of new infrastructure could degrade ecosystems.	2	Sustainable infrastructure could incorporate nature-based solutions that protect/restore/create habitat.
9	b	Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	4		2	If not done sustainably, could drive pollution and natural resource over-exploitation.	2	Value addition to commodities could include practices that support biodiversity like converting from monocultures to agroforestry.
9	c	Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	4		0		0	
10	1	By 2030, progressively achieve and sustain income growth of the bottom 40 percent of the population at a rate higher than the national average	3	The bottom 40% of the population are most likely to depend on nature for income/livelihoods (e.g. wild harvests, cultivation, ecotourism, pharmaceuticals) and resilience to the shocks that can undermine prosperity, particularly in rural areas. Securing the existence of, and access to, natural resources and ecosystem services, and the sustainable use thereof, is essential to supporting income growth (de Koning et al. 2011, Turner et al. 2012, Suich et al. 2015). For example, in a comparative analysis of environmental income from approximately 8000 households in 24 developing countries, environmental income accounts for 28% of total household income, 77% of which comes from natural forests (Angelsen et al. 2014).	1	If current and projected patterns of consumption continue as prosperity grows, this will lead to greater over-exploitation of natural resources.	2	Greater prosperity in support of greater equality could lead to the consideration of a broader range of concerns in decision-making, which could then lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
10	2	By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	3	As environmental degradation disproportionately harms women (Van Haaften and Van de Vijver 1999, Jahan 2008, Bell 2016, Deonandan et al 2017), maintaining healthier ecosystems could better enable women's social, economic, and political inclusion.	2	Greater economic inclusion could lead to greater over-exploitation of natural resources, if current patterns of consumption continue as prosperity grows, since the per capita human footprint is greater in the developed than in the developing world.	2	Greater inclusion and empowerment could lead to the consideration of a broader range of concerns in decision-making, which could then lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).

10	3	Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard	3	As environmental degradation disproportionately harms women (Van Haaften and Van de Vijver 1999, Jahan 2008, Bell 2016, Deonandan et al 2017), maintaining healthier ecosystems could better ensure equal opporutnity and reduce inequalities of outcome for women.	2	If current and projected patterns of consumption continue as prosperity grows, greater economic inclusion will lead to greater over-exploitation of natural resources, as the per capita human footprint is currently greater in the developed than in the developing world.	2	If people have greater access to opportunities, they may be more more empowered to make decisions that nurture rather than degrade ecosystems.
10	4	Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	5		2	If current and projected patterns of consumption continue as prosperity grows, greater economic inclusion will lead to greater over-exploitation of natural resources, as the per capita human footprint is currently greater in the developed than in the developing world.	2	Greater equality could lead to the consideration of a broader range of concerns in decision-making, which could then lead to more sustainable outcomes (e.g. prioritization for long term ecosystem productivity rather than short-term revenue generation).
10	5	Improve the regulation and monitoring of global financial markets and institutions and strengthen the implementation of such regulations	4		2	Regulations may encourage activities that over-exploit natural resources or drive pollution if sustainability is not made a priority.	2	If environmental performance is included in financial regulations and disclosure requirements, this could lead to substantive changes in how companies do business, with positive outcomes for ecosystems.
10	6	Ensure enhanced representation and voice for developing countries in decision-making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions	4		2	If stronger, more effective institutions focus on natural resource extraction, could accelerate rates of environmental degradation.	2	Stronger institutions could make it harder to engage in environmentally damaging activities like uncontrolled land clearing for small- or large-scale agriculture, mining, endangered species trafficking, etc.
10	7	Facilitate orderly, safe, regular and responsible migration and mobility of people, including through the implementation of planned and well-managed migration policies	3	Environmental degradation can drive migration (Suhrke 1997, Warner et al 2010, Piguet 2010), and healthier ecosystems could reduce its necessity.	2	Migration could lead to natural resource overexploitation in newly settled lands (e.g. wood over-harvesting in northern Uganda).	2	Better-organized migration can reduce environmental harms such as vegetation trampling, watercourse pollution, or disorganized waste disposal.
10	a	Implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with World Trade Organization agreements	4		2	Risk of looser environmental regulations allowing ecosystem degradation in developing countries.	2	Opportunity to prioritize ecosystem conservation in developing countries that would be less relevant in developed countries having less in the way of intact ecosystems to conserve.
10	b	Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programmes	4		2	Assistance could be used to support resource extraction activities that harm nature.	2	Assistance could be used to support conservation, restoration, and improved management.

10	c	By 2030, reduce to less than 3 per cent the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5 per cent	4		0		0	
11	1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	3	Slum upgrading, the provision of basic services, and the design and maintenance of safe and affordable housing could include features like public green spaces (Wolch et al. 2014), urban forest cover to address air quality (Nowak et al 2014) and the urban head island effect (Loughner et al. 2012, Edmondson et al. 2016), and nature-based solutions for managing sewage (Vymazal 2011) and urban stormwater runoff (NRDC 2011, Economides 2014). Nature will also likely be an important source of construction materials (Joseph & Tretsiakova-McNally 2010, Ding 2014).	2	Rennovation or new construction could lead to increased natural resource consumption (through both use of new/different building materials and changes in lifestyles), conversion of ecosystems to settlements, increased ecosystem fragmentation by new infrastructure (e.g. roads), etc.	2	Improved housing and communities could emit less waste (e.g. sewage, cooking smoke), be more energy-efficient, and include green space that offers wildlife habitat for pollinators, birds, etc.
11	2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	3	Nature can increase the safety and sustainability of transport infrastructure (roads, railways) by reducing the risk of damage from natural disasters such as landslides (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020).	2	The construction of new transportation infrastructure could harm ecosystems.	2	Expansion of public transport should reduce carbon emissions and other forms of air pollution, and green infrastructure could be used to protect transportation infrastructure, leading to habitat protection/restoration.
11	3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	3	Incorporation of ecosystem conservation and restoration should make urbanization and human settlement planning/management more sustainable through providing green space (Wolch et al. 2014), reducing pollution (Nowak et al 2014), buffering the risk of drought and flood (Postel & Thompson 2005, Bradshaw et al 2007), and creating opportunities for urban gardening to enhance food security (Gregory et al 2015).	2	Strengthening national and regional development planning could lead to land use strategies that prioritize development and construction over ecosystem conservation, restoration, and management, and urbanization of previously un-developed areas (sprawl) will degrade those ecosystems.	1	Better urban planning should reduce pollution and create habitat through creating urban green spaces. Improved living conditions could empower vulnerable people, enabling them to participate in decision-making in ways that lead to better environmental outcomes.
11	4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Should lead to protection of natural ecosystems as part of the world's heritage.

11	5	By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations	3	Healthy ecosystems and hybrid green/grey infrastructure can reduce the risk of water-related disasters. For example, land management influences flood/drought risk (Postel & Thompson 2005, Bradshaw et al 2007), forests reduce landslide risk (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020), and coastal ecosystems support community resilience (Arkema et al. 2013, Arkema et al. 2015).	1	Disaster risk reduction measures could lead to construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity).	2	Disaster risk reduction measures could lead to expanded use of green infrastructure / nature-based solutions to reduce disaster risks and impacts.
11	6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	3	The adverse environmental impacts of cities can be reduced by ecosystems like wetlands (neutralizing nutrient waste from sewage; Vymazal 2011). Urban green infrastructure can reduce stormwater runnoff and associated pollution of nearby water bodies (NRDC 2011, Economides 2014), and urban trees and green spaces can mitigate urban air quality (Nowak et al 2014) and the urban heat island effect (Loughner et al. 2012, Edmondson et al. 2016).	0		1	Reducing pollution reduces harm to ecosystems.
11	7	By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	2	Green spaces are of greater use to humanity when they are abundant and in good condition.	2	Greater access to existing green spaces without appropriate stewardship could lead to vegetation trampling, spreading of invasive species, etc.	2	Greater access could include creation of new or better management of existing urban green space, leading to habitat creation/restoration, especially if native plant species are used.
11	a	Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	5		2	Stronger development planning could lead to land use strategies that prioritize development and construction over ecosystem conservation, restoration, and better management.	1	Stronger development planning focusing on positive environmental links should lead to more coordinated and intentional natural resource management (e.g. protected areas, watershed management zones, etc.)
11	b	By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Frame work for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels	3	Nature-based solutions are central to implementing climate change mitigation (Popp et al 2014) and adaptation measures (Kabisch et al 2017).	2	Adaptation measures could focus on construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity).	2	Adaptation measures could leverage green infrastructure / nature-based solutions, and mitigation measures could include ecosystem conservation and restoration.

11	c	Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials	3	Local building materials may include nature-derived products (Joseph & Tretsiakova-McNally 2010, Ding 2014). Constructing buildings in harmony with landscape features (e.g. green infrastructure for managing temperature (Loughner et al. 2012, Edmondson et al. 2016) or hydrology (NRDC 2011, Economides 2014)) may make them more sustainable and resilient.	2	Construction in previously un-developed areas could disrupt ecosystems, and harvesting, cultivating, or otherwise producing local materials could also cause harm (e.g. brick kilns driving unsustainable charcoal use).	1	Sustainable and resilient buildings should be more efficient and require less maintenance/repair; this should lead to reduced demand for natural resources and reduced waste production, both of which benefit ecosystems.
12	1	Implement the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	3	Nature can be leveraged in achieving global resource efficiency in consumption and production, and in decoupling economic growth from environmental degradation, through strategies including agroforestry (Droppelmann et al. 2000, Charbonnier et al. 2017), ecosystem-based fisheries management (Fletcher et al 2010, Fletcher et al 2016, Gullestad et al 2017), and the use of green infrastructure to improve production-relevant resource streams such as fresh water (Vincent et al 2016, Ramesh et al 2021).	2	Risk of increased natural resource consumption and waste production overall if focus is on efficiency rates rather than on total volumes of materials.	1	Sustainable production and consumption should lead to reduced natural resource extraction and waste production, both of which benefit ecosystems.
12	2	By 2030, achieve the sustainable management and efficient use of natural resources	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Potential for harm if previously un-used areas are opened up for management/use.	1	Sustainable management and efficient use should lead to reduced natural resource extraction and waste production, both of which benefit ecosystems.
12	3	By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses	3	Food waste at the production level can occur due to catastrophies like blight, pests, drought, which can be mitigated with the use of genes from crop wild relatives (Hajjar and Hodgkin 2007, Ford-Lloyd et al. 2011).	0		1	Reduction of food loss and waste should mean less land and fewer chemical inputs are needed to feed people, thus reducing the environmental footprint of agriculture.
12	4	By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frame works, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	3	Ecosystems like wetlands can neutralize nutrient waste from fertilizers (Land et al 2016) and sewage (Vymazal 2011), some plants and microbes can be used for bioremediation of heavy metal and organic pollutants under some circumstances (Garbisu and Alkorta 2003, Perelo 2010, Megharaj et al 2011), and green infrastructure can reduce waterway contamination from urban stormwater runoff (NRDC 2011, Economides 2014).	0		1	Reducing pollution reduces harmful impacts on ecosystems.

12	5	By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse	3	Ecosystems like wetlands can neutralize nutrient waste from fertilizers (Land et al. 2016) and sewage (Vymazal 2011), reusing the nutrients and reducing pollution.	0		1	Reducing waste generation should reduce pollution, and increasing recycling and reuse should reduce demand for raw materials, both of which should reduce harmful impacts on ecosystems.
12	6	Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	3	For large and transnational companies dealing with the food and beverage industries, sustainable practices could include protecting watersheds (Chervier et al. nd., Walsh and Dowding 2012, Galli and Vousvouras 2020) and removing or minimizing deforestation from their supply chains (Curtis et al 2018, Weber and Partzsch 2018, Pendrill et al 2019, Pendrill et al 2019a, Seymoure and Harris 2019).	0		1	Should lead to sustainable business practices (e.g. removal of deforestation from supply chains).
12	7	Promote public procurement practices that are sustainable, in accordance with national policies and priorities	4		0		1	Reducing the environmental impacts of public procurement practices should benefit nature.
12	8	By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	5		0		1	Greater information and awareness create demand for and capacity to make decisions that decrease environmental impact of human activities.
12	a	Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production	5		0		1	More sustainable production and consumption should lead to reduced natural resource extraction and waste production, both of which benefit ecosystems.
12	b	Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products	5		0		1	Should lead to decreased environmental impact, as monitoring facilitates better management when data are robust and results are used to drive decision-making.
12	c	Rationalize inefficient fossil-fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	4		0		1	Reducing wasteful fossil fuel consumption should reduce global carbon emissions.

13	1	Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	3	Healthy ecosystems and hybrid green/grey infrastructure can strengthen resilience and adaptive capacity to climate-related hazards and natural disasters (e.g. land management influences flood/drought risk (Postel & Thompson 2005, Bradshaw et al 2007), forests reduce landslide risk (Lopez-Rodriguez and Blanco-Libreros 2008, Grima et al 2020), coastal ecosystems reduce storm surge (Arkema et al. 2013, Arkema et al. 2015)).	1	Adaptation strategies could prioritize construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity).	2	Adaptation strategies could include expanded use of green infrastructure / nature-based solutions.
13	2	Integrate climate change measures into national policies, strategies and planning.	5		2	Adaptation and mitigation strategies could lead to construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity) and/or development of monoculture non-native forest plantations for carbon sequestration without consideration of hydrology, biodiversity, or other ecological concerns.	2	Adaptation and mitigation strategies could lead to expanded use of green infrastructure / nature-based solutions for resilience and conservation/restoration of carbon-rich ecosystems.
13	3	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	5		2	Greater capacity could increase mitigation and adaptation activities focusing on construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity) and/or development of monoculture non-native forest plantations for carbon sequestration without consideration of hydrology, biodiversity, or other ecological concerns.	2	Greater capacity could increase mitigation and adaptation activities focusing on expanded use of green infrastructure / nature-based solutions for resilience and conservation/restoration of carbon-rich ecosystems.
13	a	Implement the commitment undertaken by developed-country parties to the United Nations Framework Convention on Climate Change to a goal of mobilizing jointly $100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	5		2	Mitigation activities could prioritize monoculture non-native forest plantations for carbon sequestration without consideration of hydrology, biodiversity, or other ecological concerns	2	Mitigation activities could focus on conservation/restoration of carbon-rich ecosystems.

13	b	Promote mechanisms for raising capacity for effective climate change-related planning and management in least developed countries and small island developing States, including focusing on women, youth and local and marginalized communities	5		2	Greater capacity could increase mitigation and adaptation activities focusing on construction of engineered infrastructure detrimental to ecosystems (e.g. dams, levees, seawalls that cut hydrologic connectivity) and/or development of monoculture non-native forest plantations for carbon sequestration without consideration of hydrology, biodiversity, or other ecological concerns.	2	Greater capacity could increase mitigation and adaptation activities focusing on expanded use of green infrastructure / nature-based solutions for resilience and conservation/restoration of carbon-rich ecosystems.
14	1	By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution	3	Nature-based nutrient management strategies like conservation/restoration of wetlands can help reduce marine pollution from land-based activities like agriculture (Land et al., 2016) and sewage treatment (Vymazal 2011) or by minimizing and cleaning urban stormwater runoff (NRDC 2011, Economides 2014).	0		1	Reducing pollution reduces harmful impacts on ecosystems.
14	2	By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Potential for harm if currently unused ecosystems are opened for management/use.	1	Protection, restoration, and better management should lead to improved ecosystem health.
14	3	Minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Should improve coral reef health.
14	4	By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Potential for harm if currently unused ecosystems are opened for management/use.	1	Better management of fish stocks should lead to healthier ocean ecosystems.
14	5	By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Conservation of coastal and marine ecosystems should enable better biodiversity stewardship.

14	6	By 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, eliminate subsidies that contribute to illegal, unreported and unregulated fishing and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the World Trade Organization fisheries subsidies negotiation, taking into account ongoing World Trade Organization negotiations, the Doha Development Agenda and the Hong Kong ministerial mandate.	5		0		1	Better management of fish stocks should lead to healthier ocean ecosystems.
14	7	By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	2	Healthier marine ecosystems are better able to supply the marine resources from which economic benefits can be derived.	2	Potential for harm if currently unused ecosystems are opened for management/use.	1	Should lead to more sustainable managment of aquatic ecosystems.
14	a	Increase scientific knowledge, develop research capacity and transfer marine technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular small island developing States and least developed countries	5		2	Enhancing the contribution of marine biodiversity to the development of developing countries might run the risk of over-exploitation of marine resources.	1	Increasing scientific knowledge should enable marine resource stewardship in ways that increase benefits to developing countries without harming ecosystems.
14	b	Provide access for small-scale artisanal fishers to marine resources and markets	2	Healthier marine ecosystems are better able to supply marine resources for artisanal fishers to access.	2	Greater access to natural resources and markets could lead to natural resource over-exploitation if not managed sustainably.	2	Greater access to natural resources and markets could encourage sustainable stewardship of marine resources through enhanced sense of ownership.
14	c	Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of “The future we want”	1		2	Potential for harm if currently unused ecosystems are opened for management/use.	1	Enhanced conservation and more sustainable management/use should benefit aquatic ecosystems.

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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Potential for harm if currently unused ecosystems are opened for management/use.	1	Better conservation, restoration, and sustainable use should improved ecosystem health.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Afforestation of historically non-forested areas may damage the non-forest ecosystems currently occupying those areas, particularly if non-native species and/or monoculture plot approaches are used. Expansion of management for harvest into previously wild areas is an additional risk.	1	Conserving, restoring, and better managing forests should lead to reduced habitat destruction, especially if the focus is on native species and community structures.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	Land degradation neutrality still allows for the degradation of healthy ecosystems.	1	Combating land degradation will help sustain healthy ecosystems.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Conserving mountain ecosystems should safeguard their health.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Should lead to recovery of threatened habitats and species.
15	6	Promote fair and equitable sharing of the benefits arising from the utilization of genetic resources and promote appropriate access to such resources, as internationally agreed	2	Nature is an important store of genetic resources, and healthier ecosystems are more likley to contain and maintain greater genetic diversity for humanity to benefit from.	2	Increased access could lead to over-exploitation.	2	Genetic diversity (by providing drought-, flood-, or pest-tolerant plants, or improving productivity of animals) is an important part of nature, and cultivated genetic diversity reduces pressure on wilder ecosystems. Increased access could lead to enhanced sense of value, providing incentives for better stewardship.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	0		1	Addressing illegal take and trade should help threatened species populations to recover.
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	1	Protection/management/restoration of flora, fauna, and/or ecosystems.	2	There can be potential unintended negative environmental outcomes associated with the use of chemicals and/or biocontrol to fight invasive species.	1	Fighting invasive species should help community/ecosystem dynamics recover and slow further spread of invasives.

15	9	By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	5		0		1	Better planning can lead to more coordinated and intentional natural resource management (e.g. protected areas, watershed management zones, etc.)
15	a	Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems	5		2	Potential for harm if currently unused ecosystems are opened for management/use.	1	More resources to support conservation and sustainable managemenet should lead to healthier ecosystems.
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	5		2	Potential for harm if pristine forests are converted to management for even sustainable timber extraction.	1	More resources to support sustainable forest management should lead to healthier forest ecosystems.
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	5		2	Potential for harm if new sustainable livelihood opportunities entail use of previously unused ecosystems.	1	Addressing illegal take and trade should help threatened species populations to recover, and focus on the sustainability element of alternative livelihoods should also benefit ecosystems.
16	1	Significantly reduce all forms of violence and related death rates everywhere	3	Environmental degradation can contribute to the incidence of violent conflict and associated deaths (Suhrke 1997), both of which could be reduced by the maintenance of healthier ecosystems.	0		0	
16	2	End abuse, exploitation, trafficking and all forms of violence against and torture of children	3	Environmental degradation can drive resource insecurity, the income-related and social stress of which can lead to exploitation and trafficking of children (William et al 2010, Molinari 2017, Brown et al 2019); healthier ecosystems may help prevent this.	0		2	Communities not fractured by child trafficking may have more energy to face challenges like ecosystem stewardship, and reduction of availability of forced child labor may lead to reduction in nature-harming activities (e.g. illegal fish processing) that rely on that labor.
16	3	Promote the rule of law at the national and international levels and ensure equal access to justice for all	4		2	Risk of environmental harm if laws do not explicitly incorporate conservation, restoration, and sustainable management.	2	Greater stability and stronger institutions can enable better natural resource governance.
16	4	By 2030, significantly reduce illicit financial and arms flows, strengthen the recovery and return of stolen assets and combat all forms of organized crime	4		0		2	Reducing crime could make it harder to traffic illegal species and engage in environmentally damaging activities like unregulated land clearing for small- or large-scale agriculture, mining, etc.
16	5	Substantially reduce corruption and bribery in all their forms	4		0		2	Reducing corruption and bribery could make it harder to traffic illegal species and engage in environmentally damaging activities like unregulated land clearing for small- or large-scale agriculture, mining, etc.

16	6	Develop effective, accountable and transparent institutions at all levels	4		2	If stronger, more effective institutions focus on natural resource extraction, environmental degradation could accelerate.	2	Stronger institutions could make it harder to engage in environmentally damaging activities like unregulated land clearing for small- or large-scale agriculture, mining, endangered species trafficking, etc.
16	7	Ensure responsive, inclusive, participatory and representative decision-making at all levels	4		2	More responsive, inclusive, participatory and representative decision-making might increase the priority level of natural resource over-exploitation if sustainability is not a priority.	2	More responsive, inclusive, participatory and representative decision-making is more likely to take into consideration and act upon viewpoints that prioritize environmental stewardship.
16	8	Broaden and strengthen the participation of developing countries in the institutions of global governance	4		2	A stronger voice for developing countries in global governance institutions might increase the priority level of natural resource over-exploitation.	2	A stronger voice for developing countries in global governance institutions might increase the priority level of environmental stewardship.
16	9	By 2030, provide legal identity for all, including birth registration	4		0		0	
16	10	Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	4		0		0	
16	a	Strengthen relevant national institutions, including through international cooperation, for building capacity at all levels, in particular in developing countries, to prevent violence and combat terrorism and crime	4		0		2	Stronger institutions should make it harder to traffic illegal species and engage in environmentally damaging activities like unregulated land clearing for small- or large-scale agriculture, mining, etc.
16	b	Promote and enforce non-discriminatory laws and policies for sustainable development	4		0		1	Prioritizing socially just sustainable development should benefit ecosystems.
17	1	Strengthen domestic resource mobilization, including through international support to developing countries, to improve domestic capacity for tax and other revenue collection	5		2	Financial resource mobilization could lead to natural resource over-exploitation to generate revenue.	2	Greater financial resource availability could enable improved conservation, restoration, and improved management activities funded by tax revenue.
17	2	Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of gross national income for official development assistance (ODA/GNI) to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries	4		2	Assistance could be used to support resource-intensive sectors that harm ecosystems.	2	Assistance could be used to support conservation, restoration, and improved management.

17	3	Mobilize additional financial resources for developing countries from multiple sources	5		2	Financial resource mobilization could lead to natural resource over-exploitation to generate revenue.	2	Financial resources could be used to support conservation, restoration, and improved management.
17	4	Assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries to reduce debt distress	4		2	Natural resources could be over-exploited to quickly generate the revenue needed to address debts.	2	Debt relief mechanisms such as debt-for-nature swaps can enable ecosystem conservation and restoration.
17	5	Adopt and implement investment promotion regimes for least developed countries	4		2	Investments could support activites that over-exploit natural resources.	2	Investments could support conservation, restoration, and improved management.
17	6	Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism	4		2	Tech transfer could support activites that over-exploit natural resources.	2	Tech transfer could support conservation, restoration, and improved management.
17	7	Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed	4		0		1	Better access to environmentally sound technologies could help reduce environmental impact of revenue-generating activities, through for example pollution reduction or lower demand for energy or raw materials.
17	8	Fully operationalize the technology bank and science, technology and innovation capacity-building mechanism for least developed countries by 2017 and enhance the use of enabling technology, in particular information and communications technology	4		2	Tech transfer could support activites that over-exploit natural resources.	2	Tech transfer could support conservation, restoration, and improved management.
17	9	Enhance international support for implementing effective and targeted capacity-building in developing countries to support national plans to implement all the Sustainable Development Goals, including through North-South, South-South and triangular cooperation	4		2	Successful SDG achievement could lead to overall environmental degradation, if tradeoffs identified in this work are not avoided.	2	Successful SDG achievement could lead to overall environmental improvement, if tradeoffs identified in this work are avoided.

17	10	Promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the World Trade Organization, including through the conclusion of negotiations under its Doha Development Agenda	4		2	A multilateral trade system without comprehensive and well-enforced environmental incentives and safeguards could lead to natural resource over-exploitation.	2	A better multilateral trade system could lead to more comprehensive and well-enforced incentives and safeguards for ecosystem conservation, restoration, and improved management.
17	11	Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020	3	Developing countries' exports often include nature-derived products (timber, fish, crops) (Nicita & Seiermann 2016). For an increase in such exports to be maintained over the long term, the ecosystems that provide them must be managed sustainably.	1	Could lead to natural resource over-exploitation to drive trade.	2	If increase in exports is based on value, not volume, could be driven by high-value labor-intensive crops from poly-cropping/agroforestry systems that improve ecosystem health and support biodiversity.
17	12	Realize timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries, consistent with World Trade Organization decisions, including by ensuring that preferential rules of origin applicable to imports from least developed countries are transparent and simple, and contribute to facilitating market access	4		2	Changes in trade dynamics could lead to increased demand for trade goods driving land conversion to crop/pasture and/or increased natural resource exploitation.	2	Changes in trade dynamics could lead to more efficient use of land and natural resources, reducing pressure on ecosystems.
17	13	Enhance global macroeconomic stability, including through policy coordination and policy coherence	4		2	More predictable macroeconomic conditions could make it easier to over-expliot natural resources, if long-term conservation, restoration, and improved management are not prioritized.	2	More predictable macroeconomic conditions could make it easier to plan for economic activities that prioritize long-term conservation, restoration, and improved management over short-term profits.
17	14	Enhance policy coherence for sustainable development	4		0		1	More coherent sustainable development policies should enable faster and better environmental outcomes through reducing energy wasted on inefficient administrative burdens.
17	15	Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	4		2	If not done sustainabily, could drive pollution and natural resource over-exploitation.	2	Should lead to decreased environmental impact if countries make that a priority.
17	16	Enhance the Global Partnership for Sustainable Development, complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, in particular developing countries	5		2	Successful SDG achievement could lead to overall environmental degradation, if tradeoffs identified in this work are not avoided.	2	Successful SDG achievement could lead to overall environmental improvement, if tradeoffs identified in this work are avoided.

17	17	Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships	4		2	Stronger partnerships might provide better support for activities that over-exploit natural resources if conservation and sustainability are not made a priority.	2	Stronger partnerships might provide better support for conservation, restoration, and better management.
17	18	By 2020, enhance capacity-building support to developing countries, including for least developed countries and small island developing States, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	4		0		2	Access to better data could lighten pressure on ecosystems by enabling more efficient management (e.g. climate-smart agriculture, better timing of crops sales in global markets for best prices, etc.).
17	19	By 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement gross domestic product, and support statistical capacity-building in developing countries	4		0		1	Access to better data, and aggregation of that data into better performance indices, should lead to decreased environmental impact by enabling better management.

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