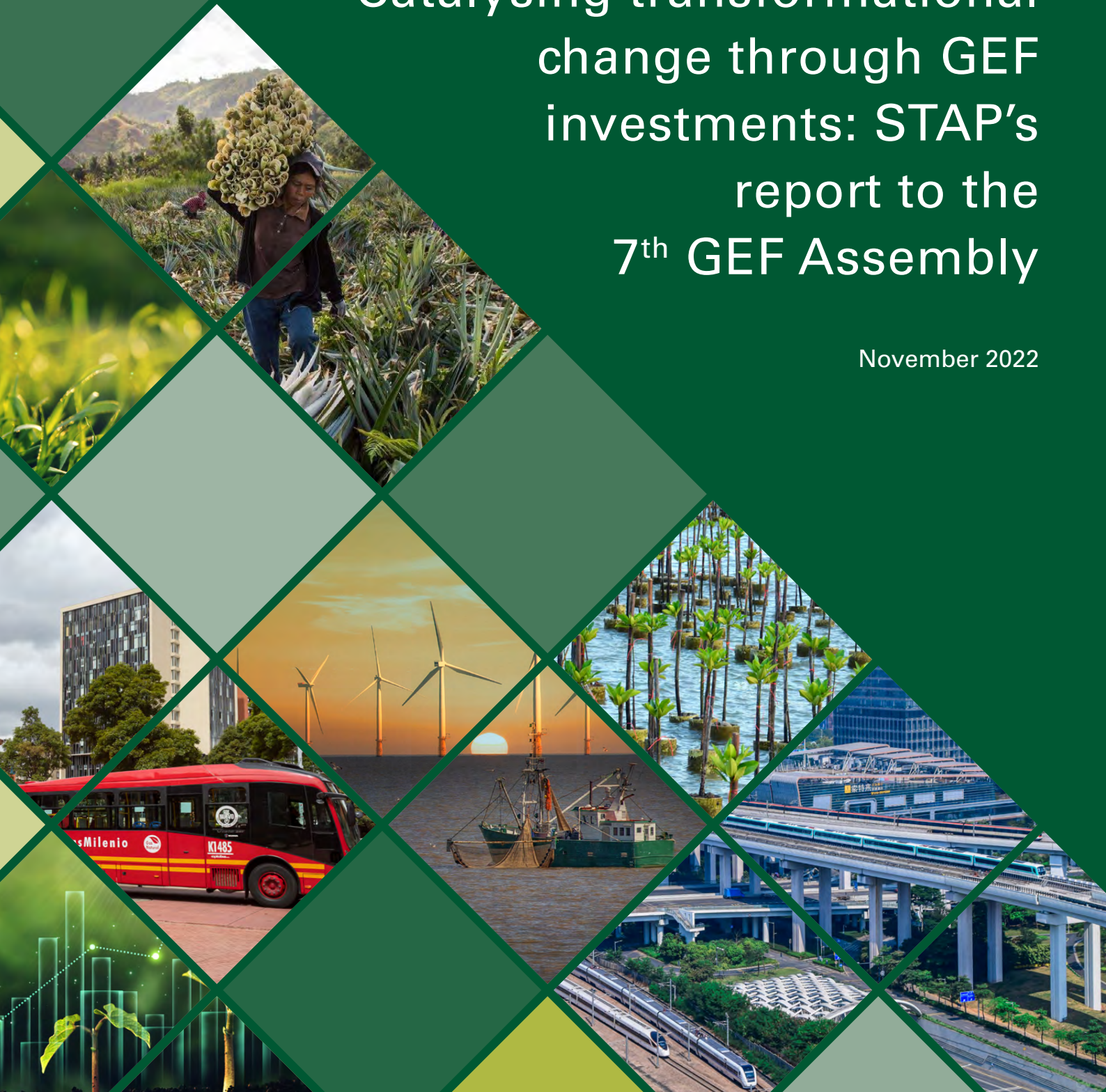# Catalysing transformational change through GEF investments: STAP's report to the 7th GEF Assembly

November 2022

ABOUT STAP:
The Scientific and Technical Advisory Panel (STAP) provides independent scientific and technical advice to the GEF on its strategies, programs and projects. https://stapgef.org

ABOUT GEF:
The Global Environment Facility (GEF) is a multilateral fund dedicated to confronting biodiversity loss, climate change, pollution, and strains on land and ocean health. Its grants, blended financing, and policy support helps developing countries address their biggest environmental priorities and adhere to international environmental conventions. The GEF connects 185 member governments with sustainability leaders across civil society, Indigenous Peoples, and the private sector, and works closely with other environmental financiers for efficiency and impact. Over the past three decades, the GEF has provided more than $22 billion in grants and blended finance and mobilized $120 billion in co-financing for more than 5,000 national and regional projects. https://www.thegef.org

Catalysing transformational change through GEF investments: STAP's report to the 7th GEF Assembly

November 2022

STAP
SCIENTIFIC AND TECHNICAL ADVISORY PANEL
An independent group of scientists that advises the Global Environment Facility

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CONTENTS

EXECUTIVE SUMMARY

Over the last 8 years, the GEF has moved to tackle global environmental issues across the traditional focal areas and across geographical areas with the Integrated Approach Pilots, the Impact Programs, and now the Integrated Programs. As these were designed, the GEF embraced the incorporation of theories of change, climate risk screening, top-down and bottom-up multistakeholder dialogue, and a focus on ensuring durability of outcomes. In GEF-8, there will be an increased emphasis on innovation, transformation, knowledge management and learning, policy coherence, behavioural change, and tracking co-benefits.

The Strategic Positioning Framework for the Eighth Replenishment of Resources of the Global Environment Facility's Trust Fund (GEF-8) sets out the goal of systems transformation to deliver global environmental benefits that ensure the GEF-8 vision of **a healthy, productive, and resilient environment underpinning the well-being of human societies**.

Current scientific literature underscores the need for GEF-8 to deliver more, enduring, global environmental benefits and to do so in ways that help transform the systems that underpin those benefits. The bad news is that the world needs this transformational change more urgently than ever, but it is not yet being achieved. The good news is that much is known about what needs to be done, and the GEF has a significant role in applying this knowledge to good effect.

Recent research indicates that, despite good intentions and efforts in the past decades to address the drivers of global change, progress towards reversing climate change and other forms of environmental degradation has been slow. The outcome is an Earth system that lacks the resilience to withstand external shocks and may soon breach a series of tipping points. **All recent major scientific assessments argue not just for changes in how the global environment is treated and valued but for such change to be immediate and genuinely transformative**.

A review of recent literature by the Scientific and Technical Advisory Panel (STAP) on what is needed to achieve a sustainable and resilient Earth system highlights six key areas or entry points for transformation: sustainable food systems and resource use (including land, water, and oceans); sustainable urban and peri-urban development (including smart cities and communities); energy decarbonization (including through renewables) and sustainable industries; education, engagement of women and youth, and equity for other marginalized populations, such as Indigenous Peoples; human health, well-being, capacity, and demography; and sustainable and just economies built on new development models and measures of progress. The first three transformation entry points are most closely aligned with the GEF's mission, as they focus on the environmental foundation necessary for achieving sustainable development, but the other three are often central to achieving the first three, as well as potential co-benefits of achieving them. Thus, all need attention.

Delivering the desired transformations will require going beyond small tweaks and incremental changes to existing systems. Comprehensive and holistic solutions need to be adopted to remodel complex societal, political, economic, and technical structures and incorporate innovations in technology, finance, business models, policy, behaviours, and institutions.

However, transformation with economy-wide or global effects takes sustained and coordinated effort, and it would be unrealistic to expect GEF projects to achieve transformation of global significance in one step. Research points to **the importance of programmatic and portfolio-wide coordination to build momentum systematically towards large-scale transformation**.

Transformation will require coordination across the levels at which the GEF operates to ensure that:

- **GEF projects** are integrated to maximize their efficiency and effectiveness and to deliver multiple enduring outcomes within program and portfolio strategic directions, and that pathways to scaling for transformation are clearly identified.

- The **GEF's focal areas and integrated programming** support well-targeted innovation and system transformation, which is essential to ensuring that individual GEF investments occur in the context most likely to deliver enduring transformational change.

- The **GEF develops a portfolio-wide strategy**, with policies, tools, and systems that promote adaptive and integrated approaches to transformation and to knowledge management and learning across its programs and projects.

- The **GEF deploys its considerable leverage** strategically to engage, support, and influence wider alliances to transform global economic systems and knowledge partnerships effectively.

To prepare for GEF-9, the GEF needs to look both externally and internally, and STAP makes seven **recommendations**, elaborated in section 4:

1. Develop a clear **risk framework** for the GEF that underpins an implementation plan to ensure its implications are reflected in all areas of the GEF's activities.

2. Develop a more systematic approach to **innovation**, based on the risk framework, with practical measures to give effect to this strategy across the GEF's operational levels in a coordinated way.

3. Establish a GEF-wide strategy and implementation plan to address **policy coherence** across all operational levels, including by catalysing external partnerships that promote better policy coherence.

4. Identify which **co-benefits** of GEF investments need to be tracked, and why, and establish systems to report on them.

5. Establish a new **knowledge management and learning** system which is everyone's business in the GEF, with culture change driven from the top down

6. Consider including the voices and roles of **youth and other marginalized groups**, such as Indigenous Peoples, in the design and implementation of investments, by broadening the coverage of the GEF's policy on **gender** to include these groups.

7. Strategically prioritize the GEF's engagement in external **partnerships** that can have a catalytic effect in transforming global economic systems, improving policy coherence, reorienting financial flows, and facilitating learning.

STAP will support the GEF's aspirations for GEF-8 and help it prepare for GEF-9, continuing to work on the above recommendations. STAP will contribute to a consistent approach to project design: annex 2 sets out revised screening guidelines following the introduction on the new Project Identification Form; and annex 3 explains what STAP will look for in particular when screening Program Framework Documents for the Integrated Programs. To encourage leading practice in project design, STAP will help develop a modest set of training materials and outreach activities for the GEF Partnership.

STAP will help with the GEF's work to accelerate systems transformation by reinforcing key strategic partnerships with leading science networks, and continue horizon-scanning to anticipate emerging challenges in issues such as environmental security, food systems demand, ecosystems and human health, technological change, youth engagement, equity, and governance.

SECTION 1: INTRODUCTION

The Scientific and Technical Advisory Panel (STAP) offers this report to support the Global Environment Facility (GEF) in its next phase (GEF-8, 2022 to 2026) and looking ahead to GEF-9, as the GEF implements the programming and policy recommendations agreed in the replenishment package.[1]

The GEF is operating in a fast-changing world that is recognized as volatile, uncertain, complex, and ambiguous. There has never been a greater impetus for catalysing transformation in the policies and practices of countries, sectors, and communities towards better valuing and conserving our collective natural life support system. The GEF has a track record of delivering an essential contribution to these concerns, yet the need to be ever more effective in doing so remains. STAP strongly supports the aspirations of GEF-8 to encourage integration, transformation, and enduring benefits, building on the best innovation. STAP frames its contribution around what is needed to deliver on these transformational aspirations.

STAP has offered advice to previous GEF Assemblies in 2014 and 2018, helping to reinforce issues that have become core to the GEF's operations; examples include implementing more integrated programming, pursuing transformation, ensuring durability, leveraging the best science, and using systems-thinking and theory of change, as well as emerging topics raised by STAP's horizon-scanning, such as the circular economy, novel entities, and the blue economy. These remain important. More recently, STAP has provided additional advice on key areas the GEF wishes to advance, such as co-benefits in sustainable development, environmental security, innovation and risk appetite, and better systems for managing knowledge. During GEF-7, a variety of STAP products have assisted with these and other topics (annex 1); this report does not revisit these topics in detail. However, they underpin a set of concerns that STAP suggests are particularly important for the GEF to consider as it starts up GEF-8, looking strategically towards GEF-9.

In this report, we outline some selected advances in science that both affirm the direction of the GEF and highlight issues to be considered in pursuing those directions (section 2). We then consider how these issues play out at the different levels of operation of the GEF (section 3) and conclude with recommendations for the Assembly to consider as strategies to help in achieving greater coordination and impact across the GEF's operations (section 4).

SECTION 2: KEY LESSONS FROM CURRENT RESEARCH

Current trends tracked by the scientific literature reinforce the need for GEF-8 to deliver more, enduring, global environmental benefits (GEBs)[2] and to do so in ways that help transform relevant global systems.[3] The bad news is that the world needs this transformational change ever more urgently, but we are not yet achieving it. The good news is that much is known about what we need to do, and the GEF has a significant role in applying this knowledge to good effect. Here, we briefly review relevant recent research.

2.1 THE NEED FOR TRANSFORMATIONAL CHANGE

Despite good intentions and efforts to address the drivers of global change, **progress towards reversing climate change and other forms of environmental degradation has been slow**. The 2022 *United in Science* report[4] jointly compiled by the World Meteorological Organization, the United Nations Environment Programme (UNEP), and other partners noted that:

> *"atmospheric greenhouse gas concentrations continue to rise, despite emissions reductions in 2020 resulting from the COVID-19 pandemic lockdowns" and "global fossil CO_2 emissions returned to 2019 pre-pandemic levels after a large, but temporary, absolute drop in emissions due to widespread lockdowns."*

Significant biodiversity losses continue to occur, land and oceans are still being degraded, deforestation and overfishing continue, and we have not succeeded in using chemicals or managing waste soundly. The UNEP *Making Peace with Nature* report[5] noted that:

> *"The current mode of development degrades the Earth's finite capacity to sustain human well-being" and that "current and projected changes in climate, biodiversity loss, and pollution makes achieving the SDGs even more challenging."*

This finding aligns with the global trend in nature's capacity to support overall human well-being, evaluated as part of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) assessment,[6] which indicates that:

> *"human actions are causing the fabric of life to unravel, posing serious risks for the quality of life of people… the capacity of nature to support quality of life has declined for 14 of the 18 categories of nature's contributions to people… including the capacity to provide beneficial regulation of environmental processes—such as modulating air and water quality, sequestering carbon, building healthy soils, pollinating crops, and providing coastal protection from hazards such as storms and storm surges." (figure 1)*

This makes the health of the planet a dominant concern, as noted in the World Economic Forum's 2022 *Global Risks Report*:[7]

> *"over a 10-year horizon, the health of the planet dominates concerns: environmental risks are perceived to be the five most critical long-term threats to the world as well as the most potentially damaging to people and planet, with 'climate action failure', 'extreme weather', and 'biodiversity loss' ranking as the top three most severe risks." (figure 2)*

The Future Earth *Global Risks Perceptions Report*[8] also noted five ecological risks (failure to take climate action, biodiversity loss, infectious disease, extreme weather events, and human environmental damage) among the most urgent global threats most likely to combine towards a global systemic crisis.

Nature's contribution to people	50-year global trend	Directional trend across regions	Selected indicator
REGULATION OF ENVIRONMENTAL PROCESSES			
1 Habitat creation and maintenance	↓ (decrease, well established) ↓ (decrease, well established)	◯ Consistent ◯ Consistent	• Extent of suitable habitat • Biodiversity intactness
2 Pollination and dispersal of seeds and other propagules	↓ (decrease, well established) ↓ (decrease, well established)	◯ Consistent ◯ Consistent	• Pollinator diversity • Extent of natural habitat in agricultural areas
3 Regulation of air quality	↘ (decrease, established but incomplete)	↑↓ Variable	• Retention and prevented emissions of air pollutants by ecosystems
4 Regulation of climate	↘ (decrease, established but incomplete)	↑↓ Variable	• Prevented emissions and uptake of greenhouse gases by ecosystems
5 Regulation of ocean acidification	→ (constant, established but incomplete)	↑↓ Variable	• Capacity to sequester carbon by marine and terrestrial environments
6 Regulation of freshwater quantity, location and timing	↘ (decrease, established but incomplete)	↑↓ Variable	• Ecosystem impact on air-surface-ground water partitioning
7 Regulation of freshwater and coastal water quality	↘ (decrease, unresolved)	◯ Consistent	• Extent of ecosystems that filter or add constituent components to water
8 Formation, protection and decontamination of soils and sediments	↘ (decrease, established but incomplete)	↑↓ Variable	• Soil organic carbon
9 Regulation of hazards and extreme events	↘ (decrease, unresolved)	↑↓ Variable	• Ability of ecosystems to absorb and buffer hazards
10 Regulation of detrimental organisms and biological processes	↓ (decrease, well established) ↘ (decrease, established but incomplete)	◯ Consistent ◯ Consistent	• Extent of natural habitat in agricultural areas • Diversity of competent hosts of vector-borne diseases
MATERIALS AND ASSISTANCE			
11 Energy	↗ (increase, well established) ↘ (decrease, well established)	↑↓ Variable ↑↓ Variable	• Extent of agricultural land —potential land for bioenergy production • Extent of forested land
12 Food and feed	↗ (increase, well established) ↓ (decrease, well established)	↑↓ Variable ↑↓ Variable	• Extent of agricultural land —potential land for food and feed production • Abundance of marine fish stocks
13 Materials and assistance	↗ (increase, well established) ↘ (decrease, well established)	↑↓ Variable ↑↓ Variable	• Extent of agricultural land —potential land for material production • Extent of forested land
NON-MATERIAL			
14 Medicinal, biochemical and genetic resources	↘ (decrease, established but incomplete) ↓ (decrease, established but incomplete)	◯ Consistent ◯ Consistent	• Fraction of species locally known and used medicinally • Phylogenetic diversity
15 Learning and inspiration	↓ (decrease, established but incomplete) ↓ (decrease, established but incomplete)	◯ Consistent ◯ Consistent	• Number of people in close proximity to nature • Diversity of life from which to learn
16 Physical and psychological experiences	↘ (decrease, established but incomplete)	◯ Consistent	• Area of natural and traditional landscapes and seascapes
17 Supporting identities	↘ (decrease, established but incomplete)	◯ Consistent	• Stability of land use and land cover
18 Maintenance of options	↓ (decrease, well established) ↓ (decrease, established but incomplete)	◯ Consistent ◯ Consistent	• Species' survival probability • Phylogenetic diversity

DIRECTIONAL TREND

Decrease ← → Increase

Global trends: ↓ ↘ → ↗ ↑

Across regions: ◯ Consistent   ↑↓ Variable

LEVELS OF CERTAINTY

● Well established
● Established but incomplete
● Unresolved

Figure 1: Global trends in the capacity of nature to contribute to good quality of life from 1970 to the present.

There are two indicators for many categories showing different aspects of nature's capacity to contribute to human well-being. Fourteen of the 18 categories show a declining trend (downward and downward-sideways arrows). For categories 11, 12, and 13, one of the two indicators shows improvement (upward-sideways arrow) while the other is declining. Nine of the 18 categories show consistent patterns globally, while the remaining nine are declining in some regions and improving in others (third column). (*Source: IPBES, 2019.*[9])

The outcome is an Earth system – our own life support system – lacking the resilience to withstand external shocks and liable to breach a series of tipping points.[10] This has far-reaching consequences for human livelihoods, health, well-being, and culture – all of which depend on environmental services – as well as impacts on youth, gender equity, and justice.[11] And it creates a feedback loop, as these disruptions further undermine social stability and the ability of government institutions to counteract the causes of deterioration[12] (figure 2). These feedback loops are already being experienced, with increasing conflicts and migration connected to environmental degradation, climate change, and extreme weather events in different parts of world, as noted by the United Nations Refugee Agency.[13] A recent White House report indicates that extreme events and conflicts are responsible for the annual movement of about 30 million people globally; this makes them the top two drivers of displacement, illustrating how environmental security has significant consequences for political stability.[14]

Several consensus statements from scientists have expressed concern about continued ecological degradation and the current, imminent, or potential damage from anthropogenic activities, calling for urgent and radical transformation and realignment of societal priorities.[15] Recent global scientific assessments continue to highlight the urgency and need for this transformation at scale. The Intergovernmental Panel on Climate Change Sixth Assessment Reports (Working Groups I, II, and III)[16] emphasized the need for urgent and ambitious actions and presented various climate-resilient developments as potential transformative actions (e.g. implementing emissions reduction and climate adaptation measures to support sustainable development for all), noting:

> *"five system transitions to a just and climate-resilient future: societal, energy, land and ocean ecosystems, urban and infrastructure, and industrial"* and *"these transitions call for transformations in existing social and social-technological and environmental systems that include shifts in most aspects of society."*[17]

Similarly, the *Global Chemical Outlook*[18] highlighted the importance of a systemic and transformational change towards safer and more sustainable chemical production and consumption that can achieve significant co-benefits, as well as product and finance innovations to reduce the harmful impacts of chemicals on humans and ecosystems and contribute towards achieving sustainable development. The report said that:

> *"shaping a pollution-free planet and contributing effectively and equitably to the SDGs requires system-wide transformation and strengthened capacities – global, national, and subnational – to act on air, water, soil, marine and coastal pollution and sound management of chemicals and waste."*

Likewise, the expert input to the post-2020 Global Biodiversity Framework,[19] which assessed how to achieve global biodiversity goals, commented:

> *"High levels of ambition for halting and reversing biodiversity loss cannot be met without transformative change which is a 'fundamental, system-wide reorganization across technological, economic and social factors, including paradigms, goals and values, needed for the conservation and sustainable use of biodiversity, long-term human well-being and sustainable development'."*

These findings align with IPBES assessments,[20] the *Global Biodiversity Outlook 5*,[21] and the *Global Land Outlook*,[22] and require concerted and aligned actions to reduce the rate of biodiversity decline, as was noted in UNEP's *Making Peace with Nature* report (figure 3).[23]

In short, all recent major scientific assessments argue not just for changes to how we treat and value the global environment but for such actions and change to be urgent and genuinely transformative.
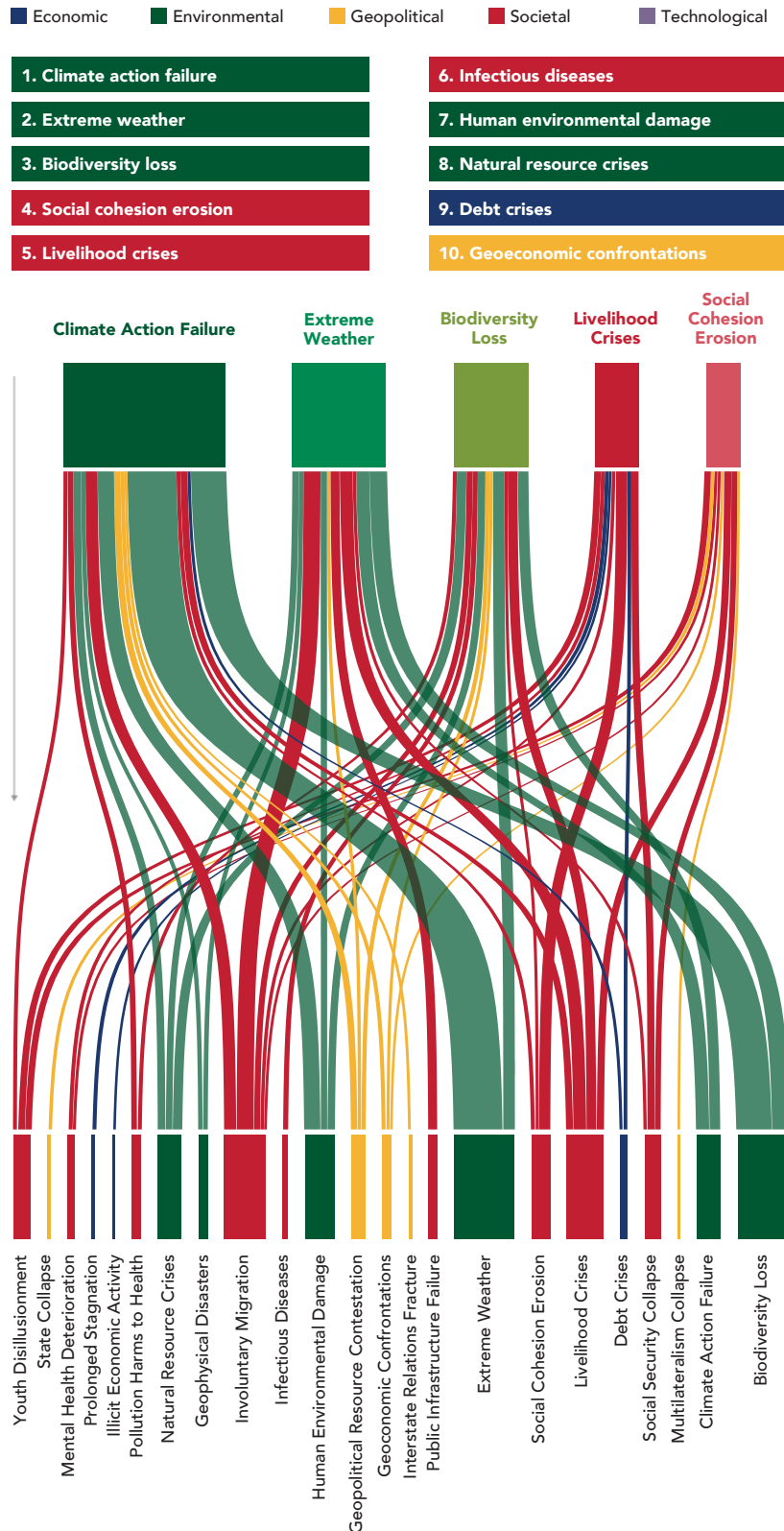
Figure 2: The most severe risks of the next decade on a global scale (top).

Note that five of the top 10 risks are environmental (green). The bottom diagram shows the adverse consequences and links of the top five global risks to livelihoods, health, well-being, youth, gender equity, justice, and social and political stability. (*Source: World Economic Forum, 2022.*[24])
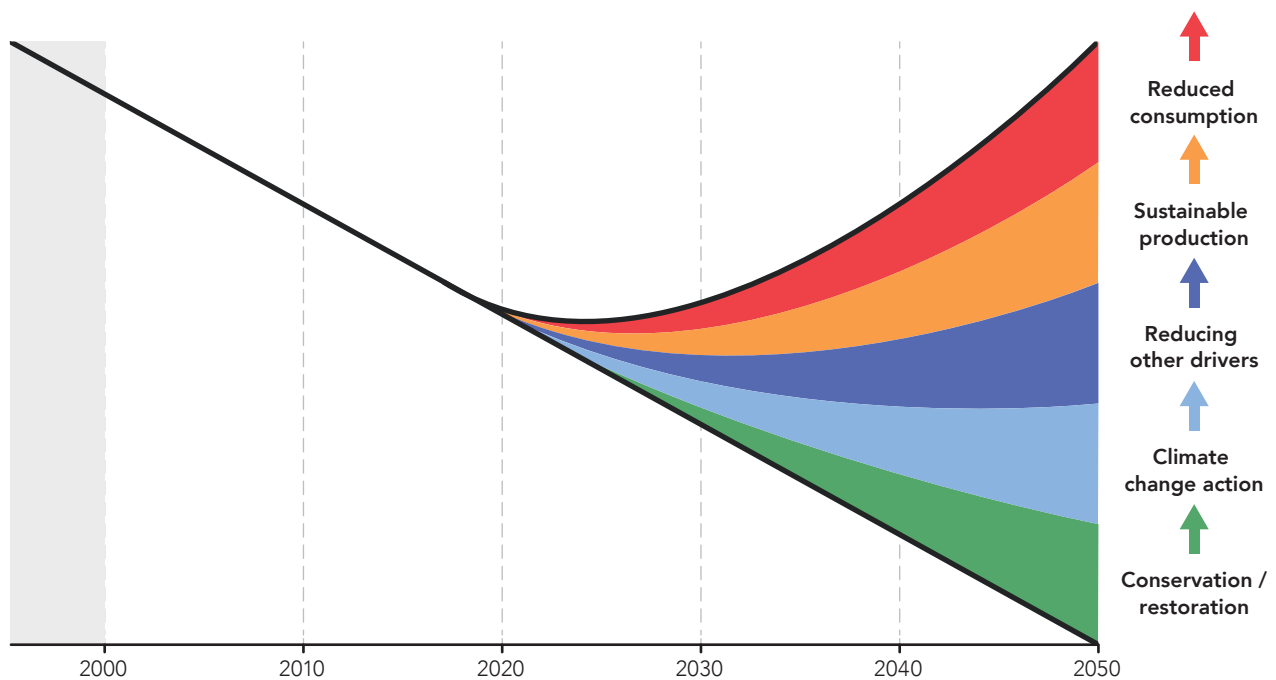
Figure 3: Aligned actions for protecting and restoring life on Earth.

The left axis shows the business-as-usual trend in rate of biodiversity decline projected to 2050. Taking a portfolio of aligned actions – including enhanced conservation and restoration of ecosystems; climate change mitigation; action on pollution, invasive alien species, and overexploitation; more sustainable production of goods and services, especially food; and reduced consumption and waste – can help change the trend towards reduced biodiversity decline and improved life on Earth. (*Source: UNEP, 2021.*[25])

2.2 WHAT NEEDS TO BE TRANSFORMED?

Research[26] **on the transformations needed to achieve a sustainable and resilient Earth system highlights key areas or entry points for transformation** (figure 4), which STAP consolidated as follows:

1. Sustainable food systems and resource use (including land, water, and oceans)

2. Sustainable urban and peri-urban development (including smart cities and communities)

3. Energy decarbonization (including through renewables) and sustainable industries

4. Education, engagement of women and youth, and equity for other marginalized populations

5. Human health, well-being, capacity, and demography

6. Sustainable and just economies built on new development models and measures of progress

The six entry points are broad groupings of interactions between human, technical, natural, and socioeconomic systems. There are subsystems within each transformation point. For example, the *sustainable food systems and resource use* entry point considers interactions involving land, water, and oceans, and other resource use, and their effect on biodiversity, natural capital, climate change, environmental pollution, and other systems. Similarly, the *energy decarbonization and sustainable industries* entry point considers how achieving energy goals affects resource use, for example the implications that using biofuel for energy purposes has for biodiversity conservation and water resources, or the effects that mineral mining has on environmental degradation, biodiversity loss, chemical pollution, and land
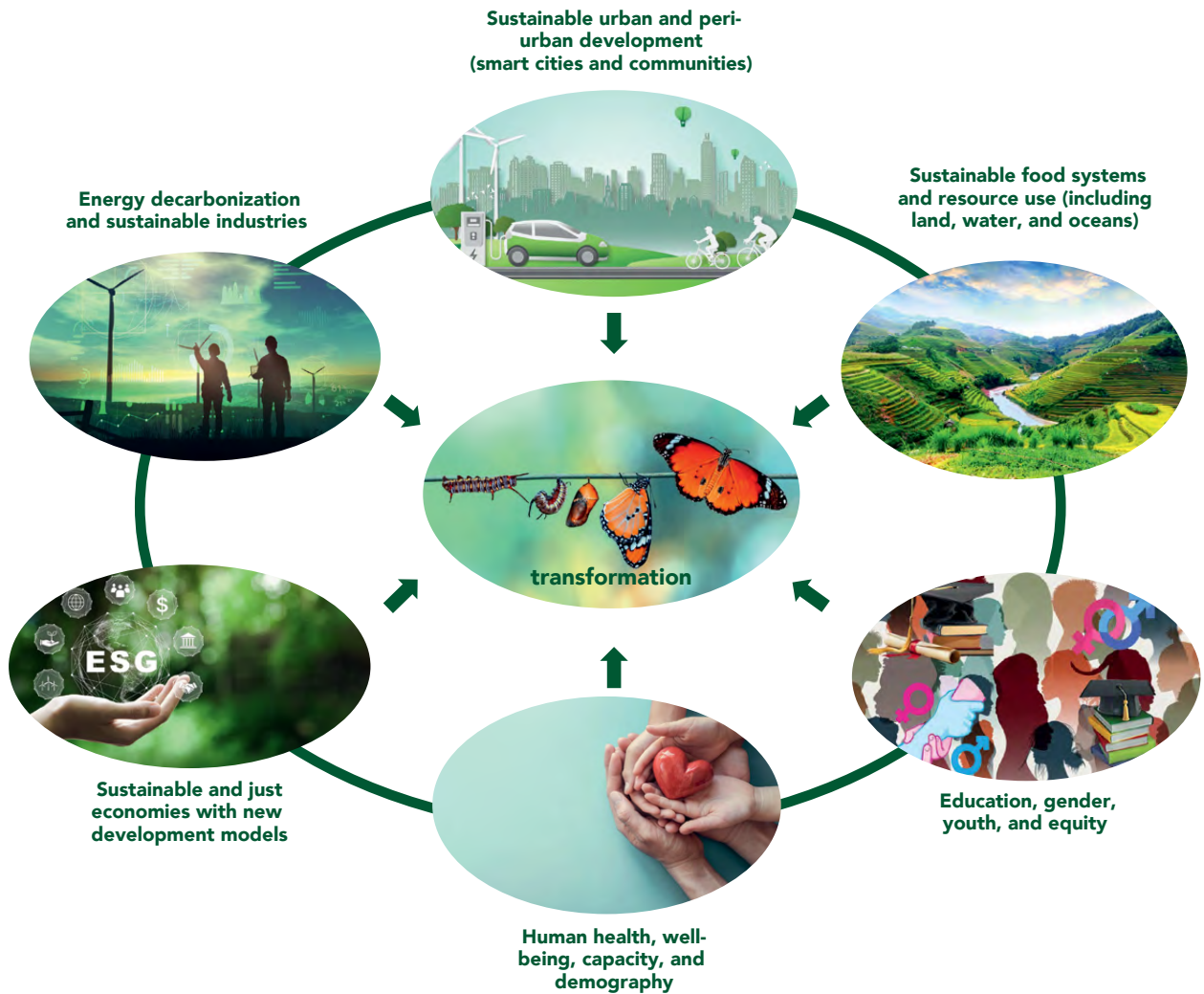
Figure 4: Six transformation entry points identified from the literature. (*Source: STAP.*)

degradation. The *human health and well-being* entry point considers the socioeconomic determinants of health, including income, education, neighbourhood, built environment, and health care access and quality, as well as the environmental determinants, such as air quality, clean water access, climate change, extreme weather, chemical exposure, waste, and pollution.

The first three entry points listed emphasize environmental outcomes. Current food systems need to be transformed to meet world's population needs and yet be compatible with the Paris Agreement and the Sustainable Development Goals (SDGs) and be resilient to future ecological and socioeconomic changes.[27] Food production must align with the protection of terrestrial and marine biodiversity, and avoid chemical pollution, while promoting healthy and nutritious diets.[28] Meanwhile, urban and peri-urbans areas must adopt development models that promote integrated and inclusive planning; low-carbon infrastructure; circular economy solutions, including for waste management; adequate access to water supply and sanitation; sustainable mobility and transport networks; and compact, safe, and healthy settlements. They must also be resilient to the effects of climate change, including through nature-based solutions.[29] And current energy systems need to be decarbonized by transforming to

renewable and modern energy sources (for cooking, heating, transportation, and electricity), in line with the Paris Agreement, and be universally available. Industrial pollution of the environment (air, water, and soils) must be avoided and reversed by adopting sustainable industrial practices, including the circular economy.[30]

The last three (socioeconomic) entry points listed emphasize human health and well-being, education, the role of gender and youth, and sustainability and justness in economic systems. The links between human health and planetary health are increasingly clear and motivating.[31] The important roles of women, youth, and marginalized populations, such as Indigenous Peoples, are now being recognized globally, if not always facilitated, and need to be addressed to achieve transformation. For example, the current generation of youth is the largest in history: there were 1.8 billion people between the ages of 10 and 24 in 2015, nearly 90% living in developing countries. This number is growing: 1.9 billion young people are projected to turn 15 years old during 2015–2030. Environmental sustainability and social stability can only be achieved if attention is paid to the future of these young people. Otherwise, they are liable to become trapped on degraded land, in a cycle of increasing desperation, frustration, and social exclusion.[32] On the opportunity side, youth are known to be drivers of innovation and cultural change and can lead transformative processes – if they are enabled to make contributions.[33] Many other aspects of equity and equality can similarly be key drivers and consequences of successful sustainability transformations, potentially becoming barriers to achieving environmental security if not tackled.[34]

Profound changes are also required in economic systems. Estimates suggest that the world is spending more money on perverse subsidies that damage the environment than is allocated to restoring nature and the climate, and that the financing gaps to protect biodiversity, adapt to climate change, or decarbonize the global economy are small compared with the funding mobilized for COVID-19 and tiny compared with annual flows of private capital.[35] Achieving policy coherence in global and national economic systems, so that GEBs, once achieved, are not undermined is a key transformation to underpin the GEF's work. It would require a change in the values and objectives of those economic systems[36] and new paradigms of knowing and valuing nature – which is estimated to provide benefits to human well-being worth $125–140 trillion per year, more than twice the global gross domestic product.[37]

Essential enablers underpin these transformations: institutional and governance arrangements, as well as social norms and behavioural change, play a critical role in helping society move towards sustainable development pathways, with burgeoning areas of research in recent years (box 1). Similarly, the technological revolution, including the suite of technologies that make up the Fourth Industrial Revolution,[38] is another enabler of transformation to sustainability across the identified entry points, as well as a force that can undermine these efforts if not applied appropriately (box 2). The GEF could explore how these emerging solutions can contribute to achieving its investment objectives across its projects, programs, and other activities in GEF-8 and beyond.

BOX 1: INSTITUTIONAL, SOCIAL, AND BEHAVIOURAL FACTORS TOWARDS ACHIEVING TRANSFORMATION

Transformation to a sustainable, resilient Earth system rests on engaging with the views and beliefs shaping the behaviours that are currently taking us away from this goal; focusing on technical solutions alone misses the need to address fundamental challenges in institutions, behaviours, and values that are key leverage points or causes of "lock-in" that must be addressed to enable transformation.[39] Human behaviour is influenced both by how we think and our sociocultural context. Much attention has been given to leveraging how humans think in order to change decision-making or behaviour in a planned and desirable manner, for example with what are popularly called "nudges".[40] However, focusing only on such approaches fails to account for the socioecological and cultural context in which thinking occurs. Thus, a nudge towards an action or outcome that is socially unacceptable is unlikely to result in a change in behaviour, just as uneven control of resources and power dynamics may prevent an action.[41] A critical pathway for transformation lies in connecting behavioural and social scientific approaches to understanding human behaviour and identifying opportunities to catalyse change, for example to establish an ethos of "sufficiency" (rather than consumerism) in production and consumption.[42]

Effective incentives for behavioural change vary by place, time, and the person or people involved. Further, they usually combine different approaches (e.g. collective learning, stakeholder participation, market approaches, or regulation) rather than a single strategy. And as a recent report emphasizes, "Long-lasting and wide-spread behavioural change at the individual level may require changes at the systemic (institutional and organisational) levels".[43]

Of course, this is as true of incentive structures for project design and project outcome within the GEF portfolio as it is for the targets of those projects, so that these insights can also assist the GEF's own operations. The GEF could consider how to align a succession of short-term project cycles to contribute to the "deep" scale of change (culture, values, norms) for durability of outcomes. In this regard, the GEF could consider working towards a "programmatic bank of experiences" that become guidance on what does or does not work. In this way, project designers could be incentivized to avoid developing new projects as a "clean slate", instead using prior learnings and designing interventions with the notion of "fit for purpose".[44]

Blue Planet Studio/Shutterstock.com

BOX 2: THE ROLE OF THE NEW TECHNOLOGIES IN ACHIEVING ENVIRONMENTAL SUSTAINABILITY

The Fourth Industrial Revolution (4IR[45]), including the suite of digital technologies like mobile internet, big data, quantum computing, artificial intelligence (AI), blockchain, 3D printing, and robotics, could help address environmental degradation in novel ways,[46] especially when combined with other new technologies identified as important by STAP,[47] such as gene editing, cellular agriculture, and engineered bio-based materials. Examples of existing applications that are relevant to the GEF's work include deploying blockchain, AI, and big data in decentralized renewable energy applications and smart city planning to enable decarbonization[48] or facilitating the circular economy by using 3D printing to enhance product redesign and resource efficiency.[49] Others include combining mobile internet, big data, Earth observation, and geographic information systems to monitor and conserve biodiversity and natural resources[50] and support natural capital accounting,[51] and using AI with other digital technologies to improve the effectiveness of early warning systems and predict air quality.[52] These technologies can also support social and behaviour change,[53] for example enhancing citizen engagement in environmental decision-making[54] and governance[55] or promoting new financing and business models.[56]

While pursuing positive opportunities from the 4IR, the GEF needs to evaluate and mitigate negative consequences. If digital technologies are not developed and applied within a sustainability framework, they can lead to more intensive use of natural resources, more waste, and more greenhouse gas emissions; amplify inequalities and disenfranchisement; and contribute to political destabilization.[57] Hence, new technologies should be intentionally geared towards sustainable transformations. The GEF can play a role in steering this, for example by investing in projects that demonstrate sustainable use and by supporting recipient countries to develop safeguards and governance structures aligned with sustainability objectives. The GEF could also engage the 4IR community as part of its wider alliances and engagements (section 3.4) to help shape 4IR development towards transformative environmental and sustainability goals.

2.3 HOW TO ACHIEVE TRANSFORMATION

Delivering the desired transformation will require going beyond small tweaks and incremental changes to existing systems (figure 4).[58] Radical and holistic solutions need to be adopted to remodel complex societal, political, economic, and technical structures[59] and incorporate innovations in technology, finance, business models, policy, behaviours, and institutions.[60] Interventions should aim to address the feedback between ecological and socioeconomic systems, overcome structural resistance to positive change, and help create and mainstream new and sustainable systems.[61] This involves changes in long-term system goals, in values and social norms, and in institutional arrangements (box 1).

What constitutes transformation is highly scale-dependent – a region's agriculture may transform from one commodity to another, or from smallholders to commercial agriculture, to support incremental adjustments at the level of the national economy.[62] Conversely, a combination of small-scale interventions can predispose a system to transformation. For example, a variety of coordinated interventions that reduce impacts or change norms (e.g. new product design, novel manufacturing technology, policy instruments for waste management, business models supporting sustainable product use, and improved product labelling) can predispose a sector to transform to a circular economy. Similarly, a combination of interventions addressing renewable energy technologies, energy-efficiency measures, associated policy frameworks, and appropriate market instruments and business models can accelerate the transition to sustainable energy systems. The same can be said of other national-scale sectoral transformations, such as achieving sustainable fisheries or transforming mobility.

However, transformation with economy-wide or global effect takes time and usually occurs only when changes across sectors or subsystems interact in a coordinated way to produce a shift towards higher-level objectives. For example, research suggests that achieving a "climate-neutral economy" could be enabled by transforming the agricultural, forestry, transportation, industrial, and energy sectors.[63] Similarly, transforming into a sustainable and circular economy will require changes across sectors involved in resource use and manufacturing, such as construction, transportation, agriculture, energy, chemicals, textiles, water, and waste,[64] including the removal of environmentally harmful subsidies.[65]

Ignoring behaviours, institutional arrangements, and practices that are barriers to desirable transformational change can undermine GEBs in the longer term.[66] For example, a conventional approach to reducing human pressures on wildlife in a protected area may involve reinforcing the area's existing boundaries, but the key to *transformational* change may be creating wildlife migration corridors that will be resilient to future shifts in temperature and rainfall that would otherwise change the geographic range of local ecosystems and species. As another example, initiatives designed to reduce the impact of chemicals can in fact end up locking in the use of those chemicals, such as the continued use of the highly hazardous pesticide paraquat, promoted by some national policy bodies due to its cheapness despite overwhelming evidence of harm to environments and human health.[67] Clear long-term goals and a multi-temporal pathways perspective focused on appropriate leverage points[68] to achieve them is essential.

For organizations like the GEF, it is usually unrealistic to expect individual projects to achieve transformation of global significance in one step (though occasionally this may be possible); instead, research points to the importance of programmatic and portfolio-wide coordination to build momentum systematically towards large-scale transformation.[69] However, this approach still requires a clear-eyed definition of transformational goals from the start. Such organizations can further strengthen their catalytic role by extending this purposeful coordination to their engagements and alliances with countries, external organizations, and stakeholders (figure 5).[70]
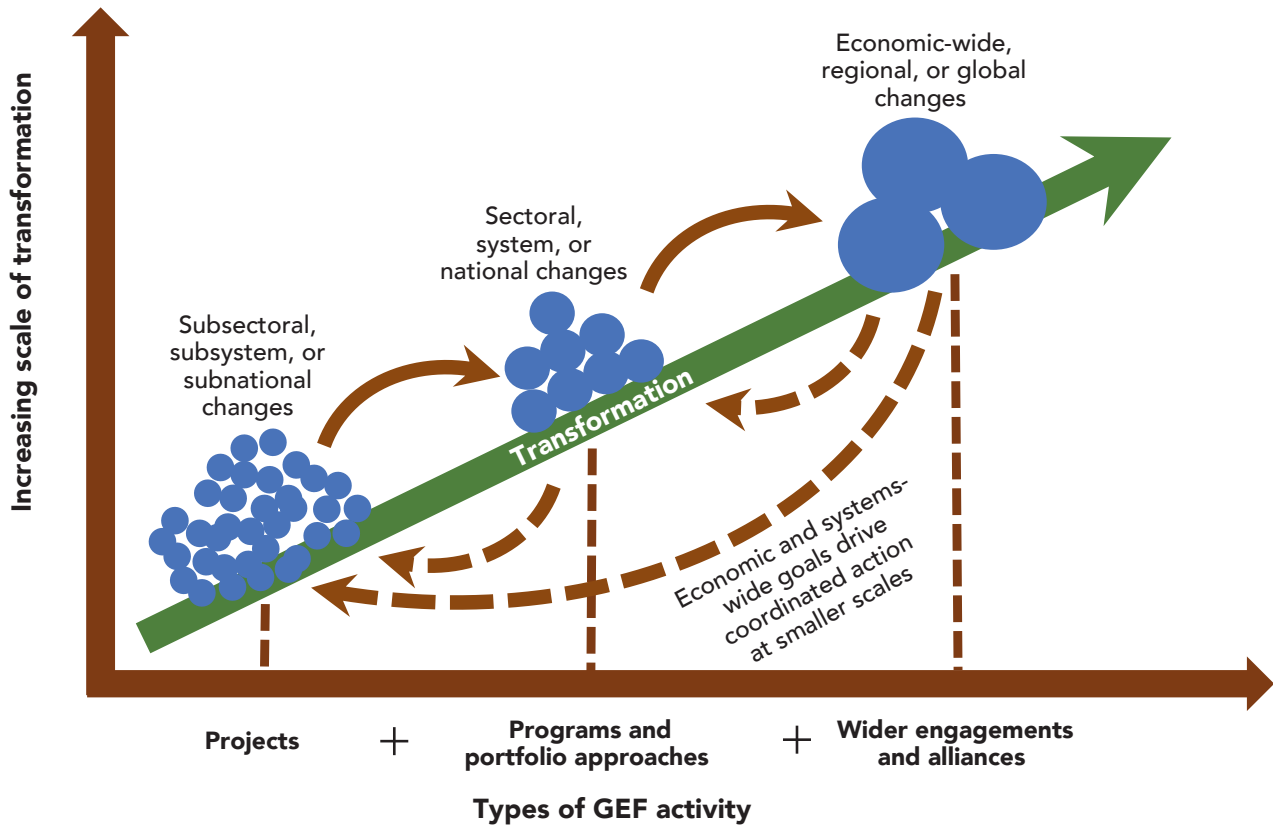
Figure 5: Achieving transformation at different levels of organization for a funder such as the GEF.

One individual investment (e.g. a project) does not usually deliver large-scale transformation. To achieve the type of global transformative outcomes that the GEF seeks to deliver in GEF-8 and beyond, it is essential to promote coherence, interactions, and synergy among many small- and medium-scale transformative investments and innovations, so these become mainstream and trigger large-scale transformation. (*Source: STAP.*)

2.4 KEY IMPLICATIONS FOR THE GEF

Of the six transformation entry points (figure 4), the first three (sustainable food systems and resource use, sustainable urban and peri-urban development, and energy decarbonization and sustainable industries) are most closely aligned with the GEF's mission as they focus on the environmental foundation necessary for achieving sustainable development, but the remainder (education and equity, human health and well-being, and sustainable and just economies) are often prerequisites to achieving the first three, as well as potential co-benefits of achieving these. A mapping of the GEF-8 Integrated Programs to these six entry points (figure 6) shows that the Integrated Programs directly and strongly address all environmental transformation entry points. The

Integrated Programs can also directly contribute to the human health and well-being entry point and indirectly contribute to other socioeconomic entry points, creating direct or indirect co-benefits. **Some of these co-benefits (for example, livelihood or economic benefits from integrated programming interventions) are prerequisite – that is, they are required to deliver the GEF mission** – whereas others may be beneficial but incidental effects that further enhance the value of GEF investments.[71] Both may be important for the GEF to track.

However, the review of recent research shows that achieving transformation requires interventions that intentionally seek to go beyond incremental changes, that **purposefully pursue synergy** with other investments or change processes, and that are designed at the appropriate scale to contribute to
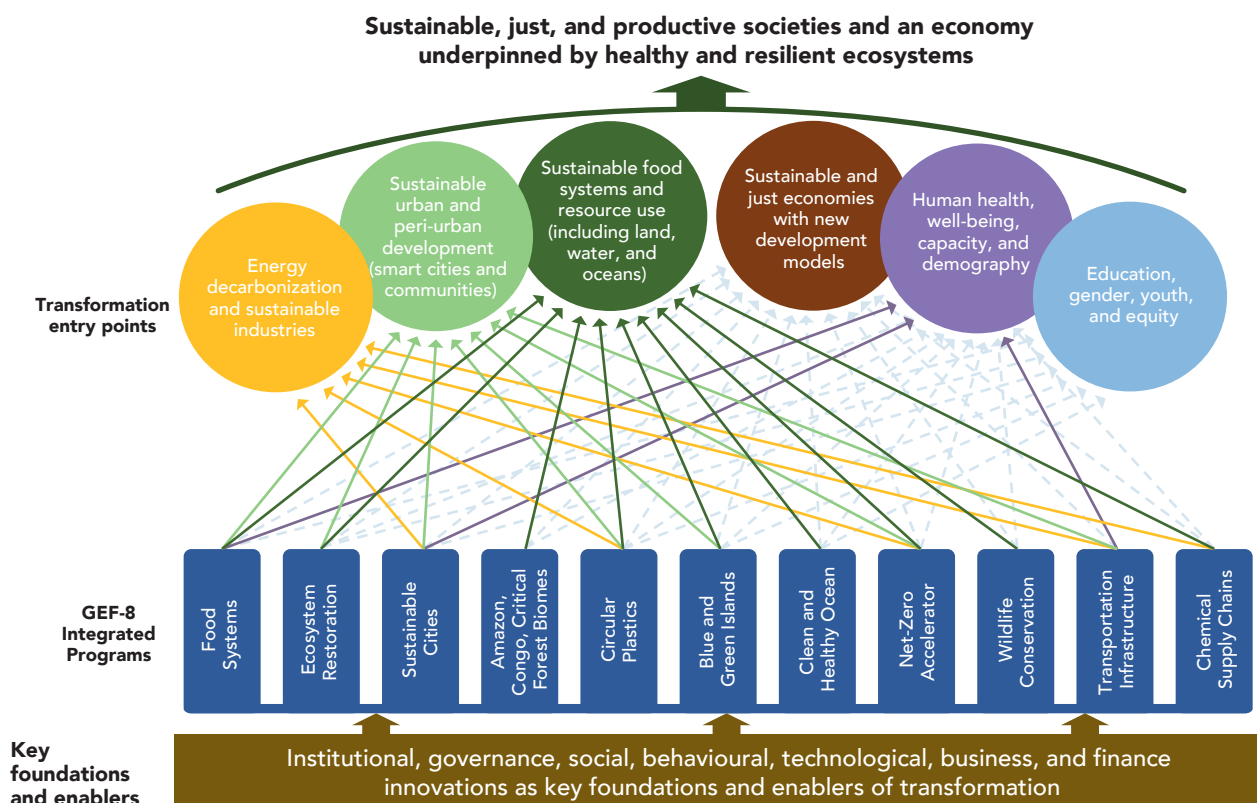
Sustainable, just, and productive societies and an economy underpinned by healthy and resilient ecosystems

Transformation entry points

- Energy decarbonization and sustainable industries
- Sustainable urban and peri-urban development (smart cities and communities)
- Sustainable food systems and resource use (including land, water, and oceans)
- Sustainable and just economies with new development models
- Human health, well-being, capacity, and demography
- Education, gender, youth, and equity

GEF-8 Integrated Programs

- Food Systems
- Ecosystem Restoration
- Sustainable Cities
- Amazon, Congo, Critical Forest Biomes
- Circular Plastics
- Blue and Green Islands
- Clean and Healthy Ocean
- Net-Zero Accelerator
- Wildlife Conservation
- Transportation Infrastructure
- Chemical Supply Chains

Key foundations and enablers

Institutional, governance, social, behavioural, technological, business, and finance innovations as key foundations and enablers of transformation

Figure 6: A mapping showing how GEF-8 Integrated Programs contribute to the set of key transformation entry points in the literature.

Heavy, solid arrows are the main direct contributions; light, dashed arrows suggest indirect contributions. The three transformations to the right are the core mission of the GEF; the other three contain changes that are necessary to underpin the enduring achievement of the GEF's mission, as well as representing potential co-benefits arising from the core mission. (*Source: STAP.*)

the desired change.[72] Transformative interventions must also consider the complexity of the problem, taking a **systems perspective** on the underlying drivers of change, **adopting flexible and adaptive management strategies, and embracing risk-taking on innovative solutions followed by careful monitoring and evaluation**.[73] There should also be **rigorous consideration of the durability of the expected outcomes** (i.e. the GEBs and other environmental and socioeconomic co-benefits) in the face of inevitable but often uncertain levels of future change in system drivers, and it is necessary to ensure that durability is aligned with long-term as well as short-term benefits.

Transformation invariably involves changes in societal values and institutional arrangements, so the GEF needs to engage more explicitly with how to

facilitate these changes to address the unsustainable use of resources and how humans interact with nature. Much of this engagement will involve **partnerships that extend beyond the GEF's core investment portfolio**, with a focus on **achieving inclusivity and equity for all**, regardless of gender, age, status, or level of marginalization. Transformation also requires addressing **policy coherence at all levels**, including supporting moves to **reduce environmentally perverse incentives**. The removal of such incentives will help shift **patterns of public and private finance** more generally towards sustainability, delivering valuable co-benefits while enhancing the durability of GEF investments.

STAP addresses how the GEF can build on these lessons from the literature to pursue more rapid transformation in the next section of this report.

SECTION 3: CATALYSING TRANSFORMATIONAL CHANGE TO MAXIMIZE ENDURING GLOBAL ENVIRONMENTAL BENEFITS

The GEF-8 Strategic Positioning Framework[74] articulates its goal as **systems transformation to deliver GEBs that ensure the GEF-8 vision of a *healthy, productive, and resilient environment underpinning the well-being of human societies*.** STAP agrees with the GEF-8 mantra that GEF investments need to be integrated, transformative, and enduring.[75] Achieving such investments requires coordinating across four levels of the GEF's operations[76] to ensure that:

1. GEF **projects** are integrated and deliver enduring outcomes within program and portfolio strategic directions.

2. The GEF's **integrated programming and focal areas** support well-targeted innovation and system transformation.

3. The GEF's overall **internal portfolio** provides strategy, tools, and systems that promote adaptive and integrated approaches to transformation and to knowledge management and learning across programs and projects.

4. The GEF's leverage is deployed to engage, support, and influence wider alliances to transform global economic systems and knowledge partnerships.

The theory of change narrative in the GEF-8 Strategic Positioning Framework[77] suggests that integrated programming should drive transformation in natural, food, urban, energy, and health systems. The framework identifies a number of barriers[78] and the importance of a whole-of-government approach in recipient countries (linked to policy coherence). It thus argues for focal area and integrated programming investments, with cross-cutting themes and levers.[79] The theory of change links to the GEF's four 2030 goals.[80] STAP has consolidated a set of enabling elements[81] for good project and program design from STAP reports through GEF-7

(box 3); these can help at all levels of the GEF's operations, but have different implications for each, as the following sections outline. Here, **issues that in STAP's view need particular attention at each level are highlighted**. A key issue that emerges from this analysis is the need for a purposeful approach to coordination across all the GEF's levels of operation; this point is revisited in section 4.

3.1 GEF PROJECTS

Projects (including child projects in integrated programming) are the basic building blocks of the GEF's investments. Projects should take an integrated approach to maximize their efficiency and effectiveness, achieving multiple enduring GEBs and co-benefits, with pathways to scaling for transformation clearly identified, recognizing that this should often happen within the context of a program or a focal area (section 3.2).

Pursuing *integration* and *durability* is particularly important at the project level to maximize the efficient and effective use of GEF resources:

- By being *integrated*,[82] GEF projects deliver as much as possible for the investment, while managing interactions that might otherwise undermine durability (box 4). A focus on integration also highlights the need to track multiple benefits and co-benefits, understanding that the latter may be necessary to garner local support to achieve the intended GEBs or may be ancillary benefits that are useful but should not distract from the targeted GEB outcomes.[83]

- Focusing on *durability*[84] ensures that GEF investments are not wasted and do not cause unintended negative consequences. The long-term resilience of outcomes in the face of future shocks and changes in drivers, such as population and climate, will be assisted
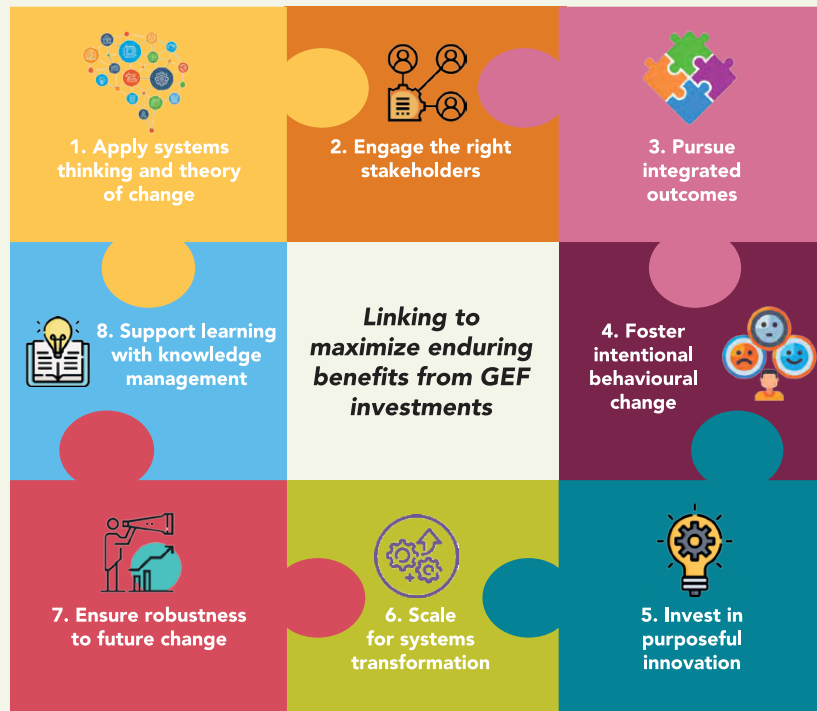
In brief, systems-thinking and using a theory of change (#1) underpin all areas of effective project (and program) design. Efficient use of the GEF's funding to maximize achievements with the resources invested requires taking an integrated approach that delivers multiple benefits (#3), including co-benefits that may be essential for stakeholder support. Engaging the right stakeholders (#2) is essential to building shared ownership and co-financing of the solutions with the best chance of scaling to achieve systems transformation (#6). Effective investments lead to benefits that are resilient and endure in the face of future change (#7), helped by the application of simple narratives of the future, attention to the changing climate and any adaptation measures that might be required, and analysis of the policy coherence context. Innovation (#5) can result in transformative change through better solutions (including innovating for scaling), within a clear programmatic strategy for taking project risk. Analysing values and incentives builds understanding of how to catalyse behavioural change (#4) and how to manage vested interests, and effective learning through knowledge management (#8) facilitates adaptation to changing circumstances (#7). Knowledge management also provides the evidence to support future programming and access to future finance and stakeholder buy-in (#2) and to build ownership and local relevance through South–South Knowledge Exchange. STAP advisory documents underpin each of these elements (see annex 1), all of which can be carried out in simple ways in the early stages of project design and can be developed further as needed for final project documentation and through implementation. The prudent application of these elements can deliver more effective projects while making the design load more efficient (see annexes 2 and 3).

BOX 4: INTEGRATION, VALUES, AND POLICY COHERENCE IN THE BLUE ECONOMY

The "blue economy" agenda globally aims to promote economic growth, social inclusion, and the preservation or improvement of livelihoods, while ensuring environmental sustainability of oceans and coasts[88] and equitable benefits for current and future generations.[89] These priorities have gained importance amid growing calls to protect 30% of the ocean by 2030 as part of the Convention on Biological Diversity post-2020 framework,[90] an importance reflected in two GEF-8 Integrated Programs (Blue and Green Islands; Clean and Healthy Ocean).

Yet underneath these ambitions to conserve and sustainably use ocean resources lies a great *diversity of assumptions* concerning the relative importance of different goals and their meaning in practice.[91] The blue economy agenda is often portrayed as a win–win for sustainable use; however, there are inherent trade-offs. For example, offshore renewable energy reduces carbon emissions but may also pollute ocean habitats or damage sensitive marine soundscapes to the detriment of biodiversity if sited without proper planning and mitigation action.

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More broadly, many approaches to reaping economic benefits in the short term from marine resources risk depleting marine species and ecosystems, which compromises long-term economic benefits and local livelihoods.[92] Indeed, there are *significant* risks that a rapid increase in public and private investment in ocean industries may accelerate trends that are environmentally destructive, increase social inequity, and undermine human well-being.[93] These value-laden issues cannot be resolved without proper stakeholder engagement.

The GEF should aim to ensure that public and private investments in the blue economy are integrated, transformative, and enduring, rather than adding incrementally to investment. Design should include a focus on national governance frameworks that integrate the best scientific evidence and promote *policy coherence* to ensure that conservation and sustainable use priorities are not undermined by policies and investments in other sectors. It should also include support to *institutional structures* that enable cooperation across subnational jurisdictions, among sectoral agencies at the national level, and across international borders, and that enable clear and specific discussions about trade-offs.

by applying *simple narratives*[85] that consider plausible futures early on in project design. Interventions that account for and are adapted to future uncertainties can thus be developed, for example by adapting to climate change (box 5) or encouraging cooperation to enhance environmental security.[86] The analysis of country policies during project design and implementation needs to be extended beyond identifying supportive policies to look at whether there may be a failure of *policy coherence*[87] that could undermine outcomes; this will help address leakage and perverse incentives.

BOX 5: ENHANCING CLIMATE CHANGE ADAPTATION

The costs of supporting developing countries to adapt to climate-related impacts are estimated to reach US$ 280–500 billion by 2050, and the adaptation finance gap is widening.[94] The Least Developed Countries Fund (LDCF) helps people in the most vulnerable countries adapt to climate change, while the Special Climate Change Fund (SCCF) focuses on the adaptation needs of (non-LDC) small island developing States and supports innovation, technology transfer, and private sector engagement in GEF recipient countries.

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Designing projects to respond to climate change is directly relevant to LDCF, SCCF, and multi-trust fund projects, but it is also an important consideration for any investment under the GEF Trust Fund that targets areas where people are increasingly vulnerable to the impacts of climate change.

The widening gap between adaptation needs and investments increases **the need to achieve effective and enduring adaptation outcomes through good design in all projects**. To support a robust rationale for adaptation, STAP has developed a decision tree for project developers to use at an early stage in project design;[95] this decision tree will assist LDCF and SCCF projects but can help determine whether any investment should address adaptation. The step-by-step tool helps project developers (1) decide whether adaptation is required; (2) identify projects that meet an adaptation need recognized by stakeholders; (3) ensure that projects complement current planned and indigenous adaptation efforts; and (4) maximize synergies and minimize trade-offs between adaptation benefits and GEBs such as biodiversity conservation and climate change mitigation. Using simple narratives to consider plausible futures early on in project design and to develop robust interventions can help enhance the resilience of GEF investments to future impacts from climate as well as other drivers. [96]

It is also important that projects clearly identify important *stakeholders*, as this helps to develop contextually appropriate project design and enduring stakeholder support and financing (e.g. box 4, figure 7). Achieving this requires a focus on both gender and intergenerational equity, such as accounting for the roles of women and youth (and especially the doubly marginalized female youth), as well as distributional outcomes. Stakeholder engagement (especially of women and youth) can help projects take a more consistent and realistic look at how necessary *behavioural changes* are to be achieved, accounting for social context and vested interests.

Consistent with the wider strategy, projects should also be designed to contribute to *transformative change*, with a clearly considered route to *scaling* and an appropriate level of *innovation*, and should also contribute to *knowledge management and learning*. The expectations for a particular project should be defined with reference to the wider program and portfolio appetite and objectives for risk and innovation (sections 3.2 and 3.3). Claims that a project will be transformative or innovative should be tested against realistic standards of aspiration in a project's objectives and of credible implementation in its theory of change.

To develop integrated and enduring projects that apply the above elements, projects need to employ a systems-thinking approach (figure 7), supported by a clear theory of change (box 6), to understand

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Figure 7: Systems-thinking and stakeholder engagement.

Piñatex is a company in the Philippines that uses waste pineapple leaves to produce an 80% bio-based and 20% polylactic acid alternative to leather, using less water and no harmful chemicals, producing less waste, yet also generating biogas and organic fertilizers.[97] **Systems-thinking enables this circular economy approach**[98] to reduce the greenhouse gas emissions, waste generation, toxic chemicals, heavy use of resources, and animal cruelty associated with traditional leathers and textiles.[99] **Strong stakeholder engagement** with farmers, cooperatives, and the Philippines Government helps to ensure that economic benefits accrue directly to them, as well as new jobs and gender empowerment, thereby gaining their enduring buy-in.[100]

the issues the investment seeks to address and to develop solutions that maximize benefits and minimize trade-offs.

In general, however, projects will be more effective when embedded in a clear programmatic strategy.

3.2 INTEGRATED PROGRAMMING AND FOCAL AREAS

The GEF-8 Programming Directions have continued the trend (that STAP strongly supports) towards more programmatic approaches to target underlying drivers of environmental change in a more integrated way. This is essential to ensuring that individual project investments (section 3.1) occur in the context most likely to deliver enduring transformational change.

Whether the programmatic context is provided by an integrated programming or by the more general direction of a focal area, it is particularly important to support targeted *innovation* and *transformation*, and to pay attention to *durability*, *learning*, and relevant *stakeholder* partnerships:

- *Innovation* and the associated risks of failure need to be managed at the programmatic level within a GEF-wide risk appetite for innovation, because it is at this level that a net benefit (in terms of greater returns) must be sought from taking greater risks. Projects that are intended to be more innovative should be supported with additional monitoring of key lead indicators, chosen to be sensitive to change so that rapid learning can reduce the risks of failure.[101]

- Similarly, while not every project will be *transformative* by itself, it is at the programmatic level, especially in integrated programming,

that a coordinated approach to transformation can be achieved. Programs should ensure that projects contribute through a clear pathway to achieving this transformative ambition. This may involve multiple projects contributing to a scaled outcome and may require innovation and capacity-building within the program to be specifically targeted at achieving this scaling (figure 8). Lead metrics for transformation are most suitably developed at this program level.[102]

- *Durability* should be addressed by focusing on understanding the drivers of resilience and policy coherence in the programmatic context. Support can be provided to projects to articulate appropriate *simple narratives* of the future through which to build the resilience of overall program outcomes. Attention should be paid particularly to ensuring that the outcomes endure in a changing climate. Analyses of *policy coherence* across the relevant sectors and geographies should be used to help avoid investing where conflicting policies may undermine achievements and to direct innovation, capacity-building, and South–South knowledge exchange towards improving national and regional policy coherence (figure 9; see also box 4).

- GEF programs and focal areas establish and engage in many *multi-stakeholder processes*. These networks should be used judiciously to help consider policy coherence, financing, and how to achieve behavioural change, all within a strategic engagement towards achieving system transformation (figures 8 and 9). Stakeholders need to be inclusive of the perspectives of women, youth, Indigenous Peoples, and socially marginalized groups.

BOX 6: OVERCOMING LAND DEGRADATION IN BURKINA FASO: GOOD PROJECT LOGIC

Land degradation is a serious and recurring problem in Burkina Faso, experienced in more than 31% of its territory and estimated to cost the country about 26% of its gross domestic product. The GEF-funded project Sustainable Land Management to Strengthen Social Cohesion in the Drylands of Burkina Faso seeks a transformation to sustainable and landscape integrated management, following the principles of land degradation neutrality (LDN)[103] to reduce or reverse degradation. The project aims to achieve multiple global environmental outcomes in the Centre-Nord region, where land-based conflicts have contributed to the internal displacement of people, the breakdown of social cohesion, and food insecurity. The system description identifies the main drivers of degradation at different levels and barriers to tackling them (see inserted figure).

The proposed alternative scenario identifies four key causal pathways to achieving transformational change towards sustainability, as well as a set of related assumptions, such as political will in the country. Social processes (e.g. strengthened governance and institutional arrangements, and gender-sensitive solutions) necessary to achieve GEBs are captured throughout the pathways. For example, understanding the roles of men and women, and their attitudes and behaviours, is necessary to develop context-appropriate responses to land degradation. Embedding these social processes throughout the interventions is expected to help generate co-benefits (e.g. a reduction in land-based conflicts through enhanced participation of women in decision-making and conflict resolution mechanisms) to ensure ongoing support for the changed practices, and hence enduring benefits. Integrated land-use planning will underpin the design of LDN interventions and the mechanism to counterbalance land degradation that is central to ensuring that net degradation decreases.

This case illustrates how **a good internal logic can underpin strong design** at the project level, including pathways to scaling, which will be essential for several land-related GEF-8 Integrated Programs.
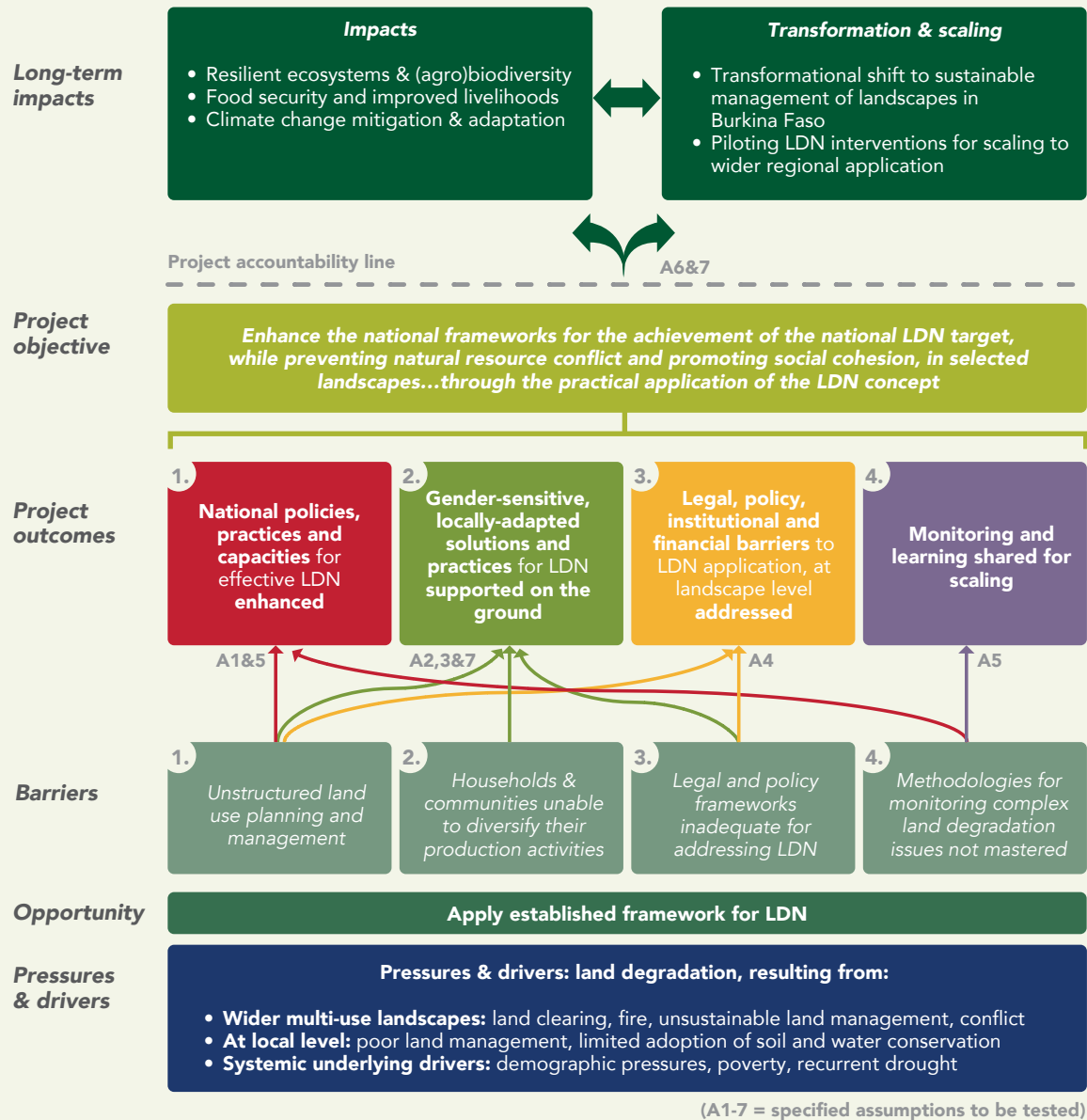
Long-term impacts

Impacts	**Transformation & scaling**
• Resilient ecosystems & (agro)biodiversity • Food security and improved livelihoods • Climate change mitigation & adaptation	• Transformational shift to sustainable management of landscapes in Burkina Faso • Piloting LDN interventions for scaling to wider regional application

Project accountability line — — — — — — — — — — — — — — — — — — A6&7 — — — — —

Project objective

Enhance the national frameworks for the achievement of the national LDN target, while preventing natural resource conflict and promoting social cohesion, in selected landscapes…through the practical application of the LDN concept

Project outcomes

1. National policies, practices and capacities for effective LDN enhanced	2. Gender-sensitive, locally-adapted solutions and practices for LDN supported on the ground	3. Legal, policy, institutional and financial barriers to LDN application, at landscape level addressed	4. Monitoring and learning shared for scaling
A1&5	A2,3&7	A4	A5

Barriers

1. Unstructured land use planning and management	2. Households & communities unable to diversify their production activities	3. Legal and policy frameworks inadequate for addressing LDN	4. Methodologies for monitoring complex land degradation issues not mastered

Opportunity

Apply established framework for LDN

Pressures & drivers

Pressures & drivers: land degradation, resulting from:

• **Wider multi-use landscapes:** land clearing, fire, unsustainable land management, conflict
• **At local level:** poor land management, limited adoption of soil and water conservation
• **Systemic underlying drivers:** demographic pressures, poverty, recurrent drought

(A1-7 = specified assumptions to be tested)

Figure: Simplified theory of change for the land management project in Burkina Faso, including drivers, barriers, assumptions, and expected outcomes. (Source: redrawn from GEF Project ID11003).

The program perspective should also help to prioritize *integration* within and across projects and to identify *behavioural change* issues that are relevant programmatically (and that may require innovation), particularly for scaling. Within a GEF-wide strategy, the program level is also key to anchoring effective *knowledge management and learning*. The Integrated Approach Pilots and Impact Programs have had useful knowledge management and South–South exchange, as have notable successes in the Small Grants Program, but there is an opportunity to structure this knowledge management better to coordinate learning from innovation and transformation. Better coordination is also needed to ensure compatibility and cross-learning across program areas.

The program perspective is key, but it needs to be embedded in a coherent approach at the GEF-wide level.

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Figure 8: Scaling finance for conservation.

A good example of **scaling across multiple programmatically aligned projects** is provided by the *project finance for permanence* approach, to generate new sustainable funding sources and secure the durability of conservation interventions.[104] The approach was built from three successful major conservation initiatives: the Brazilian Amazon Region Protected Areas, Forever Costa Rica, and the Great Bear Rainforest in Canada. These were scaled through regional projects in Colombia, Peru, and beyond the Americas to Bhutan, with new projects approved for Gabon and Namibia.[105] The main features of the approach include developing multilevel partnerships of equals with diverse stakeholders, such as Indigenous Peoples, local communities, government agencies and ministries, philanthropic investors, and NGOs, and securing full funding pledges and commitments for conservation and community development activities in a single business transaction. Capital funds flow directly to organizations on the ground responsible for the administration and implementation activities. Innovative implementation and long-term financing plans are adopted as official government policy, providing the necessary institutional backing.[106]

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Figure 9: Urban scaling in transport.

Transport-oriented projects supported by the GEF and the World Bank in the city of Shenzhen, China,[107] and in Colombia[108] illustrate **scaling for urban transformation using integrated approaches, innovation, policy coherence, and effective multi-stakeholder engagement**, which will be important in several GEF-8 Integrated Programs. Shenzhen's transit-oriented development (left) integrates the city's approaches to planning and infra-structure investments, whether public or private, driving innovative and enduring financing models to prioritize compact, walkable, pedestrian-oriented, mixed-use communities. All stakeholders contribute to goal setting, problem-solving, project implementation, and policy coherence. Success is evidenced by the city's adaptation to changes within ecological constraints while managing a population transition from 330,000 in 1980 to over 13 million today.

The Colombia Integrated Mass Transit System project (right) provides high-quality bus rapid transit systems along strategic mass transit corridors in selected medium and large cities, including the Bogota Metro Line. It improves accessibility through feeder services and fare integration. The project includes activities supporting institutional capacity-building and formulating integrated urban transport policies as part of the novel development of inte-grated transport systems at scale in Latin America more widely.[109]

3.3 GEF-WIDE PORTFOLIO APPROACHES

Although projects and integrated programming are the main delivery mode for the GEF, the effectiveness and coherence of these projects and programs is powerfully affected by portfolio-level approaches to the internal functioning of the GEF Partnership. Actions at the portfolio level should include setting the strategic priorities, developing policies and guidelines, creating tools and frameworks for all investments, and implementing various private sector activities and investment windows that are within the GEF's sphere of control. Greater attention to ensuring these approaches are well coordinated can improve outcomes and impacts at all levels.

Most critically, it is at this level where organizational strategy with respect to *risk*, *innovation*, and *transformation*, as well as systems for monitoring and for *knowledge management and learning*, need to be set:

- A clear portfolio-wide "*risk appetite*" framework for taking managed risk is required to achieve *innovation* and *transformation*; the framework can guide programs and projects, for example with increased investment in monitoring and rapid adaptive learning in riskier parts of the portfolio.[110] Some innovative projects (such as non-grant instruments and the new dedicated window for innovation) may be treated specially within the overall GEF portfolio to this end.

- A portfolio-wide strategy for pursuing scaling for *transformation* (based on the risk appetite framework) should also ensure that there is sufficient ambition for transformation at programmatic levels and that this translates into well-targeted projects that collectively create plausible pathways to achieve that transformation.[111] At a corporate level, this can also help prioritize higher-level stakeholder partnerships – for example with groups of countries, global NGOs, or the private sector – that will facilitate transformation and drive GEF policy for capturing appropriate lead metrics of transformation.

- A corporate strategy and approach to capturing, sharing, and applying *knowledge* learned from programs and projects needs to be designed to support innovation, transformation, and scaling pathways, taking account of social and cultural design issues as much as technical ones. The strategy can be informed by successes in the Small Grants Program, as well as external examples (figure 10). Knowledge management systems should support the collection of information to speed up learning and adaptive management of projects and programs, as well as the collection of evidence to maintain the support of stakeholders at all levels (collecting evidence may include monitoring co-benefits and the overall impacts of GEF investments[112]). These knowledge management systems should especially support South–South Knowledge Exchange,[113] as well as the knowledge exchange needs of marginalized or disempowered groups and of Indigenous Peoples. *Knowledge management and learning* requires culture change throughout the GEF Partnership, led from the top and acknowledging the importance of tacit knowledge held in the Partnership.[114] It is vital to adopt a culture of valuing learning from failures as much as from successes, so that good documentation of both is encouraged to increase understanding of what works under what conditions; these lessons can then be applied in future design.

Durability of GEBs achieved from GEF investments will also be improved by a strategy for addressing *policy coherence* within projects and programs throughout the operational levels of the GEF. Realigning public and private finance, that would otherwise be inimical to enduring environmental outcomes, is important for achieving wider global benefits and may also help to increase levels of (co-)financing in the longer term. Judiciously prioritizing the GEF's diverse *stakeholder partnerships* at higher levels can help with these objectives, as can aligned geographic and sectoral prioritization of other corporate activities (e.g. civil society organization engagement), country capacity-building, the innovation window, and selection of medium-sized projects.

WOCAT 2020+

The Global Network for Sustainable Land Management

putting land on the global agenda,
mobilizing knowledge to fight degradation,
stimulating the uptake of sustainable practices
for the benefit of people and nature

Hanspeter Liniger

Figure 10: Improving knowledge management and learning, building on the experiences of others.

WOCAT (The World Overview of Conservation Approaches and Technologies) is one example of the governance approaches and know-how of GEF partners and other institutions that can be drawn on to develop **strategic approaches to knowledge management, sharing and learning, and South–South cooperation for knowledge exchange** – efforts that are needed to deliver the enduring GEBs sought for GEF-8.[115] With eight consortium partners, WOCAT has 30 years of experience in managing, sharing, and applying sustainable land management (SLM) knowledge and practices through multiple, coordinated pathways.[116] These pathways include building and maintaining an effective global network of SLM specialists; developing standardized tools and methods for supporting decisions at local, national, and global levels; structuring and maintaining a global knowledge base on SLM; and disseminating targeted information via diverse media. These all help enhance the capacity of a range of actors to promote the adoption of SLM. Networks and platforms such as WOCAT, as well as the Knowledge Bank of Norad, the Conservation Measures Partnership, IW-Learn, and the Knowledge Hub of the United Nations Convention to Combat Desertification, could usefully inform how the GEF develops knowledge management and learning.[117]

3.4 THE GEF'S WIDER ALLIANCES AND ENGAGEMENT

The GEF's remarkable potential leverage and its responsibilities as a funding mechanism for many multilateral environmental agreements (MEAs) creates an opportunity for outsized impact in its sphere of influence and further opportunity to engage the most effective alliances towards systems transformation, which will help ensure that GEF investments in GEBs are enduring and catalytic. However, the GEF is involved in many relationships and could strategically prioritize those that are most critical to its mission to greater effect. The GEF also needs to demonstrate the benefits of more investment and co-investment prior to replenishment for GEF-9.

Influence can be applied mainly through *partnerships*, although the GEF also has a particular relationship with the MEAs. In STAP's view, there is an opportunity

to develop an explicit (perhaps internal) strategy on how to prioritize and motivate a focused set of key relationships to help deliver the GEF's mission (such as the Platform for Accelerating the Circular Economy; see figure 11), particularly in relation to *transforming economic systems* and improving *policy coherence* to secure more enduring environmental outcomes. Such a strategy would consider how to align activities in all levels of operation (sections 3.1–3.4) to promote policy coherence, including (a) introducing natural capital approaches (box 7) or inclusive wealth measures into national decision-making through projects, (b) raising awareness and building capacity at program and portfolio level, and (c) influencing the activities of key actors beyond the GEF Partnership.[118] The strategy would also consider how to promote the removal of barriers to scaling for potentially transformational activities undertaken through GEF investments, including extending existing efforts towards engaging private sector actors and finance in delivering GEBs. In doing so, it is important to use the GEF's influence to ensure that distributional outcomes are always considered, since *inequality* is a significant barrier to achieving both environmental sustainability[119] and the durability of GEF outcomes.

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Figure 11: Strategic external partnerships.

PACE – the Platform for Accelerating the Circular Economy – is a public-private collaborative platform to "catalyze global leadership from business, government, and civil society to accelerate the transition from a linear to a circular economy that will improve human and environmental well-being for current and future generations." The GEF was a foundation partner in 2017 along with UNEP, World Economic Forum, and Royal Philips.[120] PACE now has programs in food and agriculture, electronics, textiles, plastics, and capital equipment sectors, as well as on metrics and innovation, capturing knowledge from over 200 circular economy activities into replicable frameworks and approaches.[121] PACE provides an example of how the GEF can partner with others to facilitate the scaling of collective action globally, but these **partnerships need to be strategically selected in a coordinated way across the GEF**.

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BOX 7: NATURAL CAPITAL AND POLICY COHERENCE

Nature is now widely recognized as having an essential function in providing the resources needed for economies to thrive, guaranteeing their resilience to a range of external shocks, such as climate change, and contributing to human health and well-being. Natural capital can be defined as the world's stocks of natural assets and resources, which provide a wide range of services, often called ecosystem services, that make human life possible. Financial institutions, governments, and civil society are increasingly realizing that incorporating considerations about nature and natural capital into the planning and implementation of investment, from infrastructure to agriculture, can bring substantial economic and societal benefits. Natural capital approaches[122] are often most powerful when they bring together multiple sectors, allowing integration of impacts on biodiversity, ecosystem services, and beneficiaries, as well as identification of trade-offs and synergies in spatial assessments. The win–win outcomes among sectors that can be highlighted in natural capital approaches help to bring efficiencies to planning, policy, and investment strategies and to identify opportunities for greater policy coherence. Following a study commissioned by STAP, the Stanford Natural Capital Project is working with the Asian Development Bank, and the Inter-American Development Bank, on a medium-size project to develop natural capital pilot projects in 10 GEF recipient countreis. Thereafter, Stanford have outlined the possible establishment of a techncial assistance facility to provide access to well-established mechanisms and best practices for using natural capital approaches more broadly in GEF recipient countries.

BOX 8: TRACKING THE SOCIOECONOMIC IMPACTS OF GEF INVESTMENTS

Environmental investments are coming under increasing scrutiny by donors and community members in terms of their broader impacts on society. With rising demands on funds as well as greater expectations for "win–win" opportunities for ecological and socioeconomic benefits, the GEF could consider ways of measuring such benefits beyond the usual GEBs. Tracking derivative socioeconomic impacts of GEF investments is important in the context of a systems approach to planetary governance, as exemplified in the interlinkages outlined in the *2030 Agenda for Sustainable Development.* Mapping GEF investments and their links to the SDGs would help demonstrate such a systems approach and show how the GEF is contributing to the wider development agenda. A starting point enabling this is to develop appropriate metrics for measuring socioeconomic benefits from the GEF's investments, which may be able to use existing SDG metrics.

The "green growth" paradigm (see inserted figure), which is institutionally supported by the Global Green Growth Institute, could provide valuable insights in this regard, linking GEBs under natural capital (bottom right circle) to positive social, economic, and resource use outcomes (other circles). The Institute supports green investments but, thus, considers impacts beyond environmental benefits, particularly using the concept of "inclusive growth" in line with the SDG principle to "leave no one behind".[124] The Institute also measures the environmental and socioeconomic impacts of its projects, using indicators such as greenhouse gas emission reductions, green job creation, access to sustainable services, improvement in air quality, and enhanced adaptation to climate change.[125]

Efficient and sustainable resource use
- Efficient and sustainable energy
- Efficient and sustainable water use
- Sustainable land use
- Material use efficiency

Low carbon economy

Green economic opportunities
- Green investment
- Green trade
- Green employment
- Green innovation

Green Growth Index

Inclusive growth

Ecosystem health

- Access to basic services and resources
- Gender balance
- Social equity
- Social protection

Social inclusion

Resilient society

- Environmental quality
- GHG emission reductions
- Biodiversity and ecosystem protection
- Cultural and social value

Natural capital protection

Figure: a conceptual framework of the Green Growth Index with four interlinked green growth dimensions that support quality of life. Source: GGGI[126]

There is also an opportunity – born of the breadth of the GEF's portfolio – to promote more systematic documentation of good practices, learning, and knowledge management across and beyond the GEF Partnership. Within a strong *knowledge management and learning strategy*, the GEF could take leadership in engaging a wide range of actors in improved approaches that link well-structured conceptual models of environmental interventions with what works and what does not in different contexts. These approaches should not be conceived as some massive centralized system, but rather as a distributed set of efforts among many organizations, including the private sector, the research community, and national and regional governments, that agree to some consistent standards and typologies and engage in strong efforts to learn, exchange, and apply knowledge.[123]

In addition, the GEF could inspire better recording and understanding of (social as well as economic) returns on investments like the GEF's (e.g. box 8), capturing these co-benefits and enabling an increasingly persuasive picture to be built up for investing in the global environmental outcomes sought by the conventions.

SECTION 4: STAP'S ADVICE FOR GEF-8 AND BEYOND

The MOPAN (Multilateral Organization Performance Assessment Network) review of the GEF urged a greater focus on its catalytic and convening role, on the most damaging drivers of environmental degradation, and on monitoring, review, and evaluation to balance efforts in project preparation and approval.[127] While GEF-7 sought to address these issues, GEF-8 needs to accelerate and harmonize these efforts. **To prepare for GEF-9, the GEF needs to look both externally and internally**: externally, by catalysing actions with the potential to influence national and global finance systems to incentivize enduring environmental transformation; and internally, by codifying and aligning a number of its own processes prior to GEF-9.

STAP argues that **systems-thinking (and theory of change) needs to be applied at all levels of the GEF, including the Partnership as a whole**. While much of the GEF's investment is country oriented, countries individually and globally can achieve greater benefits and a higher return on investment through a **more deliberate alignment of their activities**. This analysis suggests where the GEF needs to take expeditious steps to improve strategic coordination across its levels of operation and influence, leading to seven recommendations.

The GEF needs to clarify, on the basis of a clear **risk appetite framework**, where **innovation** is most sought (including in scaling for transformation), with appropriate investment in **learning quickly** and in adaptively managing projects that do not achieve their ambition despite good design. This approach will help make the GEF's portfolio more coherently **transformative** by being clear about how each part of the portfolio contributes to system transformation (including all the Integrated Programs) and ensuring that each part has adequate ambition and credible scaling pathways, including attention to **behaviour and institutional change**. This leads to two actions:

Recommendation 1: Develop a clear risk framework for the GEF that underpins an implementation plan to ensure its implications are reflected in all areas of the GEF's activities.[128] The risk framework should clarify the risk appetite that the GEF has for different types of risk, distinguishing, for example, approaches to administrative and personnel risks from approaches to innovation and transformation at project, program, and whole-of-GEF levels. The implementation plan should define the practical, differentiated consequences for different areas of operations, including for metrics and monitoring systems.

Recommendation 2: Develop a more systematic approach to innovation,[129] building from the risk framework, to seek innovation particularly in the Integrated Programs, Small Grants Program, and through the new dedicated window for innovation. The GEF could also consider making greater use of MSPs for innovation, for example, by identifying specific problems for which innovative solutions are needed or by marshalling several MSPs to tackle a big problem from different perspectives. The new PIF includes a specific question about innovation that will be helpful in prompting project developers to consider whether proposed projects are innovative and in identifying those that are intended to be.

A consistent, GEF-wide approach to **durability** is needed, taking account of uncertain futures (applying **simple future narratives** of how drivers of change, including climate, may affect project design and paying attention to any adaptations needed in anticipation of these changes), **policy coherence** (creating mutually reinforcing approaches to policy coherence at project, program, portfolio, and Partnership levels), and the importance of deepening **stakeholder support** (through demonstrating co-benefits that underpin and result from enduring GEBs). To achieve this durability in a coherent way:

Recommendation 3: Establish a GEF-wide strategy and implementation plan to address policy coherence across all operational levels, including by catalysing external partnerships that promote better policy coherence.[130] This strategy needs to adopt a comprehensive framing of policy

coherence, including its impact on the durability of GEBs, identifying actions to ensure that the GEF's internal approach to these issues is itself coherent and self-reinforcing.

Recommendation 4: Identify which co-benefits of GEF investments need to be tracked, and why, and establish systems to report on them.[131] Stakeholders need to benefit observably from GEF investments (co-benefits) to ensure their continuing support. The support of funders and other institutional partners of the GEF will be bolstered by an understanding of the GEF's wider contribution to the economy, beyond GEBs. Promoting the wider benefits of supporting GEBs can also encourage more support for the GEF's mission.

The GEF needs a new and comprehensive approach to knowledge management and learning, accompanied by a shift in culture – a distributed but coordinated approach effective across the Partnership, which captures contextual knowledge better, leverages learning from successes and failures, consistently applies past learning about what works in which contexts in project design, and facilitates coordination and adaptive management within and between programs. These activities would be better owned and supported by stakeholders through strong South–South knowledge exchange. These issues imply:

Recommendation 5: Establish a new knowledge management and learning system[132] **which is everyone's business in the GEF, with culture change driven from the top down**. A knowledge management and learning strategy should encompass governance and leadership, enduring learning, empowerment and exchange, design and application, and tracking and adapting, as a distributed approach that learns from diverse experiences and systems across the GEF Partnership. Project developers need to know what works, why, how, and under what circumstances, as well as what doesn't work.

A wider range of underrepresented groups, including women and youth but also other disempowered

actors, should have key roles in achieving enduring and transformative GEB outcomes. Inequity is now recognized to have a major impact on sustainable development and need to be considered in GEF investments, for example by taking into account the distributional effects of an intervention. Hence:

Recommendation 6: Consider including the voices and roles of youth and other marginalized groups, such as Indigenous Peoples, in the design and implementation of investments, by broadening the coverage of the GEF's policy on gender to include these groups. The engagement of gender perspectives is still imperfect in projects but is improving; this understanding needs to be extended to empowering a rapidly expanding youth cohort and to addressing equity and justice for marginalized voices across projects more generally, for example bringing youth representatives into project and portfolio governance.

Finally, a more strategic approach to partnerships would be beneficial. The GEF could examine its diverse range of partnerships and prioritize how it engages with them. **Playing a supporting, enabling, or convening role in partnerships**[133] should be a deliberate choice, not an accidental accretion of low-value commitments. STAP can help foster partnerships with the scientific community, for example on the **intersection of natural and social sciences** with transformational change, and on future challenges to environmental security such as migration that affect the durability of project outcomes. To these ends:

Recommendation 7: Prioritize the GEF's engagement in external partnerships which can have a catalytic effect in transforming global economic systems, improving policy coherence, reorienting financial flows, facilitating learning across countries and sectors, and working more with the private sector beyond co-financing. Coordination of partnerships among programs and corporately should aim to dramatically speed the rate at which enduring GEBs accrue from all sources of investment.

STAP'S PRIORITIES

STAP will support the GEF's aspirations for GEF-8 and help it prepare for GEF-9, continuing to work on the above recommendations.

STAP will contribute to a consistent approach to project design by screening projects in alignment with the needs outlined above.

Annex 2 sets out STAP's revised screening guidelines following the introduction on the new Project Identification Form. And annex 3 explains what STAP will look for in particular when screening Program Framework Documents for the Integrated Programs, together with some insights gained from STAP's participation in the GEF Secretariat groups that reviewed agency applications to lead Integrated Programs.

To encourage leading practice in project design, STAP will help develop a modest set of training materials and outreach activities for the GEF Partnership. And early in the new year, STAP will organize, with the GEF Secretariat, a workshop on metrics for transformational change, and a convening with the GEF agencies on their experience in setting up knowledge management (KM) platforms for the IAPs and Impact Programs, looking ahead to KM platforms for the Integrated Programs. And in the new year, STAP will also work with the GEF Secretariat and Council members in a working group to develop a risk appetite framework.

STAP will help with the GEF's work to accelerate systems transformation by reinforcing key strategic partnerships with leading science networks that can assist with integrated programming and focal area strategies, including leveraging the social and behavioural sciences to support systems transformation and overcome barriers and lock-in.

STAP will also continue horizon-scanning to anticipate emerging challenges in issues such as environmental security, food systems demand, ecosystems and human health, technological change, youth engagement, equity, and governance.

ANNEX 1: STAP PRODUCTS DURING GEF-7

TOPICAL STAP REPORTS

1. *GEF and the Blue Economy, 2022*. Presents a framework in support of integrated, transformative, and enduring GEF investments in the blue economy. Suggests eight overarching criteria for GEF investments in the blue economy and outlines specific priority actions related to governance and policies, financial leverage, innovation and learning, and multi-stakeholder dialogue.

2. *Framing Policy Coherence for the GEF, 2022*. Suggests how the GEF could develop a coordinated approach to achieve key objectives on policy coherence. Tools and actions used at different levels by international organizations are also recommended.

3. *Risk Appetite and the GEF, 2022*. Reviews key concepts associated with risk and innovation and recommends for the GEF to draft, and deliberate, a risk appetite statement and develop a corresponding risk appetite framework.

4. *Natural Capital Approaches, 2022*. Synthesizes a study commissioned by STAP, and conducted by the Stanford Natural Capital Project, which reviews the recent experience of various countries and the GEF in implementing natural capital approaches. The study proposes establishing a Technical Assistance Facility to build capacity on natural capital approaches among key stakeholders.

5. *Refining the Tracking of Co-benefits in Future GEF Investments, 2022*. Suggests classifying differently those co-benefits that are prerequisites, and thereby essential for enduring global environmental benefits, from those co-benefits that are incidental to project implementation. STAP encourages the GEF to treat and report differently these classes of co-benefits.

6. *The Circular Economy and Climate Mitigation, 2021*. Examines how the circular economy can support more ambitious climate action and deliver global environment benefits pertinent to the GEF. It presents 14 circular climate change interventions in sectors of interest to the GEF with case studies illustrating successful implementation.

7. *Why Behavioural Change Matters to the GEF and What To Do about It, 2020*. Summarizes five case studies that demonstrate how six levers from a framework developed by Rare can be used to target behaviour change. Based on these case studies and a review of the literature on behaviour change, STAP encourages the use of a checklist in GEF projects.

8. *Nature-based Solutions and the GEF, 2020*. Reviews literature on Nature-based Solutions (NbS) and presents an analysis of 30 GEF NbS projects. A similar analysis of projects by the Wildlife Conservation Society and the Gordon and Betty Moore Foundation is also presented. The report presents outcomes of a workshop held in May 2020.

9. *Delivering Multiple Benefits through the Sound Management of Chemicals and Waste, 2020*. Presents links between the goals of the Chemicals and Waste focal area and those of other GEF focal areas, as well as interactions with other environmental and socioeconomic issues. The paper discusses systems-thinking for developing GEF Chemicals and Waste projects to address links, deliver benefits, and achieve transformation.

10. *Technology Critical Elements, 2020*. Reviews the benefits and the cost of technology-critical elements and highlights solutions to managing their impacts. The report also presents recommendations for the GEF to manage the risks of technology-critical elements and harness the opportunities it presents.

11. *Earth Observation and the GEF, 2020*. Offers a primer on Earth observation data and technology and makes recommendations to the GEF on practical ways to incorporate spatially explicit information into programs and projects. An accompanying technical guide provides a detailed explanation of Earth observation principles, data sources and platforms, and case studies to illustrate how these data and tools can be used.

12. *Harnessing Blockchain Technology for the Delivery of Global Environmental Benefits, 2019*. Explains what blockchain is and how blockchain could be used to deliver environmental benefits for the GEF. The paper also describes challenges and barriers to using the technology and concludes with recommendations to the GEF.

13. *Local Commons for Global Benefits: Indigenous and Community-Based Management of Wild Species, Forests, and Drylands, 2019*. Summarizes the literature on effective and inclusive community-based governance of traditional commons. The paper defines principles and fundamental design characteristics to guide GEF interventions for robust governance of local "commons".

14. *Guidelines for Land Degradation Neutrality, 2019*. Outlines key concepts and principles and presents practical steps for working towards land degradation neutrality. The guidelines support the modules defined in the Scientific Conceptual Framework for Land Degradation Neutrality developed by the United Nations Convention to Combat Desertification.

15. *Novel Entities, 2018*. Identifies novel entities and technologies relevant to the GEF, including technology-critical elements, blockchain, next-generation nanotechnology, gene editing, cellular agriculture, and new-engineered bio-based materials. The report presents STAP advice on how the GEF can respond to the challenges and opportunities posed by the identified novel entities and technologies.

PROCESS-ORIENTED STAP REPORTS

1. *A Decision Tree for Adaptation Rationale, 2022*. Strengthens a shared understanding among the GEF Partnership of good practices for enhancing climate change adaptation impact. Takes project developers through a step-by-step decision tree to design enduring interventions to ensure projects have a robust adaptation rationale.

2. *Achieving Transformation through GEF Investments, 2022*. Provides guidance to the GEF on how to achieve transformative investments. The paper details STAP's recommendations, which include ensuring activities are based on a credible logic chain that leads to transformative ambition. The brief also touches on metrics for monitoring and learning about transformation.

3. *Knowledge Management and Learning, 2022*. Articulates STAP's vision of knowledge management and learning for the GEF. The brief suggests a theory of change to guide the development of a knowledge management and learning strategy. Five pathways are recommended to achieve this: governance and leadership; durable learning; empowerment and exchange; design and application; and tracking and adapting.

4. *Using Simple Narratives to Ensure Durability of GEF Investments, 2022*. Presents STAP thinking on the use of simple future narratives to design resilient and enduring projects. It highlights the importance of considering all drivers of change, such as population, conflict, climate change, and migration, when designing projects.

5. *Enabling Elements of Good Project Design: A Synthesis of STAP Guidance for GEF Project Investment, 2021*. Synthesizes the main elements of STAP's process-oriented advice, which is rooted in eight enabling elements. The report highlights the enabling elements and illustrates how adopting them will "de-risk" project and program design and increase the likelihood of delivering enduring outcomes that contribute to transformational change.

6. *How to Design Circular Economy Projects, 2021*. Builds on STAP's three circular economy reports on plastics, food systems, and climate change mitigation. The report looks at how the GEF can plan, design, and implement future circular economy projects.

7. *Understanding South–South Cooperation for Knowledge Exchange, 2021*. This paper looks at the experience of South–South cooperation for knowledge exchange in the GEF, and in other institutions, to elucidate what has been learned and what challenges exist. STAP provides its recommendations on South–South cooperation in the paper.

8. *Making GEF Investments Resilient, 2021*. Suggests how to apply resilience thinking and a simple scenario-based approach to known future risks to help GEF investments produce more resilient outcomes.

9. *Multi-stakeholder Dialogue for Transformational Change, 2020*. Offers advice on the principles and practices that contribute to effective design and implementation of multi-stakeholder dialogue to address GEF priorities. The primary emphasis is on the use of multi-stakeholder dialogue processes to contribute to regional or global coalitions for transformational change.

10. *Theory of Change Primer, 2020*. Synthesizes guidance on carrying out a theory of change process in a GEF context. The brief includes an overview of the origin of theory of change, defines what a theory of change is, explains why developing and carrying out a theory of change is necessary, and provides a guide on how to develop a theory of change.

11. *Achieving Enduring Outcomes from GEF Investment, 2019*. Describes principles for securing durability in project outcomes and impacts built round four themes: engaging the right stakeholders; building the incentives for these key actors to act; incorporating adequate diversity and flexibility in project design and implementation; and underpinning it all with a systems-thinking approach.

12. *STAP Guidance on Climate Risk Screening, 2019*. Proposes a common standard for climate risk screening of GEF projects based on the scientific literature and builds on earlier work undertaken over the last several years in response to the Council's request that STAP examine the effects of climate change on GEF projects.

13. *Innovation and the GEF, 2019*. Reviews the GEF's experience with innovation in technology, finance, business models, policy, and institutional change and makes recommendations on each of these, as well as on defining a risk appetite, responsibility for innovation, cultivating innovation in design, encouraging adaptive implementation, and the exchange of lessons learned.

ANNEX 2: KEY ISSUES FOR STAP IN GEF PROJECT DESIGN

STAP has updated its screening guidelines in the light of the new Project Identification Form (PIF) promulgated in August 2022 and in congruence with the issues raised in this report. The following questions will now form the basis for STAP's review, particularly of the *project rationale* and *project description* boxes of the GEF-8 PIF:

1. How well does the proposal explain the problem and issues to be addressed in the context of the **system** within which the problem sits and its drivers (e.g. population growth, economic development, climate change, sociocultural and political factors, and technological changes), including how the various components of the system interact?

2. Does the project indicate how **uncertain futures** could unfold (e.g. using simple **narratives**), based on an understanding of the trends and interactions between the key elements of the system and its drivers?

3. Does the project describe the **baseline** problem and how it may evolve in the future in the absence of the project; and then identify the outcomes that the project seeks to achieve, how these outcomes will change the baseline, and what the key **barriers** and **enablers** are to achieving those outcomes?

4. Are the project's **objectives** well formulated and justified in relation to this system context? Is there a convincing explanation as to **why this particular project** has been selected in preference to other options, in the light of how the future may unfold?

5. How well does the **theory of change** provide an "explicit account of how and why the proposed interventions would achieve their intended outcomes and goal, based on outlining a set of key causal pathways arising from the activities and outputs of the interventions and the assumptions underlying these causal connections".
   - Does the project logic show how the project would ensure that expected outcomes are **enduring** and resilient to possible future changes identified in question 2 above, and to the effects of any conflicting policies (see question 9 below).
   - Is the theory of change grounded on a solid scientific foundation, and is it aligned with current scientific knowledge?
   - Does it explicitly consider how any necessary **institutional and behavioural** changes are to be achieved?
   - Does the theory of change diagram convincingly show the overall project logic, including causal pathways and outcomes?

6. Are the project **components** (interventions and activities) identified in the theory of change each described in sufficient detail to discern the main thrust and basis (including scientific) of the proposed solutions, how they address the problem, their justification as a robust solution, and the critical assumptions and risks to achieving them?

7. How likely is the project to generate global environmental benefits which would not have accrued without the GEF project (**additionality**)?

8. Does the project convincingly identify the relevant **stakeholders**, and their anticipated roles and responsibilities? is there an adequate explanation of how stakeholders will contribute to the development and implementation of the project, and how they will benefit from the project to ensure enduring global environmental benefits, e.g. through co-benefits?

9. Does the description adequately explain:
   - how the project will build on prior investments and complement current investments, both GEF and non-GEF;
   - how the project incorporates **lessons learned** from previous projects in the country and region, and more widely from projects addressing similar issues elsewhere; and
   - how country policies that are contradictory to the intended outcomes of the project (identified in section C) will be addressed (**policy coherence**)?

10. How adequate is the project's approach to generating, managing and exchanging **knowledge**, and how will lessons learned be captured for adaptive management and for the benefit of future projects?

11. **Innovation and transformation:**
    - If the project is intended to be **innovative**: to what degree is it innovative, how will this ambition be achieved, how will barriers and enablers be addressed, and how might scaling be achieved?

    - If the project is intended to be **transformative**: how well do the project's objectives contribute to transformative change, and are they sufficient to contribute to enduring, transformational change at a sufficient scale to deliver a step improvement in one or more GEBs? Is the proposed logic to achieve the goal credible, addressing necessary changes in institutions, social or cultural norms? Are barriers and enablers to scaling be addressed? And how will enduring scaling be achieved?

12. Have **risks** to the project design and implementation been identified appropriately in the risk table in section B, and have suitable mitigation measures been incorporated? (NB: risks to the durability of project outcomes from future changes in drivers should have been reflected in the theory of change and in project design, not in this table.)

ANNEX 3: WHAT WILL STAP PARTICULARLY LOOK FOR IN SCREENING INTEGRATED PROGRAM FRAMEWORK DOCUMENTS?

STAP will screen Integrated Program Framework Documents (PFDs) using its screening guidelines (see annex 2), paying particular attention to six issues: systems-thinking, theory of change, knowledge management and learning, policy coherence, innovation, and transformational change. STAP will also draw on insights gained from its participation in the GEF Secretariat groups that reviewed agency applications to lead Integrated Programs – see *observations* below.

The paper *GEF-8 Integrated Programs Lead Agency Terms of Reference and Selection Process* set out a rationale for Integrated Programs being greater than the sum of the parts, delivering amplified global environmental benefits, and influencing systemic change. Integrated Programs are, inter alia, to facilitate the generation and use of project learning, South–South exchange, and institutional change and scale-up.

The functions and responsibilities of the lead agency include the following: a global or regional coordination child project that supports the knowledge platform for each Integrated Program; a theory of change to guide the design of all country child projects; a governance mechanism to ensure effective coordination within the program for achieving coherence and consistency to influence systems transformation; and a knowledge platform linking child projects to facilitate learning exchange between countries and provide access to innovations, tools, good practices, and technical assistance.

SYSTEMS-THINKING

Proposals should explain the problem and issues to be addressed, in the context of the **system** within which the problem sits and its drivers (e.g. population growth, economic development, climate change, sociocultural and political factors, and technological changes), including how the various components of the system interact.

Observations. At this early stage, detailed systems analysis was limited in most proposals, and more will be needed at the PFD stage. Most proposals recognized that the challenges to be addressed are embedded in complex systems and require an integrated approach to develop robust solutions. Some proposals demonstrated a clear understanding of the complex interconnected environmental, social, and economic systems. Others proposed particular approaches, for example applying spatial analysis and integrated land-use planning, or implementing integrated solutions through a whole-of-government or economy approach.

THEORY OF CHANGE

Proposals should offer a **theory of change** that provides an "explicit account of how and why the proposed interventions would achieve their intended outcomes and goal, based on outlining a set of key causal pathways arising from the activities and outputs of the interventions and the assumptions underlying these causal connections".

Observations. Lead agency applications were not required to include a theory of change. There was therefore a wide variation in quality and comprehensiveness. Some proposals did include a preliminary theory of change, for example by (a) identifying comprehensive priority areas for intervention, translated from a conceptual framework and supported by solid evidence and (b) providing a theory of change diagram supported by narrative text describing the logical reasoning underpinning the theory of change. Few addressed barriers.

KNOWLEDGE MANAGEMENT AND LEARNING

Proposals will need to say how they propose to generate **knowledge**, how this knowledge will be managed and exchanged (including with other GEF or externally supported activities), and how lessons

learned will be captured for the benefit of future projects.

Observations. All the proposals discussed a knowledge management and learning system as part of the global child project, and all intended to establish a knowledge management platform to support knowledge curation, learning, and dissemination; capacity-building; technical assistance; and, in some cases, advisory services. However, knowledge management was largely treated in familiar ways – "business as usual". Some proposals intended to build on existing platforms, both within and outside the GEF. Most proposals did not consider the links among Integrated Programs or the opportunities for collaboration and synergy.

One option might be to consider whether Integrated Program knowledge management platforms could be developed on some common principles to ensure that they are interoperable, easily accessible to all (both inside the Integrated Program, as well as externally), and organized in compatible ways, for example by type of intervention.

POLICY COHERENCE

Proposals will need to explain how they will ensure that policies in countries with child projects that are contradictory to the intended outcomes of the Integrated Program will be identified and addressed (**policy coherence**).

Observations. Most proposals recognized or at least mentioned some elements of policy coherence or harmonization that would be essential to achieving the Integrated Program's objectives, for example by making policy coherence an overarching outcome, or through a whole-of-government or economy approach.

INNOVATION

Proposals will need to explain how they are **innovative**, how ambitions will be achieved, how barriers and enablers will be addressed, and how scaling might be achieved.

Observations. Integrated programming is, of course, a policy innovation itself. However, only a few proposals

addressed how they would be innovative, perhaps because innovation was not part of the assessment of proposals. Some projects did explain how they would be innovative, for example by facilitating circularity or encouraging new business models, and some outlined different types of innovation, including project design, operational delivery, financing, and the testing of novel approaches.

TRANSFORMATIONAL CHANGE

Proposals should explain the following: how they will be sufficiently **transformative** for enduring change at a sufficient scale to deliver a step improvement in one or more global environmental benefits; the credibility of the proposed logic to achieve the goal, addressing necessary changes in institutions or in social or cultural norms; how barriers and enablers will be addressed; and how enduring scaling will be achieved.

Observations. Proposals showed a clear understanding of the GEF-8 objective to deliver transformational change and demonstrated commitment to achieving transformation. Most hinged transformation on the global platform child projects, but transformation also needs to be delivered by building on, and scaling up, changes achieved through national and regional child projects. Some proposals aligned their actions to achieve transformation through the four "transformation levers" in the GEF-8 Programming Directions: governance and policies, financial leverage, multi-stakeholder dialogue, and innovation and learning. Others would achieve transformation in part through policy coherence. However, some proposals said relatively little about how transformation would be achieved.

At the PFD stage, proposals would benefit from providing details of specific actions to deliver transformation, including an understanding of the barriers to transformation, leading to a theory of change with robust interventions that shows the pathways for overcoming the barriers, supported by a clear description of the underlying assumptions.

REFERENCES AND FOOTNOTES

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80. The four goals from the GEF Strategic Framework include: (i) post-COVID strategies by state and non-state actors scale-up "green" and "blue" recovery actions in priority landscapes and seascapes; (ii) Incentives and improved policy options promote innovations and behavior change for sustainability and resilience in target systems; (iii) Natural capital, nature-based solutions and ecosystem services underpin transformation of target systems; (iv) Circularity promoted in value/supply chains to increase efficiency and reduce or eliminate negative externalities. https://www.thegef.org/sites/default/files/documents/2022-01/GEF_R.08_11_GEF-8_Strategic_Positioning_Framework.pdf

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