



GEF/STAP/C.58/Inf.01
May 28, 2020

58th GEF Council Meeting
June 2 – 3, 2020
Virtual Meeting

**REPORT OF THE CHAIR OF THE SCIENTIFIC AND TECHNICAL ADVISORY
PANEL (STAP) TO THE 58TH MEETING OF THE GEF COUNCIL
JUNE 2020**



We always start the Chair's presentation with a "wonder of nature" and wanted to keep up that tradition despite our virtual Council meeting.

Bon appétit: Night hikes through the Ecuadorian jungle are one of the photographer's, Lucas Bustamante, favorite activities. With a keen interest in herpetology, he was overjoyed to spot this labiated rain frog, (*Pristimantis labiosus*), an abundant species in the region. It had just caught a baby tarantula and its comical expression said, 'caught in the act!'

The image was shortlisted for Wildlife Photographer of the Year and is currently on exhibition at the Natural History Museum in London.

Introduction

This report provides an update on STAP's work since the last Council meeting in December 2019. As this is the CEO's last Council meeting, the STAP Chair, STAP Panel Members, and staff over the last 8 years¹, would like to congratulate Naoko Ishii on her vision and leadership. The IAPs and the IPs were both daring and innovative and are leading to greater integration across focal areas, improved theories of change, better stakeholder engagement, learning across the GEF agencies and countries, and private sector commitments. The STAP review of some of the IAP child projects shows there are real results on both Nature-based Solutions (NbS) and all the principles noted in STAP's integration and durability papers, which is gratifying. We wish Naoko every success in her future endeavors, and thank her for her insightful "2020 vision"!

STAP's ongoing and future work is listed below. Climate risk screening (item 1) and Nature-based Solutions (2) were requested by the GEF Secretariat, Technology Critical Elements (3) follows on from STAP's report on Novel Entities², and Multi-stakeholder Dialogue (4) complements STAP's work on Integration³, Durability⁴, and Theory of Change⁵.

Over the last 6 months STAP has worked on:

1. Climate risk screening
2. Nature-based Solutions
3. Technology Critical Elements
4. Multi-stakeholder Dialogue
5. Current and future work programme
 - (i) Behavior change
 - (ii) Mainstreaming biodiversity
 - (iii) Delivering multiple benefits through the sound management of chemicals and waste
 - (iv) Climate change mitigation and the circular economy
 - (v) Looking ahead to GEF-8
6. Other STAP activities
7. Personnel news
8. Observations on the June work program

¹ STAP: Rosina Bierbaum, Saleem Ali, Edward Carr, Rosie Cooney, Jamidu Katima, Graciela Metternicht, Blake Ratner, Tom Lovejoy, Mark Stafford Smith, Ricardo Barra, Hank Bouwman, Brian Child, Annette Cowie, Jakob Granit, Anand Patwardhan, Ralph Sims, Michael Stocking, Ferenc Toth. STAP Secretariat: Chris Whaley, Robin Burgess, Guadalupe Duron, Virginia Gorsevski, Sunday Leonard, Valentina Joya Barrero, Pedro Rampini, Tom Hammond, Sarah Lebel, Veronique Morin, Lev Neretin, Monika Thiele, Christine Wellington-Moore, Zinta Zommers, Manali Baruah, Bowen Cao, Mindi DePaola, Tsubasa Enomoto, Francisna (Kris) Fernando, Stephanie McGill, Luke Wonneck.

² [STAP report on Novel Entities](#)

³ [STAP report on Integration: to solve complex environmental problems](#)

⁴ [STAP report on Achieving enduring outcomes from GEF investment](#)

⁵ [STAP report on Theory of Change](#)

1. Climate risk screening

(i) Further guidance

In June 2019, STAP issued guidance on screening for climate risk⁶ that offered a common standard for the screening of GEF projects for potential climate risks; this recommended the Intergovernmental Panel on Climate Change (IPCC) four-step process - hazard identification, assessment of vulnerability and exposure, the ranking of risks or risk classification (low to high), and a risk mitigation plan using the best available data.

At the GEF agency retreat in April, the STAP Chair emphasised that climate change was a lens through which all GEF projects and programs should be viewed and that considering climate risk is an integral part of designing a project, not something to be screened for after the project has been designed, when options will be fewer. Dr. Bierbaum outlined the four climate questions (below) in STAP's project screening guidelines⁷ (June 2018), and, in her presentation⁸, elaborated on the sort of answers and information the GEF Secretariat and agencies should expect in a project which addressed climate risk in a satisfactory manner (see Table 1).

Four questions on climate risk from STAP's screening guidelines:

Has the sensitivity to climate change, and its impacts, been assessed?

- *Does the PIF identify the current and projected climate vulnerabilities at the project location, based on credible scientific information?*

How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately?

- *Have the underlying drivers of the climate vulnerabilities at the project location been analyzed, and for the planned project intervention/components?*

Have resilience practices and measures to address projected climate change and its impacts been considered? How will these be dealt with?

- *Does the PIF consider options for managing climate vulnerability to ensure the durability of the expected project outcomes? This includes looking for a recognition that adaptive management may be needed and steps to achieve it.*

What technical and institutional capacity, and information, will be needed to address climate vulnerability and enhance project- and place-based resilience?

- *Is there a Monitoring, Evaluation, and Learning strategy - implementing and evaluating the selected climate vulnerability management options over the project lifetime and evaluating the projected impact uncertainties beyond that period?*

⁶ [STAP's guidance on climate risk screening](#)

⁷ [STAP screening guidelines](#)

⁸ [STAP Chair's presentation to GEF Agency Retreat, April 2020](#)

TABLE 1: Climate Risk Screening Guidelines.

STAP Questions	What to look out for in PIFs and other GEF project documents					
1) Future Climate change impacts?	Range of future expected temperature, precipitation, sea-level rise, flood/droughts heatwaves, etc.?	Changes to natural resources of interest from climate change?	Changes to communities, lifestyles, economics from climate change?	Is climate contributing to problem being addressed?	What might exacerbate future climate risks?	Other considerations? Future Recommendations?
2) Risk to Project outcomes?	How will climate change affect projects' component goals by sector?	How might GEF interventions be amplified or compromised by climate change?	Will planned interventions reduce vulnerability to climate change?	Potential for maladaptation and how to prevent?		Other considerations? Future Recommendations?
3) Measures to address climate impacts?	Proposed climate risk management options?	Details of proposed resilience practices, measures, technologies	How to manage climate risk adaptively?	Feasibility, economic cost, tradeoffs, co-benefits?		Other considerations? Future Recommendations?
4) Future needs to enhance resilience & (Monitoring, Evaluation and Learning)	Technical and institutional capacities needed?	Financial implications of vulnerability management options	Mechanisms to evaluate success. (Monitoring, Evaluation and Learning)			Other considerations? Future Recommendations?

Source: GEF agency retreat: guidance on climate risk screening of GEF projects⁹

(ii) Assessment of how the GEF agencies are assessing climate risk

At the December Council 2019, Dr. Bierbaum reported¹⁰ on STAP's work in assessing the tools and methods which GEF agencies used in considering climate risk, in particular, to answer these three questions:

- What method or tool does your agency use to assess climate risk for GEF projects?
- Does this meet the requirements of the four-step process set out in STAP's guidance on climate risk assessment (see above)?
- Is this sufficient to answer the questions on climate risk in STAP's guidelines for screening GEF projects?

In December 2019, 10 agencies appeared to have a process which met the requirements of the IPCC's four-step process; 6 agencies had specific tools and methods and reported that their process was sufficient to answer the climate risk questions in STAP's screening guidelines. The other 4 had screening processes which highlighted climate risk, and STAP was working with them to see what more needed to be done to answer all three questions satisfactorily. (The other 8 either did not respond or provided insufficient information to form a view.)

There has been progress. The current position (May 2020) is that 13 agencies, based on their responses to the three questions above, have confirmed that their tools and methodologies comply with STAP's recommendations. STAP is continuing to work with the other 5 agencies: 4 of which are in the process of

⁹ [GEF Agency Retreat: guidance on climate risk screening of GEF projects](#)

¹⁰ [STAP Chair's Report to GEF Council, December 2019](#)

upgrading their tools and methods to meet the expected standards; and the 5th has been asked to provide further information.

2. Nature-based Solutions

The GEF has a strong record of tackling the world's most pressing environmental challenges. Nature-based Solutions (NbS) are defined by IUCN as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits." The CEO, Naoko Ishii, is a Commissioner of the Global Commission on Adaptation (GCA), and NbS is one of the seven action tracks for this year. The STAP Chair is a scientific advisor to the GCA. The CEO asked STAP to help with an analysis of lessons learned from the GEF portfolio to develop guidance for future GEF projects as an input to the GCA Summit planned for October 2020.

NbS have gained increasing visibility and support in recent years (particularly at the September 2019 Climate Summit) as a cost-effective measure to support climate change mitigation and adaptation while simultaneously addressing land degradation and biodiversity loss. By some estimates, NbS (or natural climate systems) can provide over 1/3rd of the cost-effective climate mitigation needed between now and 2030 to help stabilize warming at about 2°C, achieving nature's mitigation potential of 10-12 gigatons of CO₂ per year¹¹.

2020 was meant to be the 'Year of Biodiversity'¹². The clarion call is loud and clear - "nature is in crisis, as we are losing species at a rate 1,000 times greater than at any other time in recorded human history and 1 million species face extinction¹³." NbS were meant to be discussed at the Conference of the Parties to the Convention on Biological Diversity, the IUCN's World Conservation Congress, the UN Climate Change Conference, and many other key events. It is clear we need to pay increasing attention to how intact ecosystems and human well-being are inextricably linked – as highlighted by the COVID-19 pandemic.

The simple idea of NbS as "working with and enhancing nature to help address societal challenges"¹⁴ is intuitive; however, the scientific literature is complex. To better understand these nuances, STAP reviewed a selective set of relatively synthetic papers about NbS to summarize key issues of relevance to the GEF, including challenges and draft recommendations. For example, the issue of balancing outcomes for different beneficiaries and different scales in space and time is a genuine challenge for the GEF. Potential trade-offs such as global vs. local benefits need to be identified, as well as finding an appropriate balance between short and long-term gains.

To examine how NbS principles are implemented in GEF practice, STAP in partnership with 8 graduate students from the University of Maryland and the University of Michigan reviewed 50 completed and ongoing GEF projects identified by the GEF Sec as containing strong NbS components. The goal was to determine if any lessons could be learned to inform future efforts by the GEF in its support for NbS. Students examined CEO endorsements, mid-term and terminal evaluations (if available) against a detailed spreadsheet that sought to specify the types of NbS, and to evaluate the extent to which projects adequately addressed issues identified in the literature review (e.g. trade-offs, and the balance between nature and societal benefits). This exercise also looked at important underlying design issues that STAP had previously identified as important for the long-term success of projects (e.g. a strong

¹¹ Griscom, B.W. *et al.* (2017). Natural climate solutions. *PNAS*: 114 (44) 11645-11650; DOI: 10.1073/pnas.1710465114

¹² <https://www.unenvironment.org/news-and-stories/news/2020-super-year-nature-and-biodiversity>

¹³ IPBES (2019): [Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#). E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany.

¹⁴ Seddon, N. *et al.* (2020). [Understanding the value and limits of nature-based solutions to climate change and other global challenges](#). *Philosophical Transactions of the Royal Society B: Biological Sciences* 375 (1794).

theory of change, and robust multi-stakeholder processes). The students used NVIVO software to code information for 30 selected projects to identify connections across NbS activities and design features. The 30 projects covered 8 types¹⁵ of NbS across all the GEF focal areas, except chemicals and waste, multi-focal area projects, and child projects under the Integrated Approach Pilot (IAP) programs.

Table 2 shows that within these 8 NbS types, there were a number of enabling elements that STAP had identified as important to integration and to the durability of outcomes. On the left-hand side: screening for climate risks, a theory of change, multi-stakeholder dialogue (and within that, 3 components – capacity building, analysis of key stakeholders, and training for stakeholders); behavioral change (at the top-down or institutional level, as well as at the individual level); and durability of outcomes, and (or) scalability to achieve greater outcomes.

There are some interesting preliminary indications. On the right-hand side of the table, the most recent projects (initiated after 2015) appear to have paid more attention to climate risk screening, theory of change, training - as part of stakeholder engagement, and activities which seek both individual and institutional change. Durability and (or) scalability are often mentioned, but without much information about how these are to be achieved. This initial review suggests welcome news, that some things may be improving, but for other things, such as durability and scalability, greater clarity is needed about how this is to happen.

Table 2: Selected project design elements, by vintage

Project Design Element Statistics by Start Year							
17 projects 2002-2015 13 projects 2016-2018		Number of Projects			Percentage of Projects		
		2002-2015	2016-2018	Total	2002-2015	2016-2022	
Project Design Elements	Climate Risks		7	9	16	41%	69%
	ToC		3	5	8	18%	38%
	Multi-Stakeholder Dialogue	Capacity Building	9	7	16	53%	54%
		Analysis	8	7	15	47%	54%
		Training	5	9	14	29%	69%
	Behavior Change	Individual Level	9	10	19	53%	77%
		Institutional Level	12	13	25	71%	100%
Sustainability / Scalability		14	12	26	82%	92%	

The IAPs and The Restoration Initiative (TRI) are recent GEF initiatives to increase integration, which are well into implementation. STAP analyzed how well some of those NbS projects¹⁶ incorporate several of STAP's key recommendations: climate risk screening, multi-stakeholder dialogue, theory of change, sustainability and (or) scalability, and behavioral change. The good news is that most of the projects have most of these 6 elements.

¹⁵ The 8 NbS types are: agroforestry, area-based conservation, biodiversity, ecosystem-based management, integrated coastal zone management, integrated water resource management, restoration and rehabilitation, and sustainable land management.

¹⁶ Asuncion (Sustainable Cities IAP), Brazil, Paraguay (Good Growth Partnership IAP), Kenya, Ethiopia, Burundi (Food Security in sub-Saharan Africa IAP), and Guinea-Bissau, Tanzania, Cameroon (The Restoration Initiative).

Throughout the analysis it was clear that there were four persistent NbS challenges, which were also highlighted in the peer-reviewed literature:

Identifying and capturing **co-benefits**, particularly where these can be made bankable for market-based sources of finance. Important considerations include thinking about maximizing for whom or what, and at what cost to whom or what, and over what time frames.

Tradeoffs were often not well characterized, nor were explanations consistently provided on how these had been resolved or managed.

Better recognition and balance between **short and long-term (e.g. intergenerational) benefits** are needed. Benefits need to endure well beyond the time frame of a project and be resilient to the effects of climate change.

Monitoring and evaluation are more prominent in recent NbS projects, with much reporting on the numbers of people or species or hectares, but relatively little on why something worked or didn't - to advise on future best practices.

STAP's preliminary findings were presented at a virtual workshop on May 19 – 20, along with similar NbS analyses undertaken by The Gordon and Betty Moore Foundation (Moore) and the Wildlife Conservation Society (WCS) for projects in their respective portfolios. Participants included a rich complement of the GEF agencies, philanthropy, academia, NGOs, GEF Sec, and STAP - about 70 attendees, in all.

During the second day of the workshop, participants were divided into three groups to discuss the following topics:

- (i) How can NbS projects balance the interests of nature and people?
- (ii) What are the barriers to implementing and scaling NbS?
- (iii) How to make NbS operational in design, execution, and management?

Early conclusions from the workshop reaffirm that more attention needs to be paid to **the costs and benefits of interventions**, assessed comprehensively **across outcomes for both social systems and nature** and for this to be consolidated into an **evidence base**, linked to **monitoring and evaluation** to give investors (whether public or private) more confidence in suitable (i.e. not always economic) 'bankable' returns on investment.

There was also a clear call to include the health community and design engineers in future NbS projects, and to broaden the involvement of social scientists on behavioral change, and on cost-benefit analysis early in project preparation.

Next steps:

- STAP will develop NbS guidance to inform GEF-8
- STAP, WCS, and Moore will prepare a paper for the Global Commission on Adaptation
- STAP, WCS, and Moore will prepare a journal article building on the analysis, the workshop, and the peer-reviewed literature.

3. Technology Critical Elements

STAP's paper on Novel Entities¹⁷ identified Technology Critical Elements (TCEs), e.g. rare-earth elements, as important to the GEF, because increasing demand for these elements is expected to shift mining to GEF-recipient countries, and TCEs are critical to renewable energy, and emerging green technologies.

¹⁷ [STAP paper on Novel Entities](#)

Increased use of TCEs will mean a greater release into the environment during extraction, processing, and production, as well as when products are disposed of. The environmental impacts include land degradation, water contamination, chemicals and waste pollution, deforestation, and loss of biodiversity. For example, the mining of one tonne of rare earth oxide may lead to the removal of about 300 square metres of vegetation and topsoil; generating 1000 tonnes of contaminated wastewater, and the release of 2000 tonnes of tailings into adjacent valleys and streams.

STAP held a virtual TCEs workshop on 29-30 April 2020, in collaboration with the World Bank's Climate Smart Mining Initiative; this brought together more than 60 leading experts from academia, international organisations, civil society, as well as think tanks, national governments, and the private sector.

The workshop considered: climate mitigation and TCEs, including a new World Bank report on The Mineral Intensity of the Clean Energy Transition, by the Climate Smart Mining Initiative; TCEs and chemicals, water quality and waste; phytomining¹⁸ (plants used for land restoration and metal removal); biodiversity, forests, and protected areas in TCE extraction areas; urban mining, recycling, and the circular economy; and oceanic minerals and TCE extraction.

STAP is preparing an analysis of the possible effects of TCEs on GEF projects, the benefits that TCEs can offer, and advice on how to maximize the benefits while minimising the adverse effects.

This advisory paper will: present information on the climate mitigation benefits of TCEs, and highlight the mineral intensity associated with achieving a transition to clean energy; outline the environmental impacts associated with TCE supply chains; and offer advice on the best available technologies and policies that could be adopted to mitigate the impacts.

The paper will also show how the demand for TCEs can be met, for example, through recycling, and the circular economy, and how to manage contaminated land. And it will include some key principles for climate-smart and forest-smart mining.

The STAP paper will be issued in the autumn.

4. Multi-stakeholder dialogue

In November 2019, STAP and The Gordon and Betty Moore Foundation held a workshop on multi-stakeholder dialogues for transformational change at the Foundation's headquarters in Palo Alto, California. (The STAP Chair reported on this workshop in her presentation¹⁹ and report²⁰ to the December GEF Council.)

The workshop considered three topics:

- What is the evidence regarding the role of multi-stakeholder dialogue (MSD) in influencing transformation in social-ecological systems?
- What lessons can be derived from past experiences regarding strategies to build and sustain such multi-stakeholder dialogue processes?
- What implications does this have for GEF programming?

¹⁸ Phytomining is the exploitation of sub-economic mining sites or contaminated lands for metals by growing high biomass hyperaccumulating plants species to extract high metal concentrations Sheoran, et al., 2009. Phytomining: a review. *Mineral Engineering*, 22.

¹⁹ <https://doi.org/10.1016/j.mineng.2009.04.001>
¹⁹ [STAP Chair's Presentation to GEF Council, December 2019](#)

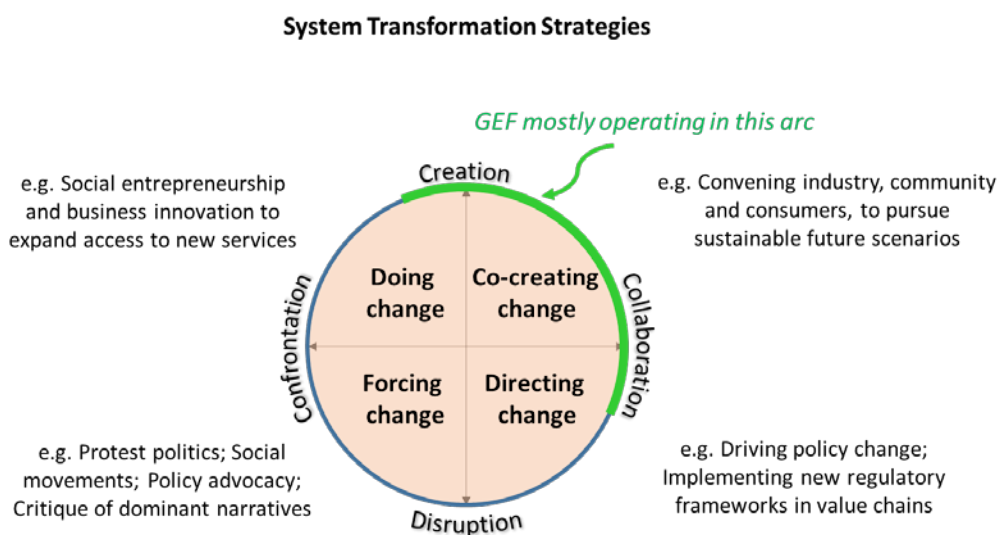
²⁰ [STAP Chair's Report to GEF Council, December 2019](#)

MSD has been a recurrent theme in STAP’s recent work, including in our work on integration²¹ (June 2018), innovation²² (February 2019), and durability²³ (June 2019) which identified multi-stakeholder dialogue as a key element in promoting integration, innovation, learning, scaling and, ultimately, enduring benefits, and transformational change.

Following the workshop, which was informed by a literature review²⁴ prepared by the Meridian Institute, STAP prepared a new guidance note, “Multi-stakeholder dialogue for transformational change”²⁵, that offers advice on the principles and practices that contribute to effective design and implementation of MSD to address GEF priorities. The primary emphasis is on MSD processes to contribute to regional or global coalitions for transformational change that integrate private sector actors, including multi-national corporations, industry associations, and private financial institutions.

The note outlines a number of strategies for transforming systems, which can be classified on axes of “disruption” to “creation”, and axes of “confrontation” to “collaboration” (Figure 1). This framework distinguishes strategies that emphasise getting on and *doing* change; activism and advocacy towards *forcing* change; top-down *directing* change, as governments can try to do; and collaborative processes to *co-create* change. MSD can contribute in different ways to all quadrants, but GEF investments are mainly active in the creative-collaborative arc, which is also the primary focus of the guidance note.

Figure 1: Strategies for systems transformation, with examples



Based on: [S. Waddell, “Four strategies for large systems change”, *Stanford Social Innovation Review* \(Spring 2018\), pp. 40–45.](#)

The guidance sets out the following core principles to inform good practice:

- a) **Critically assess the context for system transformation.** MSDs are not a panacea, care must be taken to first confirm that the conditions are suitable for sustained dialogue that could lead to transformation.

²¹ [STAP’s report on Integration: to solve complex environmental problems](#)

²² [STAP’ report on Innovation and the GEF](#)

²³ [STAP’s report on Achieving enduring outcomes from GEF investment](#)

²⁴ [Meridian Institute’s Literature Review on Regional and Global Multi-stakeholder Dialogue Contributing to Transformational Change](#)

²⁵ [STAP’s report on Multi-stakeholder dialogue, May 2020](#)

- b) **Make use of existing processes or coalitions, where possible.** Organisers may prefer to create a new process with a distinct identity, but often the better option is to strengthen, link, or address gaps in existing multi-stakeholder processes.
- c) **Address power dynamics intentionally.** Organisers and conveners of MSD processes need to assess the relationships among stakeholders, and their differing access to resources of power and influence, to promote greater inclusiveness and equity in the dialogue process.
- d) **Enable flexible program implementation.** MSD processes can support all stages of the investment cycle, ideally setting the stage for enduring impacts through long-term collaboration well beyond the life of the investment.
- e) **Embed monitoring, evaluation, and learning.** A good theory of change includes a foundation for monitoring and evaluating the contributions an MSD has made in practice, the challenges faced, and the degree to which it is delivering.
- f) **Plan beyond the initial investment.** Very often, MSDs need to continue after the supporting project or program has been implemented. This means planning for an exit strategy that includes investment in the capacities of players to carry the process forward.

The guidance note concludes that:

A robust analysis is essential to confirm whether an MSD is an appropriate approach to the challenge at hand and to guide consequent MSD design choices. Clarity of purpose is the fundamental design consideration, guiding the choices of whom to engage and how. A well-facilitated process will be ineffective without the right people engaged at the right times, and the right people gathered with an ill-defined purpose will not yield results. This note provides a framework to assess these design choices.

A key determinant of effectiveness in MSD processes is how they foster and incorporate social learning. A purposeful and transparent approach to monitoring and evaluating is required, both for the quality of the MSD itself, and the outcomes to which it contributes. Because large-scale, transformational changes involve a wide range of contributing factors, the aim is to identify instances where MSD has made a significant contribution rather than attribute it as the sole or primary cause.

Effective MSD can be a fundamental enabler of coalitions and collaborative actions that contribute to transformational change at multiple scales. It should thus be considered squarely among the core approaches the GEF employs to pursue scaling of impact.

5. Current and future work programme

(i) Behavior change

The Council has often encouraged STAP to ensure that its advice takes account of what social science has to offer in assisting the GEF to achieve its goal of influencing transformational change²⁶. The drivers of environmental degradation are social, as well as ecological, political, and economic, and can occur at the local, national, regional, and global levels. Scholars are turning their attention to building behavioral insights into policies, programs, and projects to solve environmental challenges²⁷.

²⁶ The GEF-7 programming directions commit the GEF partnership to enhance integration across sectors, catalyse innovation to alter systems that degrade the global environment, and leverage multi-stakeholder coalitions to influence transformational change across scales. GEF 7 Programming Directions, GEF/R.7/19. April 2018.

²⁷ Twenty Questions About Design Behavior for Sustainability, Report of the International Expert Panel on Behavioral Science for Design, New York, 2019.

STAP has commissioned a literature review on behavioral science, to gain a better understanding of how stakeholders' motivations, values, and needs can enhance the design of more durable interventions, and is also reviewing what practical guidance there is on behavioral insights.

The literature review will consider the academic and grey literature on: behavioral science (behavioral psychology and economics), which deals with the structure of human cognition; and social science (such as cultural anthropology, sociology, and human geography), to inform understanding of the social structures within which that cognition takes place.

The literature review will identify a classification system for behavioral interventions in biodiversity conservation, both terrestrial and marine, climate change mitigation and adaptation, land degradation, transboundary water management, and the sound management of chemicals and waste. For each focal area of the GEF, the review will cover: a review of the behavioral evidence; a summary of the effectiveness and durability of intervention types; and, a summary and synthesis of trends in the evidence across the environmental topic areas with recommendations for future directions.

Practical experience drawn from case studies, with details of approaches and tools which have worked, and not worked, will be synthesised. This work will include recent case studies of behavioral change in the environmental sector, including GEF projects.

A workshop will be held later this year.

(ii) Mainstreaming biodiversity

The GEF defines biodiversity mainstreaming as, “the process of embedding biodiversity considerations into policies, strategies, and practices of key public and private actors that impact or rely on biodiversity, so that it is conserved and sustainably used both locally and global”²⁸. STAP provided advice on biodiversity mainstreaming in 2005 and 2014²⁹, and the GEF Secretariat and Independent Evaluation Office (IEO) have also analyzed GEF projects to extract best practices.

STAP is revisiting its earlier advice, at the request of the GEF Sec, to reflect the considerable amount of new science and evidence in the last 5 years. A literature review has been commissioned, and GEF and non-GEF biodiversity mainstreaming projects will be reviewed.

The work will include:

- clarifying the concept of biodiversity mainstreaming, and its relationship to other related concepts, such as nature-based solutions, natural capital, ecosystem services, and ecosystem restoration
- typologies for understanding biodiversity mainstreaming and the types of pathways that are used in different sectors, and at different scales
- theories of change for biodiversity mainstreaming in a variety of contexts and scale, with different objectives, and interventions
- socio-economic co-benefits, e.g. mainstreaming may increase resilience of agricultural systems to climate and other shocks
- trade-offs, e.g. poverty alleviation or food production and security may involve divergent interests of different groups including local vs more distant groups, and long and short-term interests.

A workshop will be held later this year to consider the recent literature, draw together lessons learned and best practices from the practitioner community, and provide guidance for GEF-8.

²⁸ [“Biodiversity Mainstreaming in Practice: A Review of GEF Experience.”](#) (2016). The Global Environment Facility. Washington, DC.

²⁹ [STAP’s report on Mainstreaming Biodiversity in Practice](#)

(iii) Delivering multiple benefits through the sound management of chemicals and waste

The challenges and opportunities in the chemicals and waste portfolio are closely linked to broader environmental and development objectives, but are often treated as standalone topics with limited integration with other focal areas, e.g. biodiversity, water, and land.

At the request of the GEF Sec, STAP is reviewing the links between the chemicals and waste and other focal areas: to identify synergies and trade-offs; to assess co-benefits generated in previous GEF chemicals and waste projects; and to advise on how chemicals and waste projects could be developed to deliver multiple global environmental and socio-economic benefits.

The work is using systems thinking, for example, life cycle analysis, circular economy, green chemistry, and cost-benefit analysis, to gain a better understanding of the underlying drivers of chemical and waste pollution, and how this understanding can be used to benefit project development and design. The work will also discuss how theories of change in chemicals and waste projects can be extended to include other environmental benefits.

In April, STAP held a virtual workshop, in collaboration with the International Panel for Chemical Pollution, which brought together leading experts and practitioners on the links between the chemicals and waste, and other environmental issues; this will assist with a background report, and in developing advice to the GEF which STAP will issue in the autumn.

(iv) Climate change mitigation, and other environmental benefits, through the circular economy

Circular economy principles are part of the GEF-7 programming directions³⁰ and are mainly used in the international waters, and chemicals and waste focal areas. There are significant opportunities for the circular economy to play a significant role in climate change.

At the request of the GEF Sec, STAP is, therefore, working on a science-based synthesis of knowledge on how the adoption of the circular economy could contribute to the delivery of climate mitigation-related and other global environmental benefits. This work will identify material resources and economic sectors where the circular economy can deliver climate benefits, identify barriers and solutions, and provide recommendations.

A guidance note will be issued early in 2021.

(v) Looking ahead to GEF-8

STAP is thinking about how best to continue to bring the latest science to the GEF and to bring GEF's needs back to the science community for GEF-8, along the following lines:

- What are the recent and long-term trends which should inform STAP's advice, e.g. COVID-19?
- What are the current and prospective challenges faced by the Multilateral Environmental Agreements? More broadly, what are the implications of systemic risk as well as 'black swan' or 'surprise' events?
- What progress was made during the GEF-7 period in incorporating the latest science into program and project design and implementation, and what are the future opportunities? How can insights from social and behavioral science be better integrated into GEF projects and programs?
- How can GEF secure transformational change at scale? What does this mean for program design and project development?

³⁰ [GEF 2018. GEF-7 Programming Directions](#)

- In addition to work that STAP already has underway, or is planning (see section 5 above), what more could or should STAP do? For example, on climate adaptation, environmental security, theory of change, and embedding resilience, adaptation, and transformational change (RAPTA)³¹.

6. Other STAP activities

(i) Impact Programs

- Dr. Blake Ratner (Panel member for international waters) screened a further 10 Expressions of Interest for the Food, Land Use, and Restoration Impact Program (IP).
- STAP staff participated in an FAO meeting on the Drylands Sustainable Landscape IP in Rome on January 29 – 30. The meeting focussed on the design of the IP’s global platform, in particular knowledge management, private sector engagement, value chain development, and transboundary (regional) cooperation. STAP made a presentation on Land Degradation Neutrality.

(ii) Coronavirus

The STAP Chair, and Dr. Tom Lovejoy (senior advisor to the Chair), are members of the GEF High-Level Task Force on COVID-19, that the GEF has convened to advise on both short-term and longer-term responses to COVID-19 and other pandemics. They participated in the first virtual meeting of the Task Force on 26 May and will continue in this role through the end of 2020.

(iii) Integrated Approach Pilot programs

On 22 May, the STAP Chair participated in a virtual Technical Workshop on the GEF-6 IAP programs, together with Dr. Ratner and Dr. Saleem Ali (Panel member for climate mitigation). STAP welcomed the agencies’ work to embrace the principles in STAP’s integration paper (2018). Continued work in five areas is likely to improve future benefits and outcomes: adaptive management; monetization of co-benefits and tradeoffs; temporal and spatial scaling; an improved evidence base on lessons learned; and designing knowledge management systems at the design phase.

(iv) STAP reports

Three final reports were posted on STAP’s website.

- Earth Observation and the GEF, Technical Guideline, March 2020
<https://stapgef.org/earth-observation-and-gef>
- Guidelines for Land Degradation Neutrality (LDN) - A report prepared for the Scientific and Technical Advisory Panel of the Global Environment Facility, April 2020
<https://stapgef.org/guidelines-land-degradation-neutrality>
(The LDN guidelines will also be available in French and Spanish.)
- Multi-stakeholder dialogue for transformational change
<https://stapgef.org/multi-stakeholder-dialogue>

³¹ [STAP’s report on Designing Projects in a Rapidly Changing World \(RAPTA\)](#)

7. Personnel

In February, Dr. Ed Carr³², Professor, International Development, Community, and Environment, Director of IDCE, at Clark University, was appointed as the STAP Panel member for climate adaptation.

Dr. Rosie Cooney (Panel member for biodiversity) is leaving the Panel to take up a new position as Director of Conservation Research with the ACT (Australian Capital Territory) government. Recruitment for her successor will begin shortly.

8. Observations on the June work program

Overall the quality of projects continues to improve, though there were (as always) variations, with some good examples of what projects should be striving for, and progress on issues to which STAP has drawn particular attention.

For some projects, more details on how global environmental benefits are calculated would have been helpful. A detailed analysis and estimation are not required, but it is essential that baseline data are provided, as well as the underlying assumptions, and methodology used to derive the estimates.

Some projects have the potential to generate multiple global environmental benefits beyond the immediate focal area(s). Making sure that these co-benefits are recognised, which only a few projects did, is important to ensure that the overall benefits from GEF investments are maximized, and fully accounted for.

STAP reviewed 62 projects with a GEF investment of \$600 million. The project ratings were as follows:

- Biodiversity: 6 concur, 9 minor
- Chemicals and waste: 1 concur, 7 minor
- Climate change mitigation: 1 concur, 1 minor
- Land degradation: 7 minor
- International waters: 3 concur, 5 minor
- Multi-focal area: 3 concur, 19 minor

Climate risks and risk identification

One exemplary project on climate risk was the sustainable management and restoration of dry forests on the northern coast of Peru (10541), an FAO/IUCN MFA project which included a detailed analysis of climate risk, and well documented future projections. Although hazards, exposure, and vulnerability for the project area are deemed moderate, the project integrates multiple measures to address soil erosion and improve soil fertility in high-risk areas, for example, and further climate risk analysis will be done at the PPG phase.

An excellent analysis of overall risk categorization is part of the FishEBM project, an MFA, in the Mediterranean (10560); this provides a good indication of risks external to the project, including political stability, pollution, and disease outbreaks. The risk levels and responses will be considered further through stakeholder engagement prior to CEO endorsement.

Theory of change

The international waters Common Oceans project (FAO, 10548) focuses on sustainable utilisation and conservation of biodiversity in areas beyond national jurisdiction and has a good theory of change with a clear delineation of anticipated causal pathways, with assumptions clearly stated and associated with

³² <https://www.stapgef.org/edward-carr>

three stages of causal connections. This is an ambitious project where STAP's guidance on multi-stakeholder dialogue is especially relevant.

Innovation

A regional biodiversity project on Protected Area management in African national parks (10551) displayed an innovative approach in a partnership with a private entity (Vulcan, Inc.) to use Earth Observation data (EarthRanger) to help target resources more efficiently to monitor and patrol large landscape areas, which were threatened, for example, by fire, poaching, and illegal logging.

An NGI project on a Wildlife Conservation Bond (10330) in South Africa is very well planned and articulated; this will use an innovative financial instrument to generate private sector financing for conservation. The potential risk of using a novel and untested mechanism is mitigated by the project building on a very strong basis of consultative planning, which is well thought through, and offers a high probability of generating the intended benefits.

Land Degradation Neutrality (LDN)

A number of projects referred to using STAP's LDN guidelines (June 2019) to develop the PIF, which is gratifying.



And to end with a “wonder of nature” - In the COVID era, the only warm-blooded creatures cavorting in the London Underground in early May are two mice fighting over scraps of food.

May we all soon return to a safe and active life and enjoy future Council meetings together, in person.

Station Squabble by Sam Rowley, UK. Wildlife photographer of the year: Lumix 2020 people's choice winner.