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REPORT OF THE CHAIR OF THE SCIENTIFIC AND TECHNICAL ADVISORY PANEL TO THE 63RD GEF COUNCIL

STAP Chair's Report to the November Council

INTRODUCTION

This report provides an update on the work of the Scientific and Technical Advisory Panel (STAP) since the 62nd Global Environment Facility (GEF) Council meeting in June 2022. Over the past six months, STAP has provided advice and worked on a number of topics, as detailed in this report.

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REPORTS

1. STAP's report to the 7th GEF Assembly

Over the last 8 years, the GEF has moved to tackle global environmental issues across the traditional focal areas and across geographic 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.

STAP's terms of reference[1] state that it should submit a quadrennial report to the GEF Assembly that considers the state of the science, emerging issues, and gaps, looking ahead to the next replenishment period.

In December 2020, STAP's initial perspective on GEF-8 suggested that the GEF consider a three-pronged approach: to ensure that its investments are efficient, transformative, and durable in producing global environmental benefits (GEBs); to ensure that its overall portfolio is more integrated and coherently transformational; and to contribute to the transformation of the global economic systems, using its convening power and leverage, by forming partnerships with others to deliver more environmentally sustainable development.

The GEF-8 Strategic Positioning Framework[2] 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. The Framework broadly adopted STAP's suggested three-pronged approach, noting that investments need to be integrated, transformative, and enduring.

Current scientific literature underscores the need for GEF-8 to deliver more, enduring, GEBs 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 is liable to breach 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 rapid and genuinely transformative.**

The STAP Assembly report notes six key entry points to achieving transformation emerging from the literature and shows that GEF investments, especially the Integrated Programs, can contribute significantly, either directly or indirectly to these (**Figure 1**).

The six entry points are sustainable food systems and resource use (including land, water, and oceans); sustainable urban and peri-urban development (including smart cities and communities); energy

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<underline>[1] Terms of Reference of the Scientific and Technical Advisory Panel (STAP)</underline>. March 2012.
[2] GEF, 2022. <underline>GEF-8 Strategic Positioning Framework</underline> . <underline>GEF/R.08/28.</underline> Global Environment Facility, Washington, D.C.

decarbonization (including through renewables) and sustainable industries; education, engagement of women and youth, and equity for other marginalized populations; human health, well-being, capacity, and demography; and 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. For example, the entry point for *sustainable food systems and resource use* covers the interactions between land, water, and oceans, and other resource use, and their effect on biodiversity, natural capital, ecosystem integrity, climate change, and environmental pollution.

The first three transformation entry points are most closely aligned with the GEF's mission, as they focus on the environmental foundation necessary to achieving sustainable development, but the other three are often central to achieving the first three, as well as potential co-benefits of achieving them. All require 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 effect takes sustained and coordinated effort, and it would be unrealistic to expect individual 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:

1. The GEF's **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.
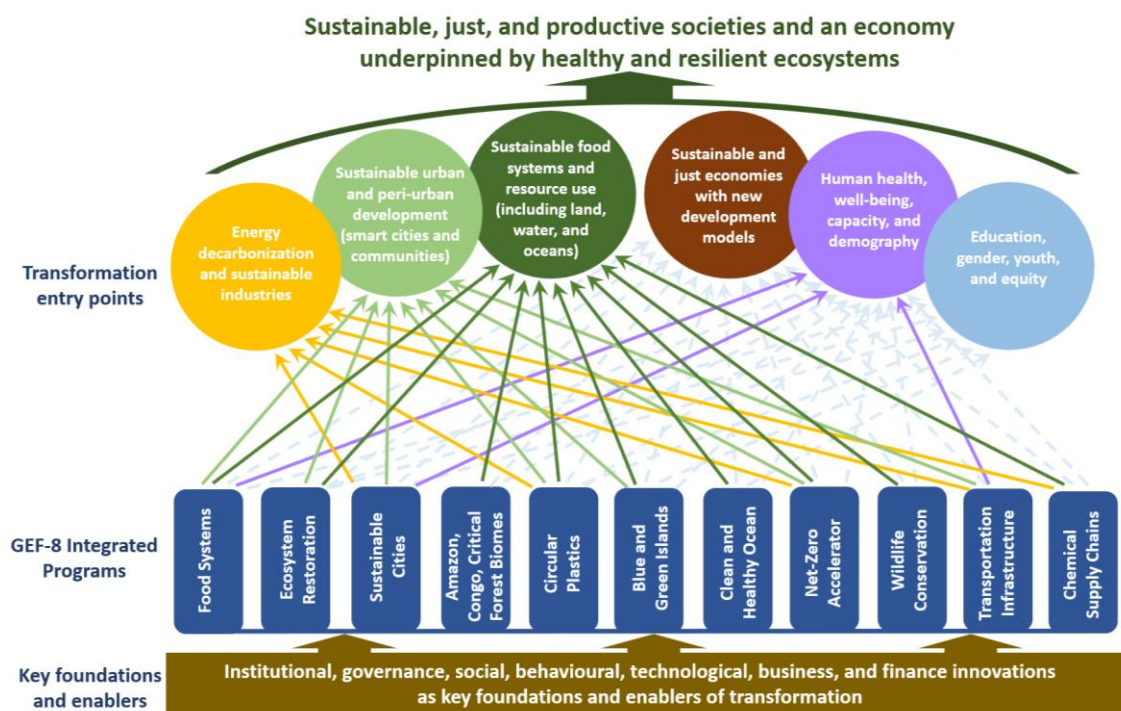
Figure 1: A mapping showing how GEF-8 Integrated Programs contribute to the key transformation entry points in the literature; heavy, solid arrows are the main direct contributions; light, dashed arrows suggest indirect contributions. The three transformations to the right are the core mission of the 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.)*

In GEF-8, and to prepare for GEF-9, STAP recommends the GEF look both externally and internally to do the following:

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.[3] 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.[4] Building from the risk framework, the GEF should seek innovation particularly in the Integrated Programs, Small Grants Program, and through the new dedicated window for innovation. The GEF should 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.

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

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[3] STAP, 2022. Risk Appetite and the GEF. Scientific and Technical Advisory Panel, Washington, D.C.
[4] STAP, 2019. Innovation and the GEF. Scientific and Technical Advisory Panel, Washington, D.C.

better policy coherence.[5] 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.[6]** 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.

Recommendation 5: Establish a new knowledge management[7] and learning system 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.

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. 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.

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 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.

2. Developing a GEF risk appetite framework

In June, following a discussion on STAP's paper [Risk appetite and the GEF](#), the Council requested the GEF Secretariat, with STAP and interested Council members, to draft a paper on a risk appetite framework for consideration in June 2023.[8] To help with this, STAP has prepared a [brief](#)on how to develop a risk appetite framework based on consultations with seven GEF agencies, the US Agency for International Development (USAID), and the Green Climate Fund (GCF).

Key points from the brief:

(i)   Consistent leadership is needed to set the tone and reinforce the importance of risk appetite, build a culture of effective risk management, and strengthen incentives for innovation.

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[5] STAP, 2022. [Framing Policy Coherence for the GEF](#). Scientific and Technical Advisory Panel, Washington, D.C.; STAP, 2019. [Achieving Enduring Outcomes from GEF Investment](#). Scientific and Technical Advisory Panel, Washington, D.C.

[6] STAP, 2022. [Refining the Tracking of Co-Benefits in Future GEF Investments](#). Scientific and Technical Advisory Panel, Washington, D.C.

[7] STAP, 2022. [Knowledge Management and Learning](#). Scientific and Technical Advisory Panel, Washington, D.C.; STAP, 2021. [Understanding South-South Cooperation for Knowledge Exchange](#). Scientific and Technical Advisory Panel, Washington, D.C.

[8] See GEF, 2022. [Joint Summary of the GEF Council Co-Chairs](#). Global Environment Facility, Washington, D.C., para 50.

(ii)   An effective development process includes structured deliberation, with extensive consultation, followed by a planned roll-out and capacity support to embed the risk appetite framework in practice.

(iii)   Key strategic choices to help guide the process include:

- *What **categories** of risk should the risk appetite focus on?*

- *How much **consistency** of approach should be expected?*

- *Should the risk appetite framework be **qualitative or quantitative?***

- *At what **programmatic level** should risk be assessed?*

- *How will **responsibility** for risk be distributed?*

STAP looks forward to working with the GEF Secretariat and Council members in the working group early next year.

3. A typology of climate change adaptation benefits: exposure, sensitivity, and adaptive capacity

The United Nations Environment Programme (UNEP) *Adaptation Gap Report* estimated that the costs of supporting developing countries in their efforts to adapt to climate-related risks and impacts are five to 10 times greater than current public adaptation finance flows.[9] By 2050, costs are estimated to be between US$315 billion and $565 billion, and the adaptation finance gap is widening.[10]

As the Intergovernmental Panel on Climate Change recently noted, "Most observed adaptation is fragmented, small in scale, incremental, sector-specific, designed to respond to current impacts or near-term risks, and focused more on planning rather than implementation."[11] The new announcement of an additional $105.6 million at the Climate COP is a welcome addition but clearly insufficient to meet the needs of the least developed countries and the small island developing states.

This problem can be partially addressed by developing clear rationales (and theories of change) for adaptation projects that link policy objectives to intended outcomes.

These adaptation rationales would benefit from a typology or classification of adaptation outcomes that is broad enough to capture the many locally specific actions taken to adapt to the impacts of climate change but that has enough structure to organize outcomes and to connect priorities, actions, and outcomes to inform better decision-making. Using a typology to clarify the intended outcomes of a project, or a portfolio of projects, would give clarity on whether the actions envisaged are sufficient and required to reach those outcomes.

In this brief, STAP offers a simple classification typology that organizes the benefits of adaptation interventions into three categories of benefits (**Figure 2**):

(i)   **exposure benefits** – does the activity reduce *the frequency and/or magnitude* of one or more climate impacts on the person, population, activity, or resource targeted by the project? For example, moving a transportation corridor further from the coast to avoid existing or projected flooding.

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[9] UNEP, 2022. Adaptation Gap Report 2022. United Nations Environment Programme, Nairobi.

[10] UNEP, 2022. Adaptation Gap Report 2022. United Nations Environment Programme, Nairobi.

[11] IPCC, 2022: Summary for Policymakers. H.-O. Pörtner et al. In Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, p. 18.

(ii) **sensitivity benefits** – does the activity reduce *the impact* of a climate-related event on a person, population, or system? For example, a roadway built out of more durable, permeable material to allow increasingly frequent floodwaters to pass and recede quickly with minimal damage.

(iii) **adaptive capacity benefits** – does the activity *increase the ability* of a person, population, or system to manage climate impacts or realize an opportunity emerging from climate change, including by transforming how they live? For example, extension services or local planning.

Exposure Benefits	Sensitivity Benefits	Adaptive Capacity Benefits
Reduces or modifies the *biophysical* exposure of people and activities to climate change impacts to limit negative impacts	Reduces or modifies the sensitivity of critical *societal* activities and assets to climate change impacts to limit negative impacts	Increases the ability of *people* to adapt to climate change impacts that cannot be avoided while taking advantage of emergent opportunities
Example actions: Climate resilient infrastructure (e.g., channelized waterways), coastal protection (e.g., sea walls), Evacuation or migration	Example actions: irrigation systems, crop switching, ecosystem management practices (e.g., flood/erosion control)	Example Actions: capacity building, trainings, awareness raising, microcredit and financing

Figure 2: Typology of climate adaptation benefits and examples of actions that may achieve each of these benefits. *(Source: STAP.)*

An example is provided in the paper to illustrate this concept in practice. Understanding adaptation action as intending to deliver one or more adaptation benefit allows for a) the construction of clear adaptation rationales (i.e. causal pathways within a theory of change) at the project and intervention level; b) the ability to critically assess entire portfolios of adaptation projects; and c) enhanced cooperation and coordination among donors and in-country partners to ensure that an appropriate mix of adaptation benefits is delivered so as to avoid piecemeal, incremental, and potentially duplicative outcomes.

OTHER STAP WORK

4. New PIF, and revised STAP screening guidelines

STAP worked closely with the GEF Secretariat in redesigning the PIF to streamline it and make it more coherent, more integrated, and simpler. STAP also contributed to a briefing session in mid-August for the GEF Secretariat and the agencies on STAP's enabling elements and how these had been reflected in the new PIF design.[12] Further briefing sessions are being planned for early in the new year.

The new PIF has three parts: first, project rationale - what is the problem being addressed, what are the key elements of the system, and its underlying drivers, leading to the objective of the project and its justification; second, project description - a theory of change, including key elements of good project design; and third, confirmation that the project meets the GEF's policy requirements on gender, stakeholders, private sector, knowledge management and learning.

The underlying rationale is that the PIF should present a more joined-up description of the project, making the connections between different project components, rather than having these atomised in

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[12] A recording of the August session can be found here.

different sections of the PIF. This helps to see the project as a whole, making it easier to comprehend what the project is seeking to achieve, and the logic behind it, which is much more difficult if the key components are in separate boxes.

New [STAP screening guidelines](#) were needed to accompany the new PIF because the current guidelines were structured in the same way as the old PIF, as was the template on which STAP screens are recorded. STAP's new guidelines consist of 12 questions which follow directly from what is asked for in the new PIF – see annex A.

The new [STAP template](#) is very simple and has just four sections: a summary of STAP's view of the project as a whole in about 150 words, covering both strengths and weaknesses; a section that asks if the project rationale and description are sound (about 400 words); specific points and suggestions to be addressed during project design to help strengthen the project; and a rating. In the new year, STAP will review the current three-box rating system– currently, concur/minor/major – to see if it is fit for purpose or could be improved. Completed STAP screens should be no more than two or three pages in length.

5. Selection of lead agencies for the Integrated Programs, and screening of Integrated Program Framework Documents

STAP Panel members and Secretariat staff joined the GEF Secretariat technical teams that reviewed applications by agencies to lead the new Integrated Programs (IP), in particular to review the scientific and technical merits of applications.

The functions and responsibilities of lead agencies 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.[13]

STAP will screen IP Program Framework Documents (PFDs) using its revised screening guidelines (annex A) and will pay particular attention to six of the 12 screening questions: systems-thinking, theory of change, knowledge management and learning, policy coherence, innovation, and transformational change.

STAP will also draw on insights gained in helping the GEF Secretariat review IP lead agency applications. Annex B sets out the six questions to which STAP will pay particular attention when screening IP PFDs and offers some observations on how lead agency applications have measured up against these criteria at an early stage.

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.

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[13] GEF, 2022. [GEF-8 Integrated Programs lead agency terms of reference and selection process](#). GEF/C.62/05/Rev.01. Global Environment Facility, Washington, D.C.

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."

Knowledge management and learning

Proposals should 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 will lessons learned be captured for the benefit of future projects.

Policy coherence

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

Innovation

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

Transformational change

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

6. Medium-sized projects and innovation – early review

The GEF-8 Strategic Positioning Framework lays out an ambitious agenda and recognizes the importance of innovation to achieving transformational change.

STAP's paper on [innovation](#) (2019) reviewed the GEF's experience with innovation in technology, finance, business models, policy, and institutional change and made recommendations on each of these, as well as on the importance of defining a risk appetite, cultivating innovation in design, encouraging adaptive implementation, exchanging lessons learned, and being clearer about who is responsible for innovation.

The GEF Independent Evaluation Office found that medium-size projects (MSPs) were a particularly fertile modality for innovation.[14, 15] As part of its continuing work on innovation, STAP reviewed innovation in a sample of 70 (of 241) MSPs in GEF-7 using the following definition from the STAP innovation paper: "Innovation refers to an idea, embodied in a technology, product, or process, which is new and creates value".

UNEP, the United Nations Development Programme (UNDP), the United Nations Industrial Development Organization (UNIDO), and the Food and Agriculture Organization of the United Nations (FAO) accounted for about 80% of GEF-7 MSPs.

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[14] GEF IEO, 2020. [Evaluation of the Role of Medium Size Projects (MSP) in the GEF Partnership 2020](#). Global Environment Facility Independent Evaluation Office, Washington, D.C.
[15] GEF IEO, 2021. [GEF Support to Innovation: Findings and Lessons](#). Global Environment Facility Independent Evaluation Office, Washington, D.C.

The main findings were:

- About half were rated as innovative (34 projects out of the sample of 70), and a larger proportion of climate change projects (15 out of 25) than biodiversity projects (7 out of 19) were rated as innovative.

- 16 (out of 34) were designed to make major improvements to *existing* innovations

For example, project #10834 (UNDP): *Mali national child project under the Africa Mini-Grids Program.* The project introduced an innovative mini-grid business model to increase the uptake of renewable energy, and also piloted financing solutions new to the country to de-risk investment and overcome barriers to the uptake and use of renewable energy mini-grids.

- 13 (out of the 34 rated as innovative) planned small incremental improvements to *existing* innovations.

For example, project, UNIDO, #11005: *Reduction of industrial persistent organic pollutant chemicals in manufacturing and recycling sectors through life-cycle approaches in Georgia.* The project replicated approaches such as environmentally sound management plans, best available technologies, and best environmental practices that had been pioneered extensively elsewhere.

- 5 (out of 34) adopted novel approaches or tested new solutions and technologies.

For example, project Asian Development Bank, #10431: *Public-private partnerships (PPPs) for coral reef insurance in Asia and the Pacific*. This project builds on an initial pilot project to further establish and test innovative business models and investment approaches to climate insurance for coral reefs. It is intended as a proof of concept that, if successful, can leverage investments in the maintenance and restoration of coral reefs and catalyse the scaling of insurance markets and products with potential for other natural coastal assets such as mangroves.

- All five domains of innovation identified by STAP[16] were represented in the sample, with a relatively even spread between the five types: business process (14 out of 34), financial (13 out of 34), technological (9 out of 34), institutional (10 out of 34), and policy innovation (10 out of 34). (Some projects had more than one domain.)

- Of the 34 projects rated as innovative, half (17) had one domain of innovation, and the other half more than one domain. (This appears to confirm STAP's earlier conclusion that innovation often requires more than one type of innovation.)

- All bar 2 of the 34 innovative projects referred to an intention to scale.

Finally, there is some evidence to suggest that MSPs *can* lay the groundwork for subsequent larger GEF investments. For example, the World Bank's $14 million "rhino bonds" a non-grant instrument project (GEF-7; #10330), with $150 million in co-financing, was preceded by a $1.7 million MSP (GEF-5; #5721) that tested 7 candidate sites; developed a model for assessing black rhino populations; established best-

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[16] STAP, 2019. Innovation and the GEF. Scientific and Technical Advisory Panel, Washington, D.C.

practice monitoring methods; provided technology, resources, and training for increased security; and (after a 12-month extension) located potential outcome-oriented investors.

7. Looking ahead

Topics where STAP has work in hand, planned, or under consideration.

    (i)   Risk appetite framework

STAP is thinking further about how the Council working group could be structured, next steps, and a process to deliver a risk appetite framework for decision at the June 2023 Council.

    (ii)   Knowledge management platforms for the Integrated Programs

The Integrated Programs will have a knowledge platform linking child projects to facilitate learning exchange between countries and to provide access to innovations, tools, good practices, and technical assistance. STAP is working with the GEF Secretariat on a convening, to be held early in the new year, to discuss agencies' experiences in setting up knowledge management platforms for the Integrated Approach Pilots and Impact Programs to learn how these could be helpful in developing Integrated Program knowledge management platforms.

    (iii)   Developing a strategy on policy coherence

STAP's paper on <u>framing policy coherence for the GEF</u> (June 2022) defined what good policy coherence means for the GEF, and STAP is now thinking about how this framing could be operationalized into a GEF policy.

    (iv)   Guidance on simple future narratives

At the Council meeting in June 2022, STAP presented a brief on using <u>simple future narratives to design resilient and durable projects</u> and is now preparing guidance on how to create simple future narratives and apply them in project design.

    (v)   Metrics for transformational change

To follow STAP's paper on <u>transformation</u> (June 2022), STAP is working with the GEF Secretariat on a workshop on metrics for transformational change, to be held in the spring.

    (vi)   Co-benefits

STAP's <u>information note on co-benefits</u> (June 2022) explained why some co-benefits are essential to the GEF's mission to deliver GEBs, while others may be beneficial but incidental benefits that can add to the value of GEF investments, such as reduced pollution or improved health quality. STAP plans further work to identify which co-benefits need to be tracked and how to establish systems to report on them. In addition, STAP is thinking further about the wider benefits of the GEF to the economy, beyond GEBs, including valuation.

    (vii)   Innovation

Building on STAP's previous advice on <u>innovation and the GEF</u> (2019) and the review of MSPs (see section 3), STAP is exploring further how innovation could be promoted across the GEF portfolio, including in the Integrated Programs and the Small Grants Program. One possibility might be to make greater use of MSPs as a modality 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 at the same time in a concentrated effort to solve a specific problem. STAP will also think

about how to operationalize the new dedicated GEF funding window for innovation to be launched in 2023.

(viii)   Environmental security

STAP's paper Environmental security: dimensions and priorities (2018) distinguished between different dimensions of environmental security of relevance to the GEF, including the drivers of increased (livelihood) vulnerability and conflict risk. STAP is considering a review of how different actors are addressing these links and where there might be opportunities for the GEF to engage, including in project and program design.

(ix)   Land degradation neutrality

STAP, with the GEF Secretariat, has commissioned an analysis of a sample of land degradation projects to understand how land degradation neutrality is being addressed so as to generate knowledge for adaptive management and improve practices for mainstreaming land degradation neutrality in national plans. The analysis will also provide insights into whether revisions are needed to STAP's land degradation neutrality guidelines. A report is due to be completed by June 2023.

(x)   Training

STAP will help develop a modest set of training materials for the GEF Partnership on leading practice in project design, beginning with guidance on how to develop a theory of change, based on STAP's Theory of Change Primer (2020), with other topics to follow. STAP will work with the GEF Secretariat to share this information with country constituencies in Latin America and Africa. And STAP has also offered to organize a "STAP day" at GEF Extended Constituency Workshops.

(xi)   Non-grant instruments (NGI)

STAP will review the lessons it has learned from screening NGI projects.

8. Panel member updates

(a) Changes in STAP membership

Dr. Saleem Ali, the STAP member for climate mitigation, has concluded two terms, and will be leaving the Panel at the end of December. A new Panel member has been nominated, and, subject to approval, will be announced at the November Council.

The appointment of Dr. Blake Ratner, the STAP member for international waters, has been extended for six months, following an inconclusive recruitment exercise for a successor.

(b) Other work by STAP members

Dr. Rosina Bierbaum, the Chair of STAP, participated in the GEF agency retreat on 18–20 October and made three presentations: on the process for selecting lead agencies for the Integrated Programs; streamlining the GEF-8 PIF; and knowledge management and learning.

Dr. Bierbaum co-chaired Room 15, Life on Earth, of the Rockefeller–Brookings "17 Rooms" effort this year. The product is the Natural Security Initiative: Embracing Nature as the Foundation for Global

Security, supported by the participants in Room 13 (Climate) and Room 14 (Life below Water). The full 17 Rooms 2022 report will be released on 7 December. The GEF–Green Climate Fund pavilion at the Conference of the Parties (COP) 27 hosted a special session on this initiative on 10 November, with the keynote address given by Monica Medina, Assistant Secretary for Oceans and International Environmental and Scientific Affairs, US Department of State.

On 1 September, Dr. Bierbaum was the keynote speaker at the fiftieth anniversary of the Science and Technology Policy fellowship program at the American Association for the Advancement of Science. She discussed *science for policy* and *policy for science*, as well as lessons learned working at the domestic and international science–policy nexus.

Dr. Saleem Ali, a member of the International Resource Panel, served as coordinating lead author on a global assessment of the natural resource implications of human migration, which will be released as a UNEP publication in early 2023. He will also contribute to a new International Resource Panel report on mineral resource finance for the green transition.

Dr. Edward Carr, the STAP member for climate adaptation, attended the scoping meeting of UNEP's Seventh Global Environment Outlook in Nairobi from 17 to 19 October , where he participated in a panel on food security and held discussions on the role of social and behavioural science in the assessment process. In addition, he co-authored several papers: Gumucio, T., et al., 2022. "Enhancing climate services design and implementation through gender-responsive evaluation". *Frontiers in Climate* 4, 908602; Carr, Edward R., 2022. "Can conflict-sensitive gender analysis close the door on backdraft?" *New Security Beat*, Woodrow Center; Carr, Edward R., et al., 2022. "Systemic solutions for climate change adaptation and mitigation in agricultural, nutrition, and food systems". Working paper. Board for International Food and Agricultural Development.

Dr. Miriam Diamond was officially inducted as a Fellow of the Royal Society of Canada. In addition, s**he** co-authored several papers, including Almroth, B.C., et al., 2022. "Understanding and addressing the planetary crisis of chemicals and plastics". *One Earth* 5(10), 1070–74; Minet, L., et al., 2022. "Use and release of per-and polyfluoroalkyl substances (PFAS) in consumer food packaging in U.S. and Canada". *Environmental Science: Processes & Impacts*, doi:10.1039/D2EM00166G; Chunjie, X., et al., 2022. "Per-and polyfluoroalkyl substances in North American school uniforms". *Environmental Science & Technology* 56(19), 13845–57.

Dr. John Donaldson, the STAP member for biodiversity, was approved as co-chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) assessment of sustainable use of wild species by the IPBES Plenary in July. Dr. Donaldson is working on the final report of this assessment and to ensure that its findings inform the deliberations of the Conferences of the Parties for the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Biological Diversity (CBD). This includes hosting side events at the CITES and CBD Conferences of the Parties and working with a group of experts, appointed by the Group on Earth Observations Biodiversity Observation Network and by Future Earth, to prepare science briefs to support negotiations of the post-2020 global biodiversity framework.

Dr. Graciela Metternicht, the STAP member for land degradation, chaired the Natural Resource Management session of the first-ever Global Conference on Sustainable Plant Production, organized by the FAO under the theme of innovation, efficiency, and resilience, on 2–4 November; this session focused on maximizing resource efficiency and ecosystem approaches to resilience to drive sustainable natural resource management. In October, Dr. Metternicht was appointed dean of science at Western Sydney University – previously she was professor of Environmental Geography at the University of New South Wales, Sydney.

Dr. Blake Ratner leads Collaborating for Resilience, which has received support from the Shockwave Foundation to foster an international network focused on the capacities of social entrepreneurs working on systems change approaches to ecosystem restoration, building on the success of ongoing collaboration in India. He is the lead author on a synthesis published in *Ecology and Society* on a regional comparative analysis of multi-stakeholder platforms for natural resource governance in South America, South Asia, and East Africa. In October, Dr. Ratner made a presentation at a GEF brown bag lunch, "Climate–poverty connections–synergies at the intersection of planetary and human well-being", which featured work by Project Drawdown Lift to highlight connections between climate change solutions and poverty alleviation, particularly in countries in Africa and South Asia. A recording of the event is available here.

 Dr. Mark Stafford Smith, senior advisor to STAP Chair, co-chaired A National Strategy for Just Adaptation for Future Earth, which was launched in September 2022. Dr. Stafford Smith was a co-author on a commentary in *Nature Climate Change*: Wise, R.M., et al., 2022. "Pragmatic cost–benefit analysis for infrastructure resilience". *Nature Climate Change* 12, 881–83. And in August, he made a presentation, "What STAP will look for in good project design in GEF-8", on behalf of STAP at a GEF Secretariat technical briefing on the GEF-8 PIF template.

ANNEX A: STAP'S REVISED SCREENING GUIDELINES

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 B: WHAT WILL STAP LOOK FOR IN PARTICULAR WHEN 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 of the 12 screening questions: 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.