REPORT OF THE CHAIR OF THE SCIENTIFIC AND TECHNICAL ADVISORY PANEL TO THE 62ND GEF COUNCIL

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INTRODUCTION

1.   This report provides an update on the work of the Scientific and Technical Advisory Panel (STAP) since the last Global Environment Facility (GEF) Council meeting in December 2021. Over the past six months, STAP has worked on numerous projects and documents, as detailed in this report.

2.   The GEF eighth replenishment period (GEF-8) strategy seeks to transform global systems – including food, urban, energy, nature, and health – to deliver durable global environmental benefits (GEBs). "The vision for GEF-8 is the achievement of a healthy, productive, and resilient environment underpinning the well-being of human societies." To support this overarching goal, STAP has been reviewing the science and practitioner literature in a number of key areas to summarize the latest information and offer guidance as GEF-8 begins. STAP has posted nine papers for this Council to help advance thinking that can aid in the success of GEF-8. These papers complement STAP's previous advice, in particular, on enabling elements for good project design. Each of these new papers is discussed in more detail in this report. Taken together, STAP hopes they help outline a path forward on good design without adding additional layers of work for agencies and countries.

3.   High-level messages from the papers include the following: Transformational change requires innovation, which can bring higher rewards (more GEBs) and is also likely to entail higher risk. Transformation will be particularly important to consider in the new Integrated Programs, which STAP will help in operationalizing, as it did for the Impact Programs. STAP has been doing further work to follow up on its 2019 report to look at innovation, writ large, across the GEF portfolio, including the place of innovation in the Integrated Programs, the new dedicated window of innovation, how medium size projects have been used for innovation, and how to achieve the triple goals of innovation, risk, and transformation. STAP's paper on risk appetite, in response to the recommendation of the GEF Independent Evaluation Office (IEO) in OPS-7, explains why it would be helpful to articulate how, where, and to what degree the GEF is prepared to take greater risk, as well as how to develop a risk framework to inform GEF policies and procedures, metrics, and monitoring systems. STAP's paper on transformation shows how the transformative potential of an investment can be determined and discusses metrics for monitoring and learning about transformation, with some suggestions for indicators. A proposed workshop in autumn 2022 with the GEF Secretariat would consider metrics for transformational change in the new Integrated Programs.

4.   GEBs need to be durable and need to take into account not just a future climate risk but other drivers of change, including population, conflict, and migration. Not doing so can make project outcomes short-lived, less resilient, or even damaging for the environment and for people. STAP's paper on plausible futures explains that there is more than one possible future, with advice to follow on how to develop simple future narratives. Co-benefits for local stakeholders (e.g. improved livelihoods) are essential prerequisites for durable GEBs and are therefore integral to project design, not simply incidental or nice to have.

5.   STAP's paper on framing policy coherence notes that in addition to being essential for safeguarding GEBs achieved through GEF investments, greater alignment between economic, social, and environmental policies will enable more ambitious levels of GEBs to be achieved broadly. The paper provides details of actions and tools, some already being used by GEF Agencies, that can help deliver greater policy coherence. Natural capital approaches can contribute to greater policy coherence by ensuring that the value of natural capital and ecosystem services is factored into policy and decision-making.

6.   The new knowledge management and learning (KM&L) strategy under development should enable the GEF to make the best use of what has already been learned from previous investments by giving project developers easy access to what works, where, why, how, and in what circumstances, as well as what does not work. STAP's information brief on KM&L for this Council offers a theory of change to guide the development of the new strategy. STAP will be offering trainings (e.g. on theory of change and multi-stakeholder dialogue) to help make best use of STAP's advice.

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REPORTS

1. <u>Knowledge Management and Learning</u>

7.   KM&L is essential to identifying, replicating, and scaling up best practices and solutions and to improving the performance and impact of investments.

8.   KM&L is everyone's business: every team member – recipient countries, GEF Agencies, and the GEF Secretariat – is a knowledge worker. Everyone needs to understand the importance of KM&L and to help create a culture in which it flourishes. KM&L requires knowledge use and action, not just archiving. It needs be organized and searchable so that knowledge is not lost when people leave or projects end.

9.   GEF's KM&L strategy should support rapid learning and application, ensure that innovation and learning are systematized and durable, work across internal and external silos as well as across organizational levels and countries, and demonstrate greater impacts from investment. This will allow, for example, harvesting lessons learned from the current crop of integrated programs that can inform the 11 new ones just approved.

10.   STAP's information brief on KM&L offers a theory of change to guide the development of the GEF's new KM&L strategy for GEF-8. The brief suggests that the strategy should be framed around the following considerations:

  – Exercising strong governance and leadership to create and promote a systemic, integrated KM&L culture

  – Facilitating durable learning through a redesigned capturing and sharing approach that consistently records and uses explicit knowledge

  – Promoting empowerment and exchange, and ensuring that knowledge can be easily shared, including for training, and capacity-building purposes

  – Adopting efficient processes for mining existing knowledge, identifying opportunities for the best return on investments, and applying mined knowledge and learning in new investments

  – Encouraging tracking and adapting to position the GEF as a leader in KM&L-supported high-impact programs by monitoring results from the GEF investment portfolio and continually improving the data incorporating lessons learned

11.   STAP would be willing to organize a workshop or retreat with the GEF Agencies and the GEF Secretariat to explore this approach further and to learn from agency efforts to improve their own knowledge management systems.

2.   Risk Appetite

12.   The practice of adopting a risk appetite has been widely implemented by financial institutions and is recognized as a key influencer of organizational culture.[1] In simple terms, risk appetite refers to the amount of risk an organization is prepared to accept in pursuit of its objectives.[2] In the banking sector, where risk appetite is a core element of corporate governance, it is defined as "the written articulation of the aggregate level and types of risk that a bank will accept, or avoid, in order to achieve its business objectives".[3] Evidence from a comparative analysis of global financial institutions indicates that "the practice of establishing firm-wide risk appetite has a profound impact upon firms' activities", reflected in improved risk monitoring and decision-making.[4]

13.   In OPS-7,[5] the GEF IEO urged a continued emphasis on innovation for transformational change in the GEF portfolio. It noted that "GEF project review mechanisms should incentivize innovative projects across the partnership," explicitly address the associated risks at the project level, and "clearly articulate the level of acceptable risk across the various instruments and approaches for clarity across the partnership and to encourage innovation through a managed approach".

14.   The GEF Secretariat's management response to the IEO evaluation noted that "the Secretariat agrees that it is critical to define an acceptable appetite for risk that will guide the preparation, selection, and design for innovative projects." Recognizing that "this needs to be jointly addressed by members of the GEF partnership", the response further notes that "the Secretariat will seek guidance from both STAP and the GEF Council so as to examine the trade-offs of risk versus innovation, with an aim to establishing a clear baseline for risk acceptance in GEF-8 programming".[6]

15.   In response, STAP has prepared guidance on risk appetite that suggests it would be helpful to articulate how, where, and to what degree the GEF is prepared to take well-informed risks that have the potential for system-wide impact. The paper also explains how to develop a risk appetite framework that could inform GEF policies and procedures, metrics, and monitoring systems. This is particularly relevant for GEF-8 to support transformational change,

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[1] Gontarek, W., 2016. "Risk governance of financial institutions: The growing importance of risk appetite and culture". *Journal of Risk Management in Financial Institutions*, 9(2), pp. 120–29.

[2] ICAI, 2015. *DFID's Approach to Delivering Impact*. Independent Commission for Aid Impact, London.

[3] Basel Committee on Banking Supervision, 2015. *Guidelines: Corporate Governance Principles for Banks*. Bank for International Settlements, Basel.

[4] Gontarek, W., & Bender, R., 2019. "Examining risk governance practices in global financial institutions: The adoption of risk appetite statements". *Journal of Banking Regulation*, 20(1), pp. 74–85, https://doi.org/10.1057/s41261-018-0067-2.

[5] GEF IEO, 2022. *Working toward a Greener Global Recovery: Seventh Comprehensive Evaluation of the GEF*. Global Environment Facility Independent Evaluation Office, Washington, D.C.

[6] GEF, 2021. "Management response to: Working toward a Greener Global Recovery (Seventh Comprehensive Evaluation of the GEF)". Global Environment Facility, Washington, D.C.

which requires greater innovation and exploration of new ways of achieving higher levels of impact.[7]

3.   Achieving Transformation through GEF Investment

16.   The GEF-8 strategy seeks to transform global systems – including food, urban, energy, nature, and health – to deliver GEBs and ensure the achievement of a *healthy, productive, and resilient environment underpinning the well-being of human societies*.[8]

17.   STAP's information brief on transformation defines a transformative investment as one that involves a pathway to enduring change at a sufficient scale to deliver a step improvement in one or more GEBs. While not all projects are intended to be transformative, the GEF's programs and the portfolio as a whole should be designed to yield systemic change.

18.   The brief suggests that the transformative potential of an investment can be determined by asking three questions:

- *Intent: Should the investment be transformative?* This identifies which investments are expected to be truly transformative.

- *Ambition: Is the investment goal sufficiently transformative?* This tests the investment's goals to ensure they have sufficiently transformative ambition.

- *Feasibility: Is the proposed logic for achieving the goal credible?* This ensures that the project's design provides credible pathways to achieve its transformative ambitions and that the pathways will be monitored.

19.   The brief also discusses metrics for monitoring and learning about transformation: leading indicators to track whether processes expected to lead to scaling and transformation are being pursued, and lagging indicators to track if the intended impacts have been achieved.

20.   The brief suggests that project developers consider indicators to determine whether:

- The organizations and other actors have the capacity for required change

- The expected changes in governance and policies are happening

- Multi-stakeholder engagements are being maintained and increased

- Innovation is emerging, and learning and knowledge exchange is occurring

- Leverage of financial resources is occurring and increasing

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[7] See STAP, 2021. *Achieving Transformation through GEF Investments*. Scientific and Technical Advisory Panel to the Global Environment Facility, Washington, D.C.
[8] GEF, 2022. "GEF-8 Strategic Positioning Framework". Global Environment Facility, Washington, D.C.

21.   The brief offers examples of metrics for monitoring transformation relevant to some GEF projects and programs with different transformation pathways.

22.   STAP proposes to hold a workshop in autumn 2022, with the GEF Secretariat, to develop such metrics for the GEF-8 Integrated Programs.

4.   Refining the Tracking of Co-benefits in Future GEF Investment

23.   The GEF policy recommendations[9] request the GEF Secretariat to develop options for consideration at the December 2023 Council meeting "to improve the capture of human and socio-economic well-being metrics as well as climate change adaptation co-benefits in the results monitoring and improve their consideration in the design of GEF-funded projects and programs to further support the achievement of Global Environmental Benefits (GEBs)".

24.   STAP distinguishes between two types of co-benefits: prerequisite (necessary) and incidental. Prerequisite co-benefits are essential for delivering durable GEBs and are therefore integral to project design; for example, the durability of GEBs from a conservation project may depend on whether local stakeholders receive livelihood co-benefits. Incidental benefits include environmental and socioeconomic benefits outside the GEF's mandate and may not be critical to achieving durable GEBs; however, they do demonstrate the GEF's added value, including its contribution to improving human well-being and its impacts on the economy. Over the longer term, the GEF may wish to know more about the co-benefits of its investments. Many co-benefits are already being collected for the Sustainable Development Goals and multilateral environmental agreements (MEAs); new approaches may not need to be developed.

25.   The GEF-8 Results Measurement Framework[10] distinguishes between the GEF's contribution to achieving GEBs (operational outcomes of GEF investment) and the effectiveness of the GEF's operational performance, as well as the inputs, processes, and activities (operational inputs) that helped lead to those outcomes. At a portfolio level, STAP suggests that adding measures of *prerequisite co-benefits* to the Results Measurement Framework scorecard would be beneficial and would help track how well the GEF Partnership is collectively achieving the design and management of projects and programs for transformative outcomes.

26.   Both prerequisite co-benefits and incidental co-benefits (socioeconomic and environmental) could assist in measuring the GEF's contribution to human well-being and to understanding the GEF's impact on the economy.

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[9] GEF, 2022. "Revised policy recommendations". Global Environment Facility, Washington, D.C.
[10] GEF, 2022. "GEF-8 policy directions: The enabling environment for transformation". Global Environment Facility, Washington, D.C., para. 60.

5.   Framing Policy Coherence for the GEF

27.   Policy coherence is key to fully achieving GEBs. Misaligned policies can allow leakage, reduce the durability of GEBs, or even result in investment in environmentally damaging behaviours. STAP offers this framing document to assist in thinking about this important issue.

28.   For the GEF, policy coherence can be defined as an approach to integrate environmental objectives into domestic policymaking by fostering synergies, maximizing benefits, and managing trade-offs across economic, social, and environmental policy areas, as well as balancing domestic policy objectives with commitments under the MEAs.

29.   In addition to safeguarding GEBs, greater alignment across environmental, economic, and social policies would advance the speed and magnitude of GEBs achieved, at lower cost.

30.   In designing its approach to policy coherence, STAP suggests that the GEF should think about policy coherence working across different sectors, across different levels of government, and across different timescales; should articulate explicit objectives for addressing policy coherence in a GEF context; and should consider how to coordinate its influence in all these areas.

31.   The GEF also should think about how to operationalize policy coherence at its different operational levels, from those within its narrower sphere of control (e.g. its projects and programs, in particular the Integrated Programs, and the new pool of funds for policy coherence), to working with countries, to its wider sphere of influence in the MEAs.

32.   The STAP paper provides details of actions and tools that could be deployed at different levels, including some already used by the Asian Development Bank, the United Nations Development Programme, the United Nations Environment Programme, and the World Bank, as well as the Organisation for Economic Co-operation and Development and GIZ (the German Corporation for International Cooperation). It also suggests how the GEF could develop a coordinated approach to key objectives for policy coherence.

6.   Natural Capital Approaches

33.   Nature is now widely recognized as having an essential function in providing the resources needed for economies to thrive, guaranteeing their resilience to a range of external shocks such as climate change, and contributing to human health and well-being. This recognition has generated a significant amount of interest, especially among policymakers and planners, in implementing "natural capital approaches", which include natural capital assessments (quantifying, mapping, and valuing stocks of natural capital and flows of ecosystem services using a variety of quantitative and qualitative metrics) and natural capital accounts (tracking stocks of natural capital using standardized methods).

34.   However, natural capital approaches have often been deployed as one-time exercises that are not mainstreamed and institutionalized and therefore not being used for broader policymaking and decisions at the national level.

35.   The GEF-8 Programming Directions for the Biodiversity focal area say that the GEF will support natural capital approaches designed to respond to specific target decisions or policy questions, responding to recommendations made by the IEO in its evaluation of the GEF's support for mainstreaming biodiversity.

36.   To support this, STAP commissioned the Stanford Natural Capital Project to examine (a) how to accelerate the integration of natural capital approaches into GEF policy and investment decisions and (b) how to increase the uptake of natural capital approaches by governments, multilateral development banks, businesses, and local communities.

37.   Stanford has identified key factors for success including elements that promote policy coherence, the presence of a clear mandate, and consideration of alternate futures that can impact natural capital.

38.   Stanford's report also outlines a possible Technical Assistance Facility, which would provide access to well-established mechanisms and best practices for using natural capital approaches more broadly in GEF recipient countries.

7.   There's More than One Plausible Future

39.   The GEF-8 Strategic Positioning Framework[11] points to the need to design projects in the face of multiple plausible futures by taking into account how the drivers of change, such as population, conflict, climate change, and migration, could play out in the future. Not doing so can make project outcomes short-lived, less resilient, or even damaging to the environment and people. GEF projects routinely consider how climate risk may affect the durability of desired outcomes: other drivers of change also need to be considered.

40.   In describing the system, project developers need to identify trends in key drivers; these can be converted into a small number of simple narratives about how the future may unfold and how the key drivers may interact with one another.

41.   Developing simple future narratives *before* deciding on a final project design often widens the range of options to achieve desired benefits, particularly to include those that are *robust* to future uncertainty. *Robust* project designs work reasonably well in all plausible futures, rather than very well in one plausible future but poorly in others.

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[11] GEF, 2022. "GEF-8 Strategic Positioning Framework". Global Environment Facility, Washington, D.C.

42.   Considering plausible futures is becoming the leading practice in sustainability and development projects, including among GEF Agencies and external organizations.[12] Complex or highly quantified approaches are not needed to improve the design of GEF projects.

43.   STAP is preparing guidance on how to develop simple future narratives, as a follow-up to this brief.

8.   GEF and the Blue Economy

44.   GEF-8 has four new Integrated Programs that support the blue economy: these address land-based sources of marine pollution, policy coherence in small island developing States, reduction of plastic pollution of marine environments, and food systems, including sustainable intensification of aquaculture as a priority alongside terrestrial food production.

45.   Several focal areas also involve the blue economy. The International Waters focal area emphasizes sustainable fisheries, as well as international cooperation to manage large marine ecosystems. The Biodiversity focal area maintains a focus on biodiversity mainstreaming, including support for natural capital accounting in both terrestrial and marine ecosystems. The Climate Change focal area prioritizes nature-based solutions with high mitigation potential, including coastal habitats such as mangroves, seagrass, and marshes.

46.   This STAP paper on the blue economy reviews the recent literature and summarizes advances in science, governance, conservation, and policy in this arena. Based on this review, STAP suggests that future priorities could be pursued through the four transformation levers in the GEF-8 theory of change: governance and policies, financial leverage, innovation and learning, and multi-stakeholder dialogue.

47.   To ensure that investments in the blue economy are consistent with the GEF's mandate and targeted on system transformation in GEF-8, some possible priorities for investment,[13] consistent with the GEF-8 theory of change, include:

- Promoting "goal-oriented ocean planning" using processes that are "science-based, inclusive, participatory and adapted to the local context"

- "De-risking finance and using innovation to mobilize investment" (e.g. in sustainable fisheries, mariculture, ecotourism linked to marine protected areas, and offshore wind energy)

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[12] Some GEF Agencies already deploy future thinking in their project planning (e.g. the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development, the World Wildlife Fund, and Conservation International have used this in past GEF projects). Development agencies like the US Agency for International Development and the UK Department for International Development have also incorporated future thinking into their projects and funding decisions.

[13] Related to the five building blocks identified by the High Level Panel for a Sustainable Ocean Economy. Stuchtey, M., et al., 2020. *Ocean Solutions That Benefit People, Nature and the Economy*. World Resources Institute, Washington, D.C.

     − Stopping land-based sources of marine pollution, including reduction and treatment of waste flows from agriculture, industry, and municipal sources, and reducing plastic waste

48.   The GEF could also play a contributing role in "using data to drive decision-making" by supporting the adoption of standardized data and monitoring systems and by encouraging national regulations to strengthen their use, and in "changing ocean accounting so that it reflects the true value of oceans".

9.   A Decision Tree for Adaptation Rationale

49.   The GEF has invested more than $2 billion over the last 20 years in climate change adaptation through the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). A recent evaluation by the IEO found that "LDCF support continues to be highly relevant to COP [Conference of the Parties] guidance and decisions, the GEF adaptation programming strategy, and countries' broader development policies, plans, and programs".[14]

50.   Well-designed projects are more likely to lead to effective project implementation. Adaptation projects specifically benefit from having a clear rationale, with particular attention to four main elements: the presence of worsening climate hazards, either now or in the future; evidence of how these hazards affect people and places; interventions that clearly address the impacts of climate change; and effective monitoring, evaluation, and learning.

51.   Given the increasing importance of adaptation,[15] additional funding for the LDCF and SCCF, and the development of a new GEF adaptation strategy, STAP has developed a decision tree for project developers to ensure that projects have a robust adaptation rationale. This decision tree can help strengthen a shared understanding of good practices in the GEF Partnership and improve the impact of adaptation projects.

52.   The decision tree includes guiding questions to help project developers:

     − Decide whether adaptation is required because the climate is changing in a way that results in a worsening climate hazard that will have a significant adverse impact on human well-being

     − Identify projects that meet an adaptation need that is recognized as a problem by those experiencing the hazard

     − Ensure that projects complement current efforts to manage climate variability and hazards

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[14] GEF IEO, 2020. *Program Evaluation of the Least Developed Countries Fund (LDCF) 2020*. Global Environment Facility Independent Evaluation Office, Washington, D.C.

[15] IPCC, 2022. *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press.

- Maximize the synergies and minimize the trade-offs between adaptation benefits and the achievement of GEBs

53. Using the decision tree could help project developers to develop projects that are more likely to deliver effective and durable outcomes.

OTHER STAP WORK

10. Observations on the Work Program

54. The work program was posted on 24 May 2022. Given that Council has requested that STAP's Council report be posted as soon as possible, the Chair will report on the work program during her Council presentation.

11. Looking Ahead

55. Areas where STAP work is under way and will be completed by December include:

(i) Innovation

56. The GEF's Strategic Positioning Framework[16] for GEF-8 seeks transformational change in several key global systems and recognizes that transformational change requires innovation to address persistent global environmental and social challenges, as well as emerging issues, and to accelerate the necessary transitions for transformation.

57. OPS-7[17] said that the GEF supports innovation across its portfolio in all focal areas, project sizes, regions, and trust funds and that there has been an increasing trend in innovative projects over the GEF replenishment periods. It also noted that because many innovations involve risks, greater clarity is required on acceptable levels of risk for the GEF portfolio.

58. STAP is looking ahead at innovation, writ large, across the GEF-8 portfolio, including the role of innovation in the Integrated Programs, the new dedicated window of innovation, and how medium size projects have been used for innovation in different areas (e.g. policy, institutional, technology, and business models).[18]

(ii) The GEF's contribution to the economy

59. The GEF-8 Policy Directions[19] outlined a number of additional measures to improve the GEF's focus on results, including deepening the assessment of the impact of GEF operations on

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[16] GEF, 2022. "GEF-8 Strategic Positioning Framework". Global Environment Facility, Washington, D.C.

[17] GEF IEO, 2022. *Working toward a Greener Global Recovery: Seventh Comprehensive Evaluation of the GEF*. Global Environment Facility Independent Evaluation Office, Washington, D.C.

[18] 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.

[19] GEF, 2022. "GEF-8 Policy Directions: The enabling environment for transformation". Global Environment Facility, Washington, D.C., para. 60.

the economy. This would build on recent work quantifying the value of nature in the economy and using tested methodologies that estimate the return on GEF investment.

60. To contribute to this work, STAP is undertaking a review of existing methodologies used in evaluating the return on investment, or the impact of investments on the economy, of interventions by some international organizations, including the United Nations Development Programme's Biodiversity Finance Initiative, the UK Department for International Development, and the Inter-American Development Bank.

(iii) Adaptation services

61. A recent evaluation by the IEO[20] found that "the overall LDCF portfolio clearly contributed to reducing vulnerability and increasing resilience, mainstreaming climate change adaptation, and strengthening the enabling conditions for effective and integrated adaptation".

62. STAP is undertaking an analysis of adaptation services (reduced exposure, reduced sensitivity, and improved adaptive capacity) in the GEF LDCF portfolio (231 projects from GEF-4 to GEF-7) to develop a better understanding of the types of projects implemented to deliver these services, and how these projects have changed over time.

(iv) Additional work

63. In addition, over the next six months, STAP will work on:

  – STAP's report for the GEF Assembly, with a focus on transformation, risk appetite, and innovation; this report will be posted before the December Council meeting.

  – Development of training courses (e.g. on theory of change and multi-stakeholder dialogue), initially with countries in Latin America and Africa.

  – A workshop on metrics for transformational change designed with the GEF Secretariat.

  – Revised STAP guidelines for screening projects, following the Project Identification Form redesign for GEF-8.

  – Contributions to the development of the GEF-8 Integrated Programs.

  – Further advice on policy coherence.

  – A data and knowledge platform for mercury.

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[20] GEF IEO, 2020. *Program Evaluation of the Least Developed Countries Fund (LDCF) 2020*. Global Environment Facility Independent Evaluation Office, Washington, D.C.

12. PANEL MEMBER UPDATES

64.   **Dr. Rosina Bierbaum** and **Dr. Thomas E. Lovejoy** were elected to the US National Academy of Sciences. An induction ceremony was held on 29 April 2022. Dr. Bierbaum was formally introduced to her colleagues in the Academy and signed the Registry of Membership. Dr. Lovejoy, former STAP Chair and Senior Advisor to the Chair, was posthumously inducted.

65.   Dr. Bierbaum serves as a member of the Steering Committee of the US National Academy of Sciences and the UK Royal Society joint Scientific Forum on "Bringing Nature into Decision Making" (16–17 June 2022). She will chair the session "Driving transformation: Scaling success and opening new frontiers", and the GEF CEO will deliver a keynote address on linking science to practice.

66.   The STAP Chair has supported various GEF activities, including giving a presentation at the first session of the LDCF/SCCF Programming Strategy and presiding over STAP's workshops on the blue economy and scenario planning. She also led STAP engagement in the GEF replenishment meetings. In addition, she published a paper on the review of GEF's nature-based solutions projects and the educational opportunities provided for graduate students learning about the GEF, co-authored by one of the graduate students.[21]

67.   **Dr. Mark Stafford Smith**, Senior Advisor to STAP Chair, co-chaired the development of Future Earth Australia's *National Strategy for Just Adaptation* and led an expert working group for Future Earth Australia and the Australian Academy of Sciences focused on extending the conventional agenda and reforming climate adaptation.[22]

68.   STAP's Panel Member for Climate Change Adaptation, **Dr. Edward Carr**, recently completed his work as lead author of the Intergovernmental Panel on Climate Change Working Group II contribution to the Sixth Assessment Report. He played a significant role during the report launch, participating in various media events.[23] Dr. Carr is also a lead author of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) Transformative Change Assessment[24] and has been named a member of the US National Academies Climate Security Roundtable.[25]

69.   **Dr. John Donaldson**, STAP's Panel Member for Biodiversity, is also involved in preparing an IPBES report. He is currently Co-Chair of the IPBES Assessment for the Sustainable Use of

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[21] Bierbaum, R., and Lazaroff, M., 2022. "From theory to practice: The student experience evaluating development projects focused on nature-based solutions". *Sustainability*, 14(9), 5722.
[22] https://www.futureearth.org.au/initiatives/securing-australias-future
[23] This include interviews with the *New York Times* and *Vox*, and an op-ed for the *Boston Globe*.
[24] https://ipbes.net/transformative-change
[25] https://www.nationalacademies.org/our-work/climate-security-roundtable

Wild Species.[26] The *Summary for Policy Makers* was completed in March 2022 for government review and will be finalized at the IPBES Plenary from 3 to 5 July 2022.

70.   STAP's Panel Member for Land Degradation, **Dr. Graciela Metternicht**, participated in the Conference of the Parties for the United Nations Convention on Desertification and Land Degradation in Abidjan, Côte d'Ivoire. On "GEF Day" Dr. Metternicht made a presentation, "From science to guidelines: Lessons and feedback from practice", based on an analysis of how GEF projects have applied STAP's *Guidelines for Land Degradation Neutrality*. And on "Science Day" she made a presentation, "Imagining a desirable future: Theory of change to shed light on pathways for land prosperity", based on STAP's *Theory of Change Primer*.

71.   **Dr. Saleem Ali**, STAP's Panel Member for Climate Change Mitigation, published a new book with Oxford University Press on understanding environmental systems, entitled *Earthly Order: How Natural Laws Define Human Life*. The book provides foundational knowledge on how natural and social systems science can inform planetary crises and recommends that humanity should seek to understand structures and patterns permeating all systems to develop sustainable solutions.[27]

72.   STAP's Panel Member for International Waters, **Dr. Blake Ratner**, recently joined the Board of ResNet. Funded by the Natural Sciences and Engineering Research Council of Canada, ResNet works with local industry, government, nongovernmental organizations, indigenous partners, and other stakeholders on the provision, modelling, and governance of multiple ecosystem services in Canada. Dr. Ratner's organization, Collaborating for Resilience, is also supporting a multi-stakeholder co-design process focused on catalysing systems entrepreneurship to sustain and restore community forests and rangelands in India.

73.   Dr. Ali and Dr. Ratner will be stepping down from their STAP roles in autumn 2022, following two very successful terms. Information on the recruitment process for their successors will be made available to Council members shortly.

74.   STAP looks forward to welcoming the new Panel Member for Chemicals and Waste to succeed Dr. Jamidu Katima, who had to step down due to health reasons. We hope the Council will have approved the new appointment by the June Council meeting and can meet the new panel member then.

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[26] https://ipbes.net/sustainable-use-wild-species-assessment
[27] Ali, S.H., 2022. *Earthly Order*. Oxford University Press.