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SCIENTIFIC AND TECHNICAL ADVISORY PANEL'S  
SUMMARY REPORT ON PROGRESS  
AND  
CHAIRPERSON'S BRIEFING TO COUNCIL

**(Prepared by the Scientific and Technical Advisory Panel)**

# Scientific and Technical Advisory Panel



The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility  
June 4, 2009

## Summary Report on Progress and Chairperson's Briefing to Council

### Introduction

1. This Report, which in Part A summarizes the work of the Panel and its Secretariat for the period from November 2008 to June 2009, supports the Chairperson's briefing to the June 2009 Council Meeting. Within the reporting period the majority of the Panel's time was spent within two main strategic areas, (i) advice on the development of the GEF-5 focal area strategies and (ii) advice on indicator options under the proposed System for Transparent Allocation of Resources (STAR). The remaining time was expended principally within the GEF Project Cycle and on advising agencies regarding science aspects of specific projects under implementation.
2. By November 2008, the fully reconstituted Panel also gained its full strength Secretariat resulting in four scientifically qualified professional grade staff able to draft specialized advice, under the direction of Panel Members, to design and manage support activities, including delivery of the STAP Work Program FY09 and design of the Program for FY10<sup>1</sup>.
3. The recent work of the Panel and its Secretariat, as described in its Work Program (FY09), and reported here, has become much more closely aligned than before to the operational and strategic needs of the GEF, and realigns the STAP within the GEF partnership. STAP has also supported the revitalized use of the GEF Task Forces within each focal area, through which STAP has tested and developed its strategic advice jointly with GEF Agencies and the GEF Secretariat, however, there remains a lack of a cross-focal area integrated mechanism for minimizing trade-offs, and this lack has been especially visible to Panel Members while working within the Technical Advisory Groups (TAGs) responsible for drafting GEF-5 focal area strategies.
4. Part B of the Report reflects on the recent work of STAP and identifies areas of GEF operations where STAP considers that there are opportunities to increase Global Environmental Benefits, pay attention to climate resilience, employ appropriately cross-focal approaches and increase the effectiveness of GEF actions.

### Section A. Progress Report

#### Project Cycle

5. The Scientific and Technical Advisory Panel's Project Cycle work within GEF-4 to date resulted in over 310 full size projects or programmatic approaches being screened within 10 Work Programs of which over 120 were screened within the Work Programs for November 2008, January and June 2009. The majority of this work was achieved directly by Panel Members and Secretariat staff working as teams, with the advantage that the Council's appointed scientific advisors are directly involved in advising on the portfolios of projects, instead of indirectly, via the Roster, as was previously the case. Within the GEF-4 cohort of projects evidence is accumulating that agencies are taking STAP advice into account when developing final project documents; this result was assessed within the reporting period through review of STAP advice given at PIF stage to determine if this advice has been acted on within the full project brief.

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<sup>1</sup> GEF/C.35/Inf.11

6. Concerns remain within the GEF partnership about the balance between the required minimum size of the PIF and the need to improve efficiency and speed of the project cycle, STAP considers that the PIF is capable of only weakly conveying a clear scientific or economic rationale and statement of the expected global environmental benefits. Additionally, the scientific and technical relationship between program framework documents and their subordinate PIFs remains very weak.

### **GEF-5 focal area strategies**

7. The Science Vision for GEF-5 originally drafted as an output of the April 2008 STAP meeting and provided to the Council in November 2008<sup>2</sup>, was further developed by each Panel Member consulting with the best available experts, and which equipped STAP to work within the Technical Advisory Groups (TAGs) convened by the GEF Secretariat to draft GEF-5 focal area strategies.
8. Additional advice to the climate change TAGs was developed through two products: 'Climate Change Science and Technology Advice for GEF-5'<sup>3</sup> and 'REDD, Forest Conservation and Sustainable Forest Management: Options for GEF-5 (LULUCF, SFM to REDD)'<sup>4</sup>, through commissioned studies and workshops which held in March 2009.
9. The Panel participated in the Joint Meeting of the Technical Advisory Groups for the development of focal area strategies for GEF-5, April 16-17, 2009, in Washington, DC. This was intended to enable in-person discussion of the strategies and also enable cross-focal area working. STAP provided an introductory presentation to the meeting, which highlighted the need to respond to global challenges by emphasizing:
  - Linking delivery of global environmental benefits with sustainable development
  - Responding to science advice from Conventions
  - Utilizing synergies between global environmental benefits and being alert to trade-offs
  - Promoting demonstration and learning
  - Employing a risk management approach in the delivery of global environmental benefits
  - Remaining cost-effective and impactful using limited resources and carefully selected interventions
10. STAP acknowledges that with some few exceptions its advice is appropriately reflected in the Draft GEF-5 Focal Area Strategies<sup>5</sup>. STAP observes that the opportunities to enhance development of the strategies for GEF-5 through cross-focal area collaboration were constrained due to lack of time and lack of appreciation of the importance of cross-focal area synergies at the Joint TAGs meeting. Furthermore, STAP is concerned about the lack of clarity and consultation in the development of strategy for Global and Regional Exclusion funds.

### **Additional guidance**

11. Expert consultations to support strategic advice included an Ecosystem Carbon Scoping Workshop jointly with the Heinz Center in January 2009<sup>6</sup>, 'Measuring the Success of GEF Investments and Catalyzing Change through Experimental Project Design' (March, 2009)<sup>7</sup>, In addition to the consultations that have resulted in scientific advice to the GEF submitted through the GEF Secretariat, a guidance document on Payments for Environmental Services (PES) was also provided to agencies in December 2008 and is

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<sup>2</sup> GEF/C.34/Inf.14

at:[http://www.gefweb.org/uploadedFiles/Documents/Council\\_Documents\\_\\_\(PDF\\_DOC\)/GEF\\_C34/C.34.Inf.14%20STAP\\_ScienceVision.pdf](http://www.gefweb.org/uploadedFiles/Documents/Council_Documents__(PDF_DOC)/GEF_C34/C.34.Inf.14%20STAP_ScienceVision.pdf)

<sup>3</sup> [http://stapgef.unep.org/activities/technicalworkshops/CC\\_GEF5](http://stapgef.unep.org/activities/technicalworkshops/CC_GEF5)

<sup>4</sup> [http://stapgef.unep.org/activities/technicalworkshops/SFM\\_REDD](http://stapgef.unep.org/activities/technicalworkshops/SFM_REDD)

<sup>5</sup> GEF/R.5/Inf.3

<sup>6</sup> <http://stapgef.unep.org/activities/technicalworkshops/Recarbonization>

<sup>7</sup> <http://stapgef.unep.org/activities/technicalworkshops/MFA/ExpDesign>

provided to the Council as GEF/C.35/Inf.12. Further guidance documents in the final stages of review will inform GEF investments in:

- Experimental Project Design;
- Benefits and Trade-offs between Energy Conservation and Releases of Unintentionally Produced POPs (uPOPs);
- Biofuels, Climate Change and Biodiversity;
- Technology innovation / development chain or cycle; role for GEF
- Marine Protected Areas and generation of GEBs.

### **Resource Allocation Framework and System for Transparent Allocation of Resources**

12. The Resource Allocation Framework (RAF) Mid Term Review, conducted by the GEF Evaluation Office, was the entry point for the Panel's subsequent work on the RAF. In its response<sup>8</sup>, the Panel largely supported the findings of the MTR and suggested clarifications to improve understanding of analysis surrounding one of the two indexes used in the RAF, the GEF Benefits Index (GBI). In December 2008, with the GEF Secretariat, STAP jointly convened a workshop to explore the GBI for the International Waters focal area, and reviewed the full range of candidate datasets and indicators available from GEF partners.
13. STAP compiled its advice to the First Meeting for the Fifth Replenishment<sup>9</sup> in response to the GEF Secretariat's draft 'Options for a GEF-wide Resource Allocation Framework' and has consulted widely to develop further its advice on the options for the new System for Transparent Allocation of Resources (STAR). The Panel questioned how probable trade-offs would be addressed in creating a new allocation system and also asked about the linkage between the allocation system and delivery of GEBs, which in the Panel's opinion needs to be addressed. Subsequently, the Panel commented on a revised paper for the Second Meeting for the Fifth Replenishment, the GEF Secretariat paper 'Revised scenarios and options for a "System for Transparent Allocation of Resources" in GEF-5' (C35 GEF/R.5/Inf.4)
14. Although substantial improvements were made to the specific indicators proposed in the revised STAR paper, regarding focal area-based indicators for determining possible GEF Benefits Indices (GBIs), concerns remain and the Panel's advice to the GEF Secretariat is part of an ongoing dialogue, including commissioned work on improving the GBIs for biodiversity and climate change. However, regarding the international waters focal area, STAP welcomes the fact that in the revised paper, international waters is proposed to be provided again with a global allocation. This result reflects a specific scientific concern about the fact that obtaining global environmental benefits from work in the international waters focal area always involves more than one country, and therefore an assumption that every recipient country would share the same data sets and indicators applying to transboundary water management, for the purposes of resource allocation, appeared to STAP to be infeasible.

### **STAP interaction with relevant scientific and technical bodies**

15. In accordance with STAP's mandate, it was agreed at the September 2008 STAP meeting that GEF-related Multilateral Environmental Agreement Secretariats should be asked to mediate opportunities for the Science Panel to interact with science bodies of MEAs for the benefit of the GEF. This approach, which was also called for at the 34th GEF Council meeting (November 2008) led to meetings in February-March 2009, involving UNCBD, UNFCCC, UNCCD, Stockholm Convention, Basel Convention, and selected bodies involved in collaborative scientific guidance to the work of the GEF, resulting in a

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<sup>8</sup> STAP response to the MTR, [http://stapgef.unep.org/docs/Guidance/STAP\\_MTR\\_RAF.pdf](http://stapgef.unep.org/docs/Guidance/STAP_MTR_RAF.pdf)

<sup>9</sup> Panel Response to Options for a GEF-wide Resource Allocation Framework  
<http://stapgef.unep.org/docs/Guidance/RevGEFwideRAF.pdf>

work program that will ensure more closely aligned and complementary working between science bodies and the GEF.

16. STAP followed up this preliminary work by attending, at the invitation of UNCCD Secretariat, the Committee on Science and Technology (CST) Bureau meeting (CST 8) in Bonn, May 25-26, 2009, at which a Panel Member presented the status of the GEF's Land Degradation RBM-based indicator proposals, within the CST session on impact indicators. Further work has been identified in collaboration with the CST members.
17. Results of the STAP commissioned study on benefits and trade-offs between energy conservation and release of uPOPs were presented at the side event organized at the COP-4 meeting of the Stockholm Convention on May 6<sup>th</sup>, 2009.

### **STAP Work Program 2009-10 (FY10)**

18. STAP's proposed Work Program for FY10 is provided as an Information Paper (GEF/C.35/Inf.11), in which advisory work in each focal area agreed with the GEF Secretariat and GEF Agencies is identified, with the exception of the land degradation focal area, pending the arrival of the new Panel Member concerned. The need for the proposed Work Program was tested through partnership consultation within focal area Task Forces and also at the recent STAP meeting (Rome, April 28-30, 2009, see GEF/C.35/Inf.9). The STAP Work Program Information Paper also reviews the progress of the current Work Program that expires at the end of FY09.
19. In summary, 27 activities were originally approved in FY09, including 1 later cancelled within the climate change focal area, 2 long term corporate activities supporting the project cycle and availability of expert advice, and activities supporting implementation of 2 recently approved projects. 17 activities are completed or will complete within FY09 (by end June 2009), while 5 activities will continue into FY10 to complete within 2009, of which 2 were designed to continue from FY09 into FY10.

## **Section B. Reflections on past work and looking ahead**

### **Global Environmental Benefits**

20. STAP considers that the GEF is a unique mechanism for financing global environmental benefits, and that the potential to generate global environmental benefits should continue to be central to the selection and design of GEF projects. Care must be taken to distinguish such projects from sustainable development projects generally. There are a large number of national, bilateral and multi-lateral agencies and NGOs who have large programs to support sustainable development goals or projects. GEF with limited resources should prioritize projects which focus on delivering global environmental benefits. However, there is a need to ensure synergy of GEBs with sustainable developmental goals.
21. There is a need to maximize the delivery of multiple global environmental benefits from GEF and to reflect this in the strategic programming at the highest level. While there is reference to the need for an integrated approach in the proposed GEF Results Architecture<sup>10</sup>, this not sufficiently reflected in the individual focal area strategies and therefore does not facilitate the delivery of GEBs in an integrated way. Furthermore, the proposed GEF Strategic Goals are not adequately connected to each other or to any overarching goal or global intervention strategy. STAP is willing to assist the GEF to integrate Strategic Goals within a framework of maintaining and increasing natural capital.

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<sup>10</sup> GEF/R.5/14

## Climate Change Resilience

22. STAP recognizes the growing scientific evidence of climate change and its impacts on the global environment including the oceans and coasts. STAP advises that all GEF project designs should explicitly consider the risks that climate change poses to the project's long-term flows of global environmental benefits, including carbon sequestration. Projects in all focal areas must be made more resilient in the face of a changing climate through considering the likely impacts of climate variability and change. The Panel welcomes consideration of Environmental Vulnerability Index in the proposed STAR framework<sup>11</sup>, but notes that GEF-5 strategies do not adequately address environmental vulnerability, particularly vulnerability to climate change.
23. There is growing scientific evidence that Earth's life support systems are approaching thresholds or tipping points at which "a tiny perturbation can qualitatively alter the state or development of a system....". Among suggested tipping points we may face within next couple of years or decades are melting of Arctic sea-ice, collapse of the Indian summer monsoon, dieback of the Amazon rainforest and others<sup>12</sup>. STAP advises GEF to take a longer-term vision of building climate resilience of GEF programs and projects across all focal areas. Institutional barriers preventing support for climate adaptation activities in GEF Trust Fund projects should be removed. GEF should employ climate-resilient approach in its strategic programming.
24. STAP recognises the need for an "Operational Guidelines to incorporate and implement Mitigation – Adaptation synergy and to Climate-proof the GEF portfolio". STAP intends to develop such a Guidelines for all involved; implementation agencies, GEFSec and project developers. Furthermore, in preparation for the next GEF Assembly, STAP will commission a high-level scientific team that will analyze the resilience of GEF programs in the face of large-scale abrupt climate change impacts on the Earth's systems (water, ecosystems, food, coasts, health) and develop medium- to long-term policy recommendations on introducing evidence-based risk management for the GEF using a precautionary principle.

## Cross-Focal Area Operations

25. STAP advises that the added value of the GEF could be increased through attention to a whole landscape approach regarding natural resource management, chemicals life cycle management and which critically applies risk assessment to its proposed actions in order to maximise resilience (adaptation) to climate change while also investing in mitigation. At the same time, the GEF focal area strategies must explicitly recognize that investments in one focal area can have negative impacts on the objectives of other focal areas, and that objectives in different focal areas are frequently best achieved jointly rather than separately.
26. GEF promotes an integrated approach to natural resource management and linkages between focal areas. However, cross-focal area integration has recognized benefits/synergies, but also important trade-offs that are context-specific. STAP initiated the work on a conceptual design tool for exploiting interlinkages between the focal areas of the GEF<sup>13</sup> back in 2004. Since that time substantial evidence inside and outside the GEF has been accumulated. More progress has been achieved in capturing synergies between focal areas such as the introduction of the Sustainable Forest Management Program and promotion of Sound Chemicals Management in GEF-4 rather than avoiding trade-offs. Notable examples of trade-offs include promotion of compact fluorescent lighting in the absence of mercury disposal capacity, promotion of hydroenergy in drought-prone areas, while monoculture plantations raised to sequester carbon will be vulnerable to climate change (through increased pest, fire etc resulting from climate change, compared to e.g. mixed species silviculture). No attempt has been made to assess the economics of these trade-offs.
27. Cross-focal initiatives could be promoted when complementarities or synergies exist. Broadly speaking, complementarities exist when two or more phenomena reinforce each other. In the context of the GEF portfolio, complementarity refers to a situation, for example, where including a carbon sequestration

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<sup>11</sup> GEF/R.5/Inf.4

<sup>12</sup> Lenton TM, Held H, Kriegler E, Hall JW, Lucht W, Rahmstorf S, Schellnhuber HJ. Tipping elements in the Earth's climate system. Proc Natl Acad Sci U S A. 2008 Feb 12;105(6):1786-93. Epub 2008 Feb 7.

<sup>13</sup> GEF/C.24/Inf.10

objective in a biodiversity project increases the productivity of the invested funds in achieving biodiversity objectives, and vice-versa (in a more strict definition, the mutual reinforcement is dynamic and thus leads to chain reactions where reinforcement continues over time, perhaps at a decreasing rate).

28. In conclusion GEF operations should take cross-focal area relationships into account and, when appropriate, ensure that relationships among focal area objectives are acted upon through cross-focal area coordination and investments to derive multiple Global Environmental Benefits in a cost-effective way and as far as possible avoiding trade-offs.
29. STAP recognises the need for “Operational Guidelines to identify and promote effective cross-focal area GEF projects”. The guidelines should provide approaches and methods to identify and quantify different GEBs from different activities. STAP intends to develop such Guidelines for all involved; implementation agencies, GEF Secretariat and project developers.

### **Implementation science**

30. STAP notes the plethora of recommendations within GEF programs and projects for actions or interventions intended to generate global environmental benefits. It also notes the dearth of evidence about the effectiveness of many of these recommended actions, as well of our poor understanding about the conditions and designs under which these actions have the greatest potential to be effective.
31. The Millennium Ecosystem Assessment concluded in 2005 that “few well-designed empirical analyses assess even the most common... conservation measures” for ecosystems and biodiversity<sup>14</sup>. Others have made similar conclusions for some measures used in energy consumption and pollution control. This paucity of evidence substantially constrains the ability of the GEF and other environmental organizations to catalyze large-scale change.
32. There is evidence in other fields that such evidence can increase donor confidence and be a catalyst for funding. For example, HIV/AIDS funding increased from \$485 million in 1998 to \$10 billion in 2007. According to the journal *Science*, one reason stands out - the clear and credible empirical evidence from well-designed field trials that showed anti-HIV drugs save adults' and children's lives .
33. As a global environmental leader, the GEF has an opportunity to contribute to building the evidence base for environmental interventions by encouraging the application of implementation science in its project portfolio. Implementation science uses a quantitative scientific framework to design projects with the explicit intention of creating generalizable knowledge about program effectiveness that can be applied across settings and contexts. The results from these efforts will contribute to strengthening GEF's capacity to deliver on its own mandate and the broader global public good of enhanced knowledge to catalyze change in environmental practice.
34. STAP's guidance document on Payments for Environmental Services (GEF/C.35/Inf.12) included a review of the evidence for PES effectiveness. For example, of five studies examining Costa Rica's PES program, three found no changes in forest cover and two found only small changes (<2% of forest area). In this case, the absence of substantial effects on deforestation was partially due to poor administrative targeting and adverse self-selection. In other words, because of the way the PES system was designed, the payments were directed towards landholders that had little incentive to convert forests to crop land and were unlikely to have done so even without a PES contract. STAP's guidance on PES is intended to increase the likelihood that GEF investments will have an impact, or at least be designed in such a way that they contribute to the evidence for PES effectiveness, where such designs are feasible.
35. STAP recommends that the GEF acknowledge the strategic need for implementation science in its project portfolio, through identification of learning objectives and project design that explicitly generate scientifically credible knowledge about the way in which programs most effectively achieve environmental impacts.

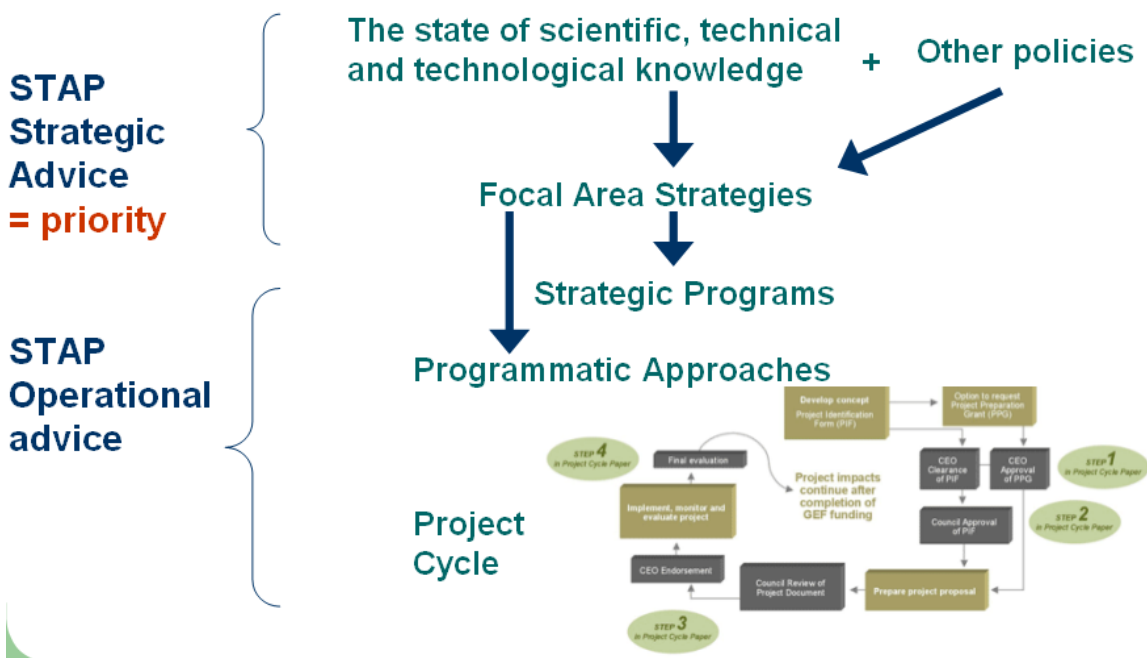
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<sup>14</sup> *Science* 25 July 2008: Vol. 321. no. 5888, pp. 512 - 519

## Role of STAP in the GEF

36. STAP is an impartial and independent advisor on science and technology to the GEF Council, GEF Agencies and the GEF Secretariat. In accordance with its mandate and terms of reference STAP provides objective, strategic scientific and technical advice on GEF policies, operational strategies, programs and on projects and programmatic approaches. STAP reaffirms the importance of providing impartial science and technology advice to the GEF using a partnership and consultation approach with GEF Agencies, scientific and technical subsidiary bodies of MEAs, external international science advisory groups and other partners involved in science and technology-related assessments.
37. There has been a longstanding debate about the balance between the use of STAP's time on operationally relevant advice compared to strategic advice, and although improved, this balance could be re-examined. Figure 1 illustrates STAP's perception of its role, which has been adapted to the GEF-4 project cycle, and which partially responds to the findings of OPS3 which stated that: "...Recognizing the important role of the STAP as a scientific advisory body to the GEF Council, the Participants in the Third Replenishment of the GEF Trust Fund recommended that its ability to fulfill its strategic advice functions be strengthened. The Participants identified needs to "(1) clarify and focus STAP's role in project development and review; (2) better define its role in the M&E activities of the GEF; and (3) strengthen the involvement of regional and national level scientific expertise in project development and design" (GEF/R.3/38. 2000. "Third Replenishment Agreement." October 2000)"

Figure 1. STAP Intervention strategy



38. STAP reforms approved by the Council in June 2007 implemented necessary changes to enable a much more upstream approach to the project cycle and more importantly encouraged Panel Members to spend more time on strategic matters through delegation of many operational advisory duties to the STAP Secretariat. However, partly due to the legacy of OPS3-related perceptions amongst partners that STAP was insufficiently equipped to provide strategic advice, there have been instances during GEF-4 and in its work towards GEF-5 where STAP's advisory role has not been clearly delineated compared to that of the GEF Secretariat, particularly regarding the coordination of scientific and technical advice to be made available for the drafting of focal area strategies.
39. STAP's position is that as an independent scientific and technical advisor to the GEF that it is best placed amongst the GEF partners to provide a platform for the formulation of the scientific and technical evidence to inform strategies across the focal areas, and to host expertise advising on the evidence base and criteria to be used for periodic adjustment and replenishment of GEF resources. This platform



hosting role complements expertise provided by evaluators and operational specialists to arrive at well grounded programming documents.

40. With recent and much increased effort by STAP to better fulfil its mandate to engage with science bodies of Conventions and to synthesize findings from assessments and other high profile sources, demonstrating that post-OPS3 changes are taking effect, STAP recommends that its Terms of Reference should be reviewed to re-position STAP within a well defined strategic role, backed by a clear policy to clarify responsibilities and expectations, to be provided to the Council for consideration at its next meeting.
41. STAP notes that the need for such a review is strengthened because a range of governance arrangements are being discussed in the context of the GEF-5 replenishment and these will have implications for the scientific and technical basis of projects, programs, focal area strategies and focal area clusters. Some proposals could result in further fragmentation of program development without necessarily achieving commensurate increases in global environmental or national benefits. The panel welcomes close engagement and consultation in the development of alternative arrangements, if any are deemed necessary by the Council, to ensure that GEF-5 is underpinned by the best available scientific and technical advice.

### **GEF Science Conference**

42. STAP in its role as the pro-active convenor to identify new developments in scientific, technological and economic arenas for the benefit of the entire GEF partnership, recognizes the need to open as wide as possible the advisory 'window' to enable the most inclusive acquisition of scientific and technical advice, and to broaden the sourcing of the scientific and technical advice to the GEF. GEF as a unique partnership mechanism consists of many agencies with expertise and extensive external networks well connected to science that, if well captured, can significantly enrich the innovative role of GEF while increasing its potential for sustainability of impact. Examples of new emerging issues include, Ocean Acidification, Black Carbon, next generation biofuels, Biochar, etc.
43. Through its regular meetings, STAP provides a platform for GEF partnership collaboration over science and technology; however, STAP proposes to convene a periodic GEF Science Conference to augment its regular meetings and will provide a proposal for consideration by the Council at its next meeting.