Scientific and Technical Advisory Panel

The Scientific and Technical Advisory Panel, administered by UNEP, advises the Global Environment Facility
(Version 5)

STAP Scientific and Technical screening of the Project Identification Form (PIF)

Date of screening: May 05, 2015 Screener: Guadalupe Duron

Panel member validation by: Annette Cowie
Consultant(s):

I. PIF Information *(Copied from the PIF)*
FULL SIZE PROJECT GEF TRUST FUND
GEF PROJECT ID: 9070
PROJECT DURATION : 5
COUNTRIES : Regional (Burkina Faso, Burundi, Ethiopia, Ghana, Kenya, Malawi, Niger, Nigeria, Senegal, Swaziland, Tanzania, Uganda)
PROJECT TITLE: Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa - An Integrated Approach (IAP-PROGRAM)
GEF AGENCIES: IFAD, UNEP and FAO
OTHER EXECUTING PARTNERS:
GEF FOCAL AREA: Multi Focal Area

II. STAP Advisory Response *(see table below for explanation)*

Based on this PIF screening, STAP's advisory response to the GEF Secretariat and GEF Agency(ies):
Minor issues to be considered during project design

III. Further guidance from STAP

STAP welcomes the integrated approach on "Fostering Sustainability and Resilience for Food Security in Sub-Saharan Africa". STAP is pleased to see the program components focused on strengthening institutional frameworks; scaling-up of integrated approaches; and, monitoring and assessment of ecosystem services, environmental benefits and resilience. In this regard, STAP appreciates the project's aim to address the drivers of land degradation through multi-stakeholder platforms and integrated methods to bring about global environmental benefits.

STAP welcomes the opportunity to serve on the program's technical committee to continue contributing to this initiative. STAP looks forward to receiving further details on the composition and responsibilities of the committee in due course. Additionally, STAP and the Commonwealth Scientific and Industrial Research Organisation (CSIRO) welcome the opportunity to work with the GEF agencies and countries to maintain, or improve, resilience through the application of the Resilience, Adaptation Transformation Assessment (RATA) framework. In the upcoming months, STAP and CSIRO will develop guidelines for implementing the resilience framework to assist project developers with an assessment of resilience during the project design. (Refer to the Report on the Resilience, Adaptation Transformation Assessment Framework by O'Connell, D. et al (2015) â€“ http://www.stapgef.org/the-resilience-adaptation-and-transformation-assessment-framework/)

STAP also is willing to connect the project developers to its networks on remote sensing to assist with the analysis of land cover (one of the project's expected global environmental benefits), and land degradation mapping. STAP's network includes the National Aeronautics and Space Administration (NASA), European Space Agency (ESA), and the European Commission's Joint Research Centre (JRC) â€“ all of which are qualified to advise and assist the GEF Agencies and countries with monitoring the program's and individual project's progress on land cover using trends in Normalized Difference Vegetation Index, and other methods or derived products. Thus, STAP looks forward to connecting the GEF to these bodies as well as to the science community of the United Nations Convention to Combat Desertification (UNCCD) to support the program's information needs, learning and knowledge base.

As the individual country projects are developed, STAP recommends for the project developers to address the following aspects in the proposals to strengthen their validity and applicability:

1. Successful implementation of this integrated approach will require a cross-disciplinary analysis and new frameworks that address lesser-known issues relevant to sustainability and food security, notably resilience. STAP recommends the use of the RATA framework as a tool that can inform and link the three program components and strengthen the project's theory of change to bring about global environmental benefits. The RATA framework is based on an iterative multi-stakeholder analysis that builds and maintains the resilience of desirable social-ecological systems through implementation pathways that empower decision makers to plan, and adaptively implement, initiatives in the context of uncertainty, plural values, and conflicting interests. The RATA framework is, thus, an effective tool for strengthening institutional frameworks on resilience and sustainability (Component 1); scaling up integrated approaches through the application of meta-indicators on coverage and quality (Component 2); and relevant to monitoring and assessing the resilience of agro-ecosystems (Component 3). By applying a procedure that defines the scope and scale of the system, identifies the drivers and controlling variables influencing the ecosystem functions, and describes the possible intervention options to maintain, or increase, the resilience of the system â€“ the program is well-placed to pilot and standardize resilience assessments in the GEF.

As identified in the program framework document, the RATA framework provides a valuable approach for monitoring and assessing (Component 3) the resilience of agro-ecosystems. It provides a scientific rationale for selecting resilience indicators, based on principles from natural and social sciences, to assess and monitor the resilience of social-ecological systems, and has the capacity to provide an aggregated assessment, applying meta-indicators on coverage and quality of the sub-assessments. Furthermore, the RATA approach is closely aligned with the GEF's Independent Evaluation Office's theory of change, embodying the principles of: sustaining interventions through clear implementation structures and institutional frameworks defined by the project stakeholders; mainstreaming information, lessons and other aspects of the project/initiative through a broad stakeholder analysis; replication of an intervention at a proper scale; and scaling up initiatives at a larger scale (See OPS 5 final report "At the crossroads for higher impact" for further information on the principles underlying the theory of change).

2. The program aims to foster sustainability and resilience for food security in sub-Saharan Africa. STAP believes it is important to consider and adopt consistent definitions on resilience and sustainability in the projects as these concepts are often confused in their application. The RATA framework provides a thorough description of resilience (including the associated concepts of adaptation and transformation) and the relationships between resilience concepts and sustainability. STAP recommends using these terms as defined in the RATA technical report (O'Connell, D. et al, 2015), which is strongly based on resilience theory.

3. As previously stated, the three components are linked in important ways. To demonstrate these important linkages, STAP recommends for the project developers to detail further the following aspects:

a. Describe the system. This includes addressing the following aspects:

i. define the boundaries of the agro-ecosystem, including the biophysical and social factors;

ii. describe the values that communities expect to get from the system (e.g. crops), and the drivers that affect, or might influence, these valued system properties (e.g. climate change);

iii. define the governance levels (e.g. informal and formal arrangements); and,

iv. describe how the agro-ecosystem functions (e.g. describe the livelihood strategies and variables that control the system's outputs they value, for example grass cover, healthy soils).

Steps (i) through (iv) should be synthesized to arrive at a conceptual model that characterizes the agro-ecosystem, and that is based on a shared understanding between stakeholders. STAP wishes to emphasize the importance of undertaking this analysis during the early design of the projects in order to assess effectively the resilience of agro-ecosystems, and the appropriate interventions to improve resilience.

b. How will local knowledge and scientific knowledge be combined so they are mutually reinforcing in describing, monitoring, and assessing land degradation and environmental changes (e.g. climate risks) in ways that are pertinent to a diversity of stakeholders?

c. What are the factors that are likely to influence the adoption of a technology (e.g. conservation agriculture, agro-biodiversity, integrated management of mixed crop and livestock systems) across a wide spatial area? Some factors to consider include labor, cost of introducing or maintaining the technology, local and cultural factors.

These questions will allow for a strengthened inter-disciplinary approach and use of "hybrid-knowledge" for improving agricultural and agro-pastoral management. The application of innovative methodological approaches, such as hybrid-knowledge, can strengthen land management institutions, and present greater opportunities for small-holders to adopt, or adapt, sustainable land management technologies. The project developers may wish to refer to the following resource on developing multi-stakeholder monitoring and assessment of land degradation. (Stringer, L.C. et al. "Participatory evaluation of monitoring and modeling of sustainable land management technologies in areas prone to land degradation". Environmental Management (2014) 54: 1022-1042; Reed, M. et al, "Integrating local and scientific knowledge for adaptation to land degradation: Kalahari rangeland management options". Land Degradation & Development (2006) DOI: 10.1002/ldr.777; Barrios, E. et al. "InPaC-S: Participatory Knowledge Integration on Indicators of Soil Quality â€“ Methodological Guide". World Agroforestry Centre (2012))

4. In its report to the GEF Assembly, "Delivery Global Environmental Benefits for Sustainable Development" (http://www.stapgef.org/delivering-global-environmental-benefits-for-sustainable-development-report-to-the-5th-gef-assembly/), STAP states that opportunities for achieving food security and improving livelihoods can be achieved, while lessening the impacts of global environmental challenges, by developing an approach that includes food supply commodity chains and which relies on sustainable land management. STAP also notes in its Assembly report that some of the elements in the program are well known and have long been implemented (e.g. soil and water conservation technologies); thereby, STAP encourages learning from previous experiences and for this learning to be systematized across the countries. In this regard, component 3 (integrated, open access data and information systems) will be an important knowledge management tool which STAP encourages to be developed fully in each of the individual projects.

5. In its Assembly report, STAP encourages the GEF to consider targeted research to fulfill the desired outcomes of the program, which are multi-faceted and complex. Research issues that STAP believes need addressing through the program include:

a. Sustainable intensification to optimize efficiency in land use. Sustainable intensification could support increased resilience of ecosystem services while enhancing food production. Estimates indicate a 100-110% increase in crop demand between 2005 and 2050, and suggest the impacts on the environment will depend on how this demand is met. Meeting the demand through agricultural intensification could ensure that yields are improved substantially and inputs are more efficiently used. In the absence of sustainable intensification it is likely that 1 billion hectares of land will be cleared globally by 2050 releasing approximately 3 Gt greenhouse gas emissions CO2-C-eq. per year.
(Smith, P. 2013. Delivering food security without increasing pressure on land. Global Food Security 2: 18-23. Vermuelen, S.J. et al. "Options for support to agriculture and food security under climate change". Environmental Science & Policy (2012) 15:136-144. FAO Twenty-second Session 2010. "Sustainable Crop Production Intensification Through an Ecosystem Approach and An Enabling Environment: Capturing Efficiency Through Ecosystem Services and Management". Available at: http://www.fao.org/docrep/meeting/018/k8079e01.pdf)

b. Drawing from the application of the RATA, resilience assessments can be strengthened in the GEF. These assessments can in turn contribute to generating further understanding of the application of resilience concepts at the field level, and learning on scaling-up actions to the sub-national and national levels. This learning and knowledge will inform measuring and monitoring of the resilience of GEF interventions, and address an important gap linked to the sustainability of GEF investments.

Contributing further to the learning and knowledge between sustainable intensification, food security and resilience of agro-ecosystems, will assist the GEF better target interventions on land management that cut across domains, and have multiple impact on land use and land-use change and forestry, biodiversity conservation, and climate change mitigation and adaptation. Additionally, developing and standardizing resilience assessments of social-ecological systems in GEF projects will strengthen the GEF's contributions to the global environment while reinforcing actions on sustainable development. STAP is happy to engage further with the Agencies and countries in the development of these targeted research activities.

6. For component 1, STAP recommends conducting a stakeholder analysis to identify common objectives across sectors and scales and to strengthen coordination. Natural resource management often includes a diverse group of stakeholders, often with conflicting interests. Conducting a stakeholder analysis will facilitate the learning, sharing and validation of the situation and challenges that need to be addressed in order to reach a consensus. The project developers may wish to consult the following paper for methods on stakeholder analysis: Reed, M. et al. "Who's in and why? A typology of stakeholder analysis methods for natural resource management", Environmental Management 90 (2009) 1933â€“1949.

7. STAP welcomes large-scale transformational change by scaling-up soil and water conservation management, diversified production systems, and mixed crop-livestock systems through component 2. Literature shows that scaling-up strategies need to be strengthened in the design of projects, so their implementation is better targeted across scales and diverse groups of stakeholders. Refer to the following source for further information on scaling-up approaches: Gundel, S. et al "Scaling-up strategies for research in natural resource management. (2001). Department for International Development, United Kingdom.

As countries and the GEF Agencies conceptualize and implement their projects, STAP recommends, therefore, addressing the following points:

a. identify monitoring and evaluation methods to measure the scaling-up impact and process
b. determine the cost-effectiveness of scaling-up
c. detail how partnerships, mechanisms for policy dialogue and uptake, and effective communication between multi-stakeholders will be developed
d. define how cross-sectoral learning will be encouraged and achieved

Addressing these issues will assist in developing pathways to scaling-up. For further details on these issues, please refer to Gundel S (2001).

8. Under risks, STAP suggests adding the challenges of scaling up technologies and practices, and how the project intends to reduce this risk.

STAP is pleased to engage further with the GEF to address these issues during the design of the projects, or to provide guidance on other technical aspects that arise during the development of the projects.

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Concur	In cases where STAP is satisfied with the scientific and technical quality of the proposal, a simple "Concur" response will be provided; the STAP may flag specific issues that should be pursued rigorously as the proposal is developed into a full project document. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design prior to submission for CEO endorsement.
2. Minor issues to be considered during project design	STAP has identified specific scientific /technical suggestions or opportunities that should be discussed with the project proponent as early as possible during development of the project brief. The proponent may wish to: (i) Open a dialogue with STAP regarding the technical and/or scientific issues raised. (ii) Set a review point at an early stage during project development, and possibly agreeing to terms of reference for an independent expert to be appointed to conduct this review. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.
3. Major issues to be considered during project design	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical methodological issues, barriers, or omissions in the project concept. If STAP provides this advisory response, a full explanation would also be provided. The proponent is strongly encouraged to: (i) Open a dialogue with STAP regarding the technical and/or scientific issues raised; (ii) Set a review point at an early stage during project development including an independent expert as required. The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP's concerns. The proponent should provide a report of the action agreed and taken, at the time of submission of the full project brief for CEO endorsement.