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: February 25, 2013 Screener: Lev Neretin

Panel member validation by: Ralph E. Sims
Consultant(s):

I. PIF Information *(Copied from the PIF)*
FULL SIZE PROJECT GEF TRUST FUND
GEF PROJECT ID: 5121
PROJECT DURATION : 4
COUNTRIES : China
PROJECT TITLE: Energy Conservation, Greenhouse Gas Mitigation and Soil Carbon Sequestration in Staple Crop Production
GEF AGENCIES: World Bank
OTHER EXECUTING PARTNERS:
GEF FOCAL AREA: Climate Change

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 revision required**

III. Further guidance from STAP

This is a commendable project to improve cropping agricultural practices to simultaneously reduce GHG emissions by better husbandry methods. However, since it is based on the interactions of soils, nutrients, water and plants, determining changes through MRV could be very complex. STAP has the following comments to be considered during project preparation:

1. The key challenge for this project is to ensure crop yields (productivity) do not decline as a result of introducing any new management practices to reduce GHG emissions. Ideally improving soil carbon and moisture levels would also give increased crop yields, but this would need careful monitoring. The challenge is that it can take several years before trends become evident - for example as a result of weed control changes as a result of introducing new crop rotations; or building up soil organic matter content, partly as a result of increased worm activity linked with less soil tillage. The period of the project of 48 months seems fairly short and short term indicators may be of relatively little value since benefits could become evident only after a longer term. In this context project proponents are recommended to carefully consider MRV indicators and overall approach to monitoring and evaluation activities.

2. PIF assumes there is already a strong background of soil, irrigation and crop R&D in project locations (with their specific soils and climatic interactions) and results from local field trials can be used for providing recommendations. The baseline of current farming practices, soil organic matter and soil C levels, fertilizer use, average yields, irrigation practices ideally needs to be defined - but due to variations between one farm and the next, along with varying soil types and micro-climates this would be challenging. Reporting on project outcomes will depend largely on the success of defining this baseline for different locations and establishing monitoring systems for changes in utilization rates for N, water, chemicals etc with the aim to improve them by better farm practices and more closely monitored soil nutrient, C/N ratios and moisture levels to optimize crop growth.

3. Avoiding wasting irrigation water should be one aim, and encouraging farmers to apply fertilizers accurately at rates based on recent soil tests, another. This adds the challenge of training farmers to learn to calibrate their fertilizer application methods (machinery) so that the recommended rates are actually applied to the land. Similarly, the project would require substantial awareness raising informed by clear benefits of supporting C sequestration activities for farmers socio-economic benefits. It is not clear how these two challenges will be addressed by the project.

4. Regular soil testing should be a part of the techniques introduced for farmers top undertake, but this would also entail establishing test laboratories (if not already in place). STAP recommends considering providing support/upgrade for these testing facilities where unavailable.

5. Applying nitrous oxide inhibitors (such as dicyandiamide (DCD)) in artificial fertilizer mixes is not mentioned but could be warranted - though care with policies is needed as trace residues have recently been found in milk products.

6. Given strong focus of this project on agricultural systems, project proponents are advised to consider experiences and direct engagement by the UN FAO being specialists in this area, particularly in the project knowledge management component.

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Consent	STAP acknowledges that on scientific or technical grounds the concept has merit. However, STAP may state its views on the concept emphasizing any issues where the project could be improved. Follow up: The GEF Agency is invited to approach STAP for advice during the development of the project prior to submission of the final document for CEO endorsement.
2. Minor revision required.	STAP has identified specific scientific or technical challenges, omissions or opportunities that should be addressed by the project proponents during project development. Follow up: One or more options are open to STAP and the GEF Agency: (i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions. (ii) In its request for CEO endorsement, the GEF Agency will report on actions taken in response to STAP's recommended actions.
3. Major revision required	STAP has identified significant scientific or technical challenges or omissions in the PIF and recommends significant improvements to project design. Follow-up: (i) The Agency should request that the project undergo a STAP review prior to CEO endorsement, at a point in time when the particular scientific or technical issue is sufficiently developed to be reviewed, or as agreed between the Agency and STAP. (ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.