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: March 08, 2012 Screener: Douglas Taylor

Panel member validation by: Michael Anthony Stocking; Meryl Williams
Consultant(s): Douglas Taylor

I. PIF Information *(Copied from the PIF)*
FULL SIZE PROJECT GEF TRUST FUND
GEF PROJECT ID: 4632
PROJECT DURATION :
COUNTRIES : China
PROJECT TITLE: Conservation of Biodiversity and Sustainable Land Management in the Soda Saline-alkaline Wetlands Agro Pastoral Landscapes in the Western Area of the Jilin Province
GEF AGENCIES: FAO
OTHER EXECUTING PARTNERS: Water Resource Department of the Jilin Province
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 revision required**

III. Further guidance from STAP

The proposed project envisages an opportunity to use water diverted from a river for downstream flood defense reasons to restore upstream wetlands and associated floodplain grasslands in an area well known for its progressive salinization and soil degradation over several decades. The biodiversity and land degradation focal area objectives of the project are ambitious. They are however proposed within a baseline context that is poorly defined with regard to climatic and hydrological information. STAP regards the project therefore as poentially high risk yet with potential innovations that if well monitored could lead to a transferable model valid for the immediate region, as proposed by the proponents.

According to publications consulted by STAP the original floodplain wet grasslands, swamps and lakes in western Jilin Province were supported by a flood-recession hydrological regime of seasonal flows from the upstream catchment. Thus the wetland ecology originally developed through overland seasonal flooding which was reduced over many decades accompanied by soil degradation resulting from drainage works, channelization and agriculture. These land use changes also led to salt accumulation owing to the lack of seasonal flushing. In addition there is evidence of a long term cycle of catchment runoff variation (Lu, et al, 2007), which implies the need for resilience in water management planning to ensure adequate hydration.

STAP, while cautiously supportive of the project concept, advises that the following measures should be carefully considered during development of the full project brief, and that the proponents should not hesitate to consult STAP and its recommended expert sources during project preparation.

1. Water budgeting. No baseline sub-catchment water balance analysis has been referred to in the PIF so net water needs and likely future balances are not possible to assess at this stage of project development. Hydrological and soils baseline studies and monitoring will be essential and clear targets are needed against which to evaluate impact. Without such studies the proposed diversion of water cannot be properly quantified and could lead to a "lose-lose" scenario.

The PIF suggests that the Chagan Lake has largely been stabilized by supplementing existing flows with the former diversions of irrigation water via the adjacent filter wetland, however, it notes that the total water surface is still declining. It is not clear from the PIF whether the proposed additional diversion will compete with or be additional to flows to the Lake; this needs clarification.

More importantly, it will not be sufficient merely to raise water levels within degraded wetland, instead a series of relatively large water releases sustained over several years are likely to be required to flush accumulated salt from restored wet grassland and associated wetlands. Additionally consideration should be given to maintenance of a flood-recession regime thereafter, the result of which is likely to amplify the demands on water budgeting. Accordingly STAP advises that the project design should build in the necessary additional baseline surveys and modeling actions along with monitoring protocols and responsibilities to determine the best use of the available water and the impacts realistically achievable along with clearly specified targets and indicators.

2. Saline runoff and downstream management Experience gained in the Murray Darling Basin, Australia, suggests that significant salinization of runoff waters will accompany wetland rehabilitation which, depending upon the receiving river/channel flows available to dilute salt, may impact downstream uses for several years (see for example Jolly, et al. 2012). The proponents are advised to consider the experience of practitioners working in analogous saline affected systems particularly if the groundwater in the project area has become saline over recent decades.

3. The PIF suggests that for the downstream consideration of allowable minimum ecological flows in the Songhuajiang River that the Tennant method resulted in an assessed minimum flow of 20% of dry season average flow to the river. STAP notes that according to the environmental flows review conducted by Acreman and Dunbar (2004) and the IUCN "Flows" publication, the Tennant method is considered to have no ecological validity within eco-climatic regions outside the USA region within which the method was developed, therefore the proponents should consider alternative methods supported by monitoring.

4. Climate change. The PIF does not deal with climate change risk, which needs to be comprehensively addressed in the full project brief. At present the PIF does not show how the available water budget could be sustainable with the GEF intervention. For example, would the river from which water is to be diverted remain capable of providing such flows in the long term? What is the evidence for this? What would be the criteria put in place to determine wetland vs agricultural use of water and still maintain resilience to change in the future?

5. Tracking and monitoring impact. While the baseline conditions are reasonably well covered, the PIF makes only passing mention of tracking the progress and impact of the project through the careful choice of a small set of impact indicators relevant to biodiversity and land degradation. STAP would like to see this addressed in the full proposal, along with the methods for tracking and monitoring. Special attention should be paid to the global environmental benefits delivered by the SLM practices â€“ ideally these should relate to the UNCCD national reporting indicators, including changes in total system carbon consequent upon project investments. The LADA-WOCAT tools would also be appropriate to reporting on the performance of â€˜best practices' in this difficult biophysical environment.

References:

Acreman, M.C. and Dunbar, M.J. 2004. Defining environmental river flow requirements â€“ a review. Hydrology and Earth System Science. 8(5): 861876.

Dyson, M., Bergkamp, G. and Scanlon, J., (eds). 2008. Flow â€“ The essentials of environmental flows, 2nd Edition. Gland, Switzerland: IUCN. Reprint, Gland, Switzerland: IUCN.

Jolly ID, Holland KL, Rassam DW and Pickett T. 2012. Review of salt mobilisation from River Murray floodplains and wetlands. CSIRO: Water for a Healthy Country National Research Flagship. 33 pp.

Lu Xiaoning, Deng Wei, Zhang Shuqing. 2007. Multiple Time-scale Characteristics of Runoff Variations in Middle Reaches of Huolin River and Their Effects. Chinese Geographical Science 17(2) 143â€“150.

STAP advisory response	*Brief explanation of advisory response and action proposed*
1. Consent	STAP acknowledges that on scientific/technical grounds the concept has merit. However, STAP may state its views on the concept emphasising any issues that could be improved and the proponent is invited to approach STAP for advice at any time during the development of the project brief prior to submission for CEO endorsement.
2. Minor revision required.	STAP has identified specific scientific/technical suggestions or opportunities that should be discussed with the proponent as early as possible during development of the project brief. One or more options that remain open to STAP include: (i) Opening a dialogue between STAP and the proponent to clarify issues (ii) Setting a review point during early stage project development and agreeing 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 revision required	STAP proposes significant improvements or has concerns on the grounds of specified major scientific/technical omissions in the concept. If STAP provides this advisory response, a full explanation would also be provided. Normally, a STAP approved review will be mandatory prior to submission of the project brief for CEO endorsement. 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.