

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 12, 2017
Screener: Guadalupe Duron
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Consultant(s):

I. PIF Information *(Copied from the PIF)*

FULL-SIZED PROJECT	GEF TRUST FUND
GEF PROJECT ID:	9745
PROJECT DURATION:	4
COUNTRIES:	Iraq
PROJECT TITLE:	Sustainable Land Management for Improved Livelihoods in Degraded Areas of Iraq
GEF AGENCIES:	FAO
OTHER EXECUTING PARTNERS:	Ministry of Health and Environment
GEF FOCAL AREA:	Land Degradation

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):
Major issues to be considered during project design

III. Further guidance from STAP

STAP welcomes FAO's project "Sustainable Land Management for Improved Livelihoods in Degraded Areas of Iraq". The project seeks to improve management of the marshes of Iraq through conservation agriculture, and sustainable land management. STAP is pleased to see this project as it will contribute to the sustainability of the Iraqi marshes – an area of global importance that has experienced vast degradation. Below, STAP recommends how to strengthen the project. In particular, STAP would like FAO to consider further the coping mechanisms of conflict-affected populations to address risks in adopting new technologies, such as conservation agriculture. STAP also wants FAO to consider, potentially through an environmental assessment, what is required to reduce toxicity levels in the water so that agriculture and ecosystem services can be viable. A strategic approach based on systems understanding for restoring and managing the marshes is highly encouraged by STAP. STAP also believes the project needs to detail further the baseline, and define the logic of how conservation agriculture supports the restoration of marshland ecosystems.

To further strengthen the project during its design, STAP recommends addressing these points:

1. The project proponents need to decide whether this is a biodiversity project on marshland restoration, or a sustainable land management project (e.g. cropping systems in ex-marshes, or in restored marshes). The decision on whether to focus on biodiversity or sustainable land management should be made through an analysis of the current condition and likely trajectory of the social-ecological system under climate change; the needs and desirable futures identified by the stakeholders; and alternative viable options for this system. The proponents should then clearly state the current practices, the alternative scenario under the project, and the global environmental benefits it will deliver. This will strengthen the project logic. If this is a land degradation project, the proponents will need to amend the corporate result for land degradation in part 1 section F to state: "Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)".

2. For component 3, STAP believes conservation agriculture (which focuses on improved cropping practices) is incompatible with marshland restoration for biodiversity conservation, which is the stated goal of the project. Sustainable use of restored marshland ecosystems could involve reed harvesting, fishing, and possibly carefully managed grazing. STAP is concerned that the project is ill-conceived, as conservation agriculture is inappropriate as a measure for restoring marshlands. Therefore, STAP would like to see more detail of the specific sustainable uses proposed, and how they meet the project objective.

3. STAP commends the project for striving to address multiple and complex drivers of degradation affecting the Iraqi marshes. To strengthen the focus and potential success of the project, STAP believes the project is in need of a strategic approach, to guide the restoration and management of the marshes. This could be a watershed approach with a defined system boundary that accounts for the different land and water uses, habitat diversity, and livelihood needs of the population, allocating different areas for conservation and production objectives.

To assist the project proponents identify what are the main drivers and how best to tackle them, STAP proposes the application of the Resilience, Adaptation, Pathways and Transformation Assessment (RAPTA) Framework. Applying the RAPTA will assist the project proponents describe and assess the social-ecological system, including the problems affecting its sustainability and work with stakeholders to identify options to consider and devise pathways to improve the system's condition. The RAPTA guidelines can be downloaded at: <http://stapgef.org/rapta-guidelines>

4. STAP is pleased that the project will support Iraq in setting Land Degradation Neutrality (LDN) targets by generating data on land cover and land productivity. STAP encourages Iraq to take note of the LDN framework recently completed by the Science-Policy Interface of the UNCCD, which describes the scientific basis and principles for implementing LDN: <http://knowledge.unccd.int/knowledge-products-and-pillars/land-degradation-neutrality-ldn-conceptual-framework/spi-publication>

5. Once the target area is defined, STAP recommends detailing the socio-economic characteristics of the population. If climate data are available at the regional level, STAP also recommends adding this information to the project.

6. STAP would like to see the baseline and current practices defined more clearly. Currently, the baseline section largely focuses on describing the project.

7. In addition, the project proponents should detail further the biological and hydro-chemical characteristics of the marshes as this information may be useful for defining restoration activities. FAO may wish to look at this study for information that may be useful to assess the health of the marshes: Banat, et al. "Mineralogy and hydrochemical characteristics of the late marshes and swamps of Hor Al Hammar, Southern Iraq" *Journal of Arid Environments* (2006). 65(3):400-419. â€

8. It would be useful to add a map depicting the watershed area, the project area within this area, and the different land use types in the watershed. This should include a description of conventional agricultural land uses and management practices. This will provide a better visualization of the project area, and the spatial planning that is needed to restore and manage the marshes, and the challenges of improving the current system.

9. STAP is pleased that FAO will draw upon its experience in conservation agriculture for this project. The marshland is a particularly challenging environment, affected by salinization. Please provide a detailed description of the specific conservation agriculture practices that will be applied to meet the challenges of this environment, including the sustainable irrigation practices that the project will employ. Do the proposed conservation agriculture systems also include livestock?

10. The project description states that the marshes are shrinking due to climate change, and that climate change projections suggest rainfall will become more variable, and decrease. Is cropping viable in this changing climate? It would be valuable for FAO and the project proponents to think about the resilience of the proposed new farming and cropping systems. STAP suggests using the RAPTA (described above) to think about the stresses to the systems (e.g. climate change), and determine whether incremental adaptation is required, or whether more fundamental transformational change of the system is needed to achieve long-term sustainability.

11. The project proposes that certification of produce could offer a market advantage. STAP recommends providing further information and justification for this concept, detailing for what products, and under what scheme certification will be sought.

12. To encourage further learning, STAP recommends that FAO specifies how the project will contribute to advancing the knowledge of conservation agriculture in drylands. Impacts of conservation agriculture are site-specific. However, there also is a need to understand the general conditions under which conservation agriculture in drylands can achieve ecological and socio-economic benefits. Understanding better the impact of the specific conservation agriculture practices on soil carbon also would advance knowledge about this technology. FAO should consider these issues as it assesses and monitors the project's benefits. FAO may wish to refer to the following documents on conservation agriculture, and its impacts in drylands: 1) Kassam, A. et al. Field Crops Research 132 (2012) 7â€“17; 2) Johansen, C. et al. Field Crops Research 132 (2012) 18â€“32.

13. In addition, STAP recommends describing the risks and challenges associated with adopting conservation agriculture by the population in the target area, and how the project will address these to facilitate uptake. These challenges may be related to limited knowledge of conservation agricultural methods, lack of policy support, and financial constraints limiting the purchase of equipment. In addition, the population in the Iraqi marshes has been affected by conflict, as described in section 1.1. This hardship may influence the population's coping capacities to address risks associated with the introduction of conservation agriculture, and the adoption of other sustainable land management practices. In this regard, the project should consider more visibly the effects of armed conflict on the population in the marshes when defining further the interventions. FAO may wish to refer to this paper: Lewis, P. et al. (2013). "Effects of Armed Conflict on Health of Marsh Arabs in Southern Iraq". (2013). 381: 959-961.

14. Risks associated with improving agricultural systems on soils that are degraded by high salinity levels and contaminants should be defined along with how the project intends to ameliorate these risks. Currently, the project does not address how it will reduce levels of pollution in the marshes in order to make agriculture and ecosystem services viable for the target population. Therefore, STAP recommends that the project should add an activity on reducing pollution levels in the marshes. FAO may wish to look at this paper to inform the development of an activity on pollution reduction: Al-Gburi, H. et al. (2017). Environmental assessment of Al-Hammar Marsh, Southern Iraq. Heliyon 3(2017)e00256.

15. It is unclear whether the project will use remote sensing to monitor changes (e.g. water mass variations, vegetation cover) in the watershed. STAP recommends relying on remote sensing technologies to monitor changes in the project region. This technology is particularly relevant for Iraq, given that conflict has impacted river flow measurements in the Tigris and Euphrates, and taking measurements through field visits may be impractical. However, the validation of remote sensing information through field visits is highly encouraged if this is possible. FAO may wish to consider the following paper: Becker, R. "The Stalled Recovery of the Iraqi Marshes." Remote Sensing. (2014). 6. 1260-1274.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
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	<p>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:</p> <p>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised.</p> <p>(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.</p> <p>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.</p>

3. Major issues to be considered during project design	<p>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:</p> <p>(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.</p> <p>The GEF Secretariat may, based on this screening outcome, delay the proposal and refer the proposal back to the proponents with STAP's concerns.</p> <p>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.</p>
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