

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)

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Screeener: Veronique Morin

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

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

FULL SIZE PROJECT **SPECIAL CLIMATE CHANGE FUND**

GEF PROJECT ID: 9103

PROJECT DURATION : 4

COUNTRIES : Cambodia

PROJECT TITLE: Building Adaptive Capacity through the Scaling-up of Renewable Energy Technologies in Rural Cambodia (S-RET)

GEF AGENCIES: IFAD

OTHER EXECUTING PARTNERS: Ministry of Agriculture, Forestry and Fisheries

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):
Major issues to be considered during project design

III. Further guidance from STAP

The following is STAP's screen of IFAD's proposal "Building Adaptive Capacity through the Scaling-up of Renewable Energy Technologies in Rural Cambodia". The project aims to enhance adaptive capacity by supporting large-scale adoption of Renewable Energy Technologies (RET) in the rural development sector of Cambodia. STAP commends IFAD for the development of this proposal that seeks to simultaneously achieve adaptation and mitigation goals, and notes that RET's, in general, do have many features that are likely to be useful for climate-compatible development. That said, STAP believes that there are a number of issues that need to be considered carefully in the design of this project, and would be happy to engage further during the course of project development on the aspects indicated below.

(1) Promoting the uptake of RET to support (and build the resilience of) smallholder agriculture through installation of biodigesters, solar energy systems, and innovative RET systems. Technologies are outlined in the table (page 6) which shows some are commercially available now and others, such as the gasifier are at the demonstration stage. It is not clear why these specific technologies have been selected or on what criteria the selection was based.

An assessment of renewable energy resources is recommended in order to ascertain wind speeds, solar radiation levels, volumes of available biomass, seasonal changes etc. and their ability to meet energy demands. The "6 to 9 hours" of sunshine a day, for example, is good for the uptake of solar technologies but perhaps cloud cover is greater in some of the rural areas where PV installations are proposed, due to the influence of nearby mountain ranges. Therefore a more detailed assessment of resources is recommended, and ought to guide decisions regarding the appropriate RET's to be deployed.

Given that this project is intended to be supported through the "technology transfer" window (SCCF-B), it will be important to explain the way in which technology transfer is used as a modality. For example, will the project lead to enhanced domestic manufacturing capability? To what extent are the technologies likely to be localized? Will local manufacturers be involved?

Finally, it will be important to justify the proposition that wider adoption of distributed RET's is likely to enhance adaptive capacity of target communities. While the PIF does provide an overview of climate

vulnerabilities and risks in Cambodia (pages 3-4), a clearer statement of the specific climate risks that may be addressed by RET deployment would be helpful.

(2) Stimulating the scaling up of RET through policy making and resource allocation.

The problem statement, including projected climate change impacts in the study area, is very well described, as are the project components, expected outputs/outcomes and the adaptation and global environmental benefits. The case for increased adoption of RETs is made very clear, including: existing high energy costs, depletion of natural resources, and impacts on women's health and workload. There is little doubt that the UN "Sustainable Energy for All" programme closely applies to Cambodia and that RET's can make a difference.

Under the section "Potential roles for RETs" the table lists a range of 6 technological mitigation opportunities, but the cost effectiveness and the mitigation potential of each (in terms of \$/t CO2-eq avoided) is not presented. So how will the priorities for action be determined?

It states that the increased adoption of RETs will assist Cambodian households in reducing their vulnerability by increasing household incomes and assets, and assisting in building resilience to drought through the deployment of solar pumping for irrigation. This depends on the reliability of the source of water and whether or not it is "green" (i.e. renewable).

Sea level rise issues are quoted from the IPCC 4th Assessment Report (2007), but the 5th Assessment Report (working group 2) on Impacts, Adaptation and Vulnerability will provide more recent analysis.

The barriers to deployment of RE systems are clearly identified. But how can they best be overcome? Is it a purely financial decision to invest in renewable energy or can policy measures (such as feed-in-tariffs or RE certificates) help make a difference?

In contrast, the emphasis of the proposal seems to be on bio-digesters. This technology is well-proven but what are the feedstocks and how reliable are they throughout the year?

The baseline is well described, and the individual components appear to have been well thought out. The main contributor is the reduction in energy sources, and hence the projection of lower GHG emissions from fuelwood and kerosene substitution.

The claimed, 32,300 t CO2-eq avoided appears to be feasible, although how the fuelwood saving was assessed is not clear. The analysis does not assume the fuelwood is zero carbon (if the trees are regrown) since it is depleting the carbon stocks in the soil and forests, so this must be accounted for. In estimating GHG emissions, STAP recommends using the new Guidelines for GHG accounting and reporting for GEF projects to be released at the June 2015 GEF Council meeting, along with guidelines on measuring above and below ground carbon developed in the GEF-funded Carbon Benefits Project.

In addition to the main issues identified above, the following additional observations may also be considered during the development of the project:

- The full project proposal should provide additional information on how community needs and preferences will be determined and taken into account in the selection/prioritization of various RET technologies.
- Given the large amount of baseline projects that are already on-going, it would be valuable for the full project proposal to further elaborate on how the project will coordinate with existing initiatives. How will the additional deployment of RETs that the GEF funding is responsible for supporting be monitored and measured?
- Women have been identified as being particularly vulnerable due to their gender roles, which include collecting firewood (time lost) and using firewood and charcoal for cooking (suffer from respiratory diseases and eye infections as a result of exposure to smoke). STAP hopes the gender aspects will be further developed and specified in the full proposal.

<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. (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>