

# 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: October 30, 2017  
Screener: Douglas Taylor  
Panel member validation by: Ferenc Toth  
Consultant(s): Blake Ratner

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

FULL-SIZED PROJECT	GEF TRUST FUND
GEF PROJECT ID:	9601
PROJECT DURATION:	3
COUNTRIES:	Regional (Barbados, Belize, Colombia, Costa Rica, Cuba, Dominican Republic, Grenada, Guatemala, Guyana, Honduras, Jamaica, St. Kitts And Nevis, St. Lucia, Mexico, Panama, Suriname, Trinidad and Tobago, St. Vincent and Grenadines)
PROJECT TITLE:	CRew+: An Integrated Approach to Water and Wastewater Management Using Innovative Solutions and Promoting Financing Mechanisms in the Wider Caribbean Region
GEF AGENCIES:	UNEP and IADB
OTHER EXECUTING PARTNERS:	UNEP CAR/RCU, National Pilot Executing Agencies
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

1. The project seeks to build on the successful pilot project (GEF ID 3766) which focused on innovative financing of wastewater management, a summary of which is presented as Annex 1 of the PIF. The present proposal seeks to extend the predecessor project's work on financing mechanisms, but also aims to promote innovative small-scale technical solutions across the wider Caribbean Region. Overall, STAP agrees those are worthy objectives, particularly if applied at several sub-national scales, i.e. municipality, local community and individual households.

2. STAP's reading of the PIF however, has raised several questions about the science and technical issues involved in managing wastewater, which are further explored below. These questions relate to the feasibility and potential of wastewater treatment described in Component 3, and have led to STAP's advisory rating of Minor Issues to be considered. Accordingly, please address the points raised below to the satisfaction of STAP, by CEO endorsement stage.

3. STAP fully accepts that a major opportunity exists to protect freshwater supplies from pollution, regarding surface water or groundwater, and also to avoid pollution in all its forms from reaching the sea. The PIF uses the terms wastewater and treatment throughout; however, these can apply to a very wide range of conditions and scenarios. For example, wastewater can range in treatment challenge from 'grey' water arising from washing, through raw sewage and to effluent from pesticides use or worse. Equally, treatment can range from simple soil soakaways, through settlement ponds and wetland N stripping, through fully specified sewage treatment works capable of removing N, P, and some persistent organic pollutants. Thus the service standards applying to waste water treatment depend upon where the resulting discharge

ends up. If it is likely to enter rivers or the sea, a higher standard of effluent treatment is required (e.g. discharge to ecologically sensitive waters: P<1 mg/l, N<10mg/l, BoD<25mg/l, CoD<100mg/l, suspended solids<35mg/l), therefore demanding an infeasibly high standard from small scale household or small community wastewater treatment. Nowhere in the, already very lengthy, PIF does it state what the treatment objectives are with associated standards even in outline terms, thus 'innovative wastewater treatment' remains a mystery throughout. Please address this gap.

4. STAP has real concerns that if wastewater treatment results are considered only in terms of simplistic targets then very unrealistic expectations may result for informal wastewater treatment, cumulatively achieving very little improvement at watershed scale. Stripping out BoD, fecal coliforms and sediment can work in small-scale treatment works, but the ecologically active nutrients (N, P) simply pass through, together with undesirable persistent organic pollutants, if already present. Thus, the Component 3 rationale text provided in the PIF noting, "...at least 50% of the interventions will involve low-cost innovative technologies that have proven to be very effective in treatment and reuse..." is far too cryptic. What are these technologies, where is the published performance characteristics of these, and does the project really wish to risk endorsement of these for replication across the watersheds of multiple countries? At the very least this issue should be explicitly stated in the risks table.

5. The project objective calls for small-scale solutions and the emphasis of the project is on domestic water and wastewater management. Within the wider context of wastewater management it would be helpful to have estimated the contribution towards reducing the total pollutant load by targeting domestic wastewater improvement. What will be the likely outcome at watershed scale, given the other point source and especially diffuse pollution sources, of targeting domestic sources in terms of total loads of key indicator chemicals?

6. Cost-benefit analysis might be considered as part of a decision framework to select the appropriate technology at a given location (what are the marginal costs of removing additional types of pollutants vs the environmental harm that could be prevented, and how do these cost-benefit ratios compare among alternate technological solutions). Economies of scale play an obvious role: areas/communities with larger wastewater volumes are likely to justify more complex technologies capable of removing more types and larger amounts of pollutants. Institutional design considerations (including government, community, private sector commitment to ongoing maintenance of facilities) should also factor into the decision framework.

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Concur</b>	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.
<b>2. Minor issues to be considered during project design</b>	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: <ul style="list-style-type: none"> <li>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised.</li> <li>(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.</li> </ul> <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>
<b>3. Major issues to be considered during project design</b>	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: <ul style="list-style-type: none"> <li>(i) Open a dialogue with STAP regarding the technical and/or scientific issues raised;</li> <li>(ii) Set a review point at an early stage during project development including an independent expert as required.</li> </ul>

	<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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