

STAP guidelines for screening GEF projects

Part I: Project Information	Response
GEF ID	10883
Project Title	Co-management of climate extremes for agriculture resilience via innovative technologies for irrigation in São Tomé and Príncipe
Date of Screening	30 November 2021
STAP member screener	Ed Carr
STAP secretariat screener	Virginia Gorsevski
STAP Overall Assessment and Rating	<p>Minor</p> <p>STAP acknowledges the project “Co-management of climate extremes for agriculture resilience via innovative technologies for irrigation in São Tomé and Príncipe.”</p> <p>There is little doubt that STP is facing significant challenges in the agricultural sector that are compromising the well-being of farmers and the economy of the country. The PIF documents these challenges well. However, the PIF does not make a clear case that this is a project that will deliver adaptation benefits. The PIF notes that depending on the future climate scenario, precipitation trends could either deepen or potentially alleviate drought in dry periods of the year, when things are most stressed. However, the project and its interventions make no mention of this very wide range of outcomes, and how particular interventions would provide robust benefits across this range of possibilities. Indeed, the PIF seems oriented toward an RCP8.5 world, but this is an extreme emissions scenario that is highly unlikely to be realized. The RCP4.5 world seems discounted in this PIF even though it is much more likely to reflect reality in the future. This is critical to this project, as adaptation actions taken, for example, to alleviate drought stresses could prove ineffective or even maladaptive if the increased precipitation scenario is realized. Given the RCP8.5 scenario is unlikely, the project should be paying more attention to the outcomes under RCP4.5, focusing</p>

	<p>interventions on that scenario while perhaps considering how those interventions might function under an RCP8.5 world.</p> <p>The lack of connection between proposed interventions and the range of possible future climate situations in STP suggests that this is more of a well thought out agricultural development project than an adaptation project. Even the theory of change does not really have climate change as a root cause of the issues in STP – it is not even clear how climate change, even under the RCP8.5 scenario, would exacerbate existing challenges.</p> <p>STAP suggests that this PIF could be strengthened by carefully considering the adaptation rationale of this project, assessing the data already in the PIF with regard to future climate scenarios, and then consider how the range of scenarios might help/harm farmers and the wider economy to better connect specific challenges under these different scenarios to specific interventions and to assess the extent to which these interventions will yield robust, durable adaptation benefits across both scenarios.</p>	
Part I: Project Information B. Indicative Project Description Summary	What STAP looks for	Response
Project Objective	Is the objective clearly defined, and consistently related to the problem diagnosis?	The project's overall objective is to “promote innovative technologies and co-management of drought, flood, and water depletion for irrigation as a means to increase the resilience of the farming systems in Sao Tome.” While this objective is clear and relates to the problem diagnosis, the lack of mention of climate change leads one to believe that this aspect is tangential to the overall project and that the main focus is development oriented.
Project components	A brief description of the planned activities. Do these support the project’s objectives?	Yes, the planned activities (technologies, policy framework, capacity building) support the project’s objective.

Outcomes	<p>A description of the expected short-term and medium-term effects of an intervention.</p> <p>Do the planned outcomes encompass important adaptation benefits?</p>	See below.
	Are the global environmental benefits/adaptation benefits likely to be generated?	Adaptation benefits are possible but need to be more clearly articulated by drawing a clear linkage between climate change impacts and anticipated outcomes.
Outputs	<p>A description of the products and services which are expected to result from the project.</p> <p>Is the sum of the outputs likely to contribute to the outcomes?</p>	<p>Overall, if successful, the combined outputs will support each of the stated outcomes. However, it is unclear if these activities are happening simultaneously or sequentially. If the latter, then it would seem more logical that the hydrological research in Component 2 to help inform design and location of technologies occur at the beginning of the project.</p> <p>Related, the stated outcome for Component 2 includes ‘a supportive business model and incentive mechanism identified, designed and implemented.’ It seems unlikely that the technologies will be implemented without a long-term financing plan put into place at the outset. Lessons from previous projects indicate that they failed because the technologies were ‘one off’ and not sustainable. How will this project be different?</p>
Part II: Project justification	A simple narrative explaining the project’s logic, i.e. a theory of change.	
1. Project description. Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed (systems description)	Is the problem statement well-defined?	It is not. While the problem statement itself is clear enough (agricultural production in STP will be compromised by projected changes in the climate), the changes in the climate shown in the two model scenarios are contradictory. The lower emissions model of the two shows increases in precipitation, while the higher emissions model shows decreases. Depending on the scenario realized, agriculture could be vulnerable to seasonal flooding (lower scenario) or to drought (higher scenario). While the

		<p>project should be commended for using more than one climate model scenario, these are very contradictory and thus suggest the need for interventions that span these two possibilities to maximize the durability of project outcomes in an uncertain future.</p>
	<p>Are the barriers and threats well described, and substantiated by data and references?</p>	<p>The threats are reasonably well-described, with two caveats:</p> <ol style="list-style-type: none"> 1) As noted above, the threat varies widely depending on the scenario, but the project does not really comment on this. For example, under the RCP4.5 scenario rainfall in the <i>gravana</i> period increases...thus addressing, at least in part, what this PIF claims is the big adaptation challenge for agriculture. There is no discussion of this. 2) In either scenario, the connection between change (temp and/or precipitation change) and agriculture is not well-elaborated. There are assertions that these changes will impact agriculture, but these connections are both knowable and estimatable. <p>The barriers are clearly described, but they frame the adaptation challenge in a very technology-first manner which is contrary to contemporary understandings of the adaptation challenge. Adaptation is principally a human challenge: how do we create the conditions for behavioral change that might lead to the uptake of new technologies? This proposal does not seem particularly interested in or aware of existing farmer motivations and decisions, largely constructing farmers as lacking knowledge and skills. This approach to adaptation tends to result in projects that implement inappropriate interventions that are not taken up by their intended beneficiaries. STAP suggests that this project would benefit greatly from serious engagement with its farmer beneficiaries to</p>

		<p>understand what they are doing now and why to situate both the problems identified and their potential solutions in the needs of the intended beneficiaries.</p> <p>Another significant issue with the barriers discussion is the project's construction of root causes as lying in poverty, inequalities of various sorts, and access to resources and knowledge, but does not treat climate change as a root cause. There is no doubt the issues identified in the PIF are real, but they would be problems without climate change. What is unclear here is how this funding addresses an adaptation challenge, as opposed to addressing a poverty/inequality challenge. Poverty and inequality are issues in adaptation, but generally climate change exacerbates these issues – it is not the cause of poverty, but it makes poverty worse, etc. The project does not seem to articulate this relationship between adaptation and development clearly, and thus has challenges demonstrating additionality.</p>
	For multiple focal area projects: does the problem statement and analysis identify the drivers of environmental degradation which need to be addressed through multiple focal areas; and is the objective well-defined, and can it only be supported by integrating two, or more focal areas objectives or programs?	n/a
2) the baseline scenario or any associated baseline projects	Is the baseline identified clearly?	The baseline seems spread across both the description and baseline sections of the PIF. The baseline section largely talks about precipitation as a challenge. Flooding comes up in the earlier description. There is no discussion of the widely varying outcomes for precipitation, and therefore drought, under the two scenarios. Baseline projects are well-described, as are the institutional challenges around irrigation. However, the PIF fundamentally fails to make clear if irrigation is really needed as an adaptation, as opposed to an

		agricultural development intervention (i.e. needed regardless of climate change).
	Does it provide a feasible basis for quantifying the project's benefits?	No
	Is the baseline sufficiently robust to support the incremental (additional cost) reasoning for the project?	No – this is a concern with this PIF. There is a lot of baseline spread through the PIF with a lot of detail, but it all muddles development and adaptation work. As a result, additionality is difficult to identify here, making incremental cost reasoning difficult.
	For multiple focal area projects:	
	are the multiple baseline analyses presented (supported by data and references), and the multiple benefits specified, including the proposed indicators;	N/A
	are the lessons learned from similar or related past GEF and non-GEF interventions described; and	N/A
	how did these lessons inform the design of this project?	N/A
3) the proposed alternative scenario with a brief description of expected outcomes and components of the project	What is the theory of change?	The theory of change is difficult to discern, except by inferring from the activities and outcomes listed in the project. Effectively, the ToC is if farmers adopt climate adapted agricultural technology, they will have greater capacity to manage water, which in turn will improve their capacity for managing increasing climate risks and impacts, thus resulting in improved human well-being.
	What is the sequence of events (required or expected) that will lead to the desired outcomes?	See below.
	What is the set of linked activities, outputs, and outcomes to address the project's objectives?	Component 1: Reduce vulnerability and strengthen climate resilience of agricultural systems and livelihoods adopting innovative technologies Activities: <ul style="list-style-type: none"> • Construction and/or rehabilitation of surface water storage technologies such as ponds and tanks for rainwater harvesting in 7 communities, reducing the vulnerability to water scarcity of the crops grown by the inhabitants of the communities.

		<ul style="list-style-type: none"> • Adoption of soil moisture storage techniques using soil and water conservation measures implemented • Installation of small-scale off-grid PV pumps in farms with diverse characteristics to enhance access to water for irrigation • Installation of efficient irrigation technologies (irrigation kits) <p>Outcome: Technologies and solutions for water storage and irrigation piloted and deployed to reduce climate-related risks and enhance resilience of agricultural systems and livelihoods</p> <p>Component 2: Mainstream climate resilience of agricultural systems</p> <p>Activities:</p> <ul style="list-style-type: none"> • Research on hydrological modelling for the planning of the water storage and harvesting technologies • Preparation of guidelines and standards for the design and installation of the water storage and harvesting technologies • Organization of cross-sectoral structured dialogues to enhance national governance for climate resilient agricultural interventions and develop a road map to foster collaboration • Design of a National Promotion Program for replication and upscaling of the climate resilient agricultural practices and technologies <p>Outcome: Conducive implementation policy framework and supportive business model and incentive mechanism identified, designed and implemented</p>
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		<p>Component 3. Foster enabling conditions for effective and integrated climate change adaptation in the agricultural and water sectors</p> <ul style="list-style-type: none"> • Capacity strengthening of institutional staff from the water, agriculture and energy sector for improved climate change governance • Integrate climate change and sustainable water management solutions into the agricultural extension program to strengthen local capacity to address water-related climate risks • Establish/strengthen existing local leadership councils and/or Resource Users Association to facilitate stakeholder engagement and ownership of adaptation technologies • Enhance capacity of local communities to apply and maintain water storage and irrigation technologies and solutions <p>Outcome: Increased institutional and local capacities, including information and extension services to respond to climate change</p>
	<p>Are the mechanisms of change plausible, and is there a well-informed identification of the underlying assumptions?</p>	<p>To an extent: they are logical. However, the activities are often described in a superficial manner that makes it difficult to assess the plausibility of the mechanisms of change. For example, under component three the PIF suggests that the project will enhance the capacity of local communities to apply and maintain water storage and irrigation technologies but offers little explanation of how that capacity-building will be done. There is no well-informed identification of assumptions, which</p>

		is problematic. Looking at the same example from component three, the assumption appears to be that farmers lack capacity to use these technologies, but there is little evidence that this has been demonstrated empirically rather than assumed/inferred from the fact that farmers are not currently using these technologies.
	Is there a recognition of what adaptations may be required during project implementation to respond to changing conditions in pursuit of the targeted outcomes?	The risk section of the PIF captures this
5) incremental/additional cost reasoning and expected contributions from the baseline, the GEF trust fund, LDCF, SCCF, and co-financing	GEF trust fund: will the proposed incremental activities lead to the delivery of global environmental benefits?	N/A
	LDCF/SCCF: will the proposed incremental activities lead to adaptation which reduces vulnerability, builds adaptive capacity, and increases resilience to climate change?	It is not clear if this will lead to adaptation, or just to agricultural development.
6) global environmental benefits (GEF trust fund) and/or adaptation benefits (LDCF/SCCF)	Are the benefits truly global environmental benefits/adaptation benefits, and are they measurable?	It is not clear if there are adaptation benefits here. The benefits, in terms of improved yields and incomes, along with reduced flooding, should be measurable.
	Is the scale of projected benefits both plausible and compelling in relation to the proposed investment?	Yes, but it is not clear that they are adaptation benefits.
	Are the global environmental benefits/adaptation benefits explicitly defined?	Benefits are defined, but it is not clear they are adaptation benefits
	Are indicators, or methodologies, provided to demonstrate how the global environmental benefits/adaptation benefits will be measured and monitored during project implementation?	Indicators are provided
	What activities will be implemented to increase the project's resilience to climate change?	This is not discussed in the PIF
7) innovative, sustainability and potential for scaling-up	Is the project innovative, for example, in its design, method of financing, technology, business model, policy, monitoring and evaluation, or learning?	The project does propose to introduce UTFI technology and techniques for the first time in West Africa.
	Is there a clearly-articulated vision of how the innovation will be scaled-up, for example, over time, across geographies, among institutional actors?	Largely by treating the project as a demonstration project for the package of technologies employed

	Will incremental adaptation be required, or more fundamental transformational change to achieve long term sustainability?	This is incremental adaptation
1b. Project Map and Coordinates. Please provide geo-referenced information and map where the project interventions will take place.		The maps do show the project areas generally; however, STAP recommends that the maps provide greater detail by adding layers to the GIS and it would be extremely helpful to overlay the earlier maps showing climate projections with the districts where the project is expected to take place.
2. Stakeholders. Select the stakeholders that have participated in consultations during the project identification phase: Indigenous people and local communities; Civil society organizations; Private sector entities. If none of the above, please explain why. In addition, provide indicative information on how stakeholders, including civil society and indigenous peoples, will be engaged in the project preparation, and their respective roles and means of engagement.	Have all the key relevant stakeholders been identified to cover the complexity of the problem, and project implementation barriers?	The PIF identifies a wide range of stakeholders that appear to cover the complexity of the project.
	What are the stakeholders' roles, and how will their combined roles contribute to robust project design, to achieving global environmental outcomes, and to lessons learned and knowledge?	The roles seem appropriate, with the caveat that the project has not yet concretely engaged with local communities to clearly shape their role.
3. Gender Equality and Women's Empowerment. Please briefly include below any gender dimensions relevant to the project, and any plans to address gender in project design (e.g.	Have gender differentiated risks and opportunities been identified, and were preliminary response measures described that would address these differences?	Yes, these risks have been identified, and there are plans to address them in the PIF.

<p>gender analysis). Does the project expect to include any gender-responsive measures to address gender gaps or promote gender equality and women empowerment? Yes/no/tbd.</p> <p>If possible, indicate in which results area(s) the project is expected to contribute to gender equality: access to and control over resources; participation and decision-making; and/or economic benefits or services.</p> <p>Will the project's results framework or logical framework include gender-sensitive indicators? yes/no/tbd</p>		
	<p>Do gender considerations hinder full participation of an important stakeholder group (or groups)? If so, how will these obstacles be addressed?</p>	<p>This is not clear from the PIF. STAP suggests the project team carefully assess this when conducting community engagement at the PPG stage and beyond</p>
<p>5. Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design</p>	<p>Are the identified risks valid and comprehensive? Are the risks specifically for things outside the project's control? Are there social and environmental risks which could affect the project?</p> <p>For climate risk, and climate resilience measures:</p> <ul style="list-style-type: none"> • How will the project's objectives or outputs be affected by climate risks over the period 2020 to 2050, and have the impact of these risks been addressed adequately? • Has the sensitivity to climate change, and its impacts, been assessed? • Have resilience practices and measures to address projected climate risks and impacts been considered? How will these be dealt with? 	<p>The risks are valid and comprehensive, and environmental risks have been identified. Climate risks have been largely captured as variability and extreme events. There are some measures in place to address these impacts. It is not clear from the PIF how sensitive the project is to these impacts.</p>

	<ul style="list-style-type: none"> • What technical and institutional capacity, and information, will be needed to address climate risks and resilience enhancement measures? 	
6. Coordination. Outline the coordination with other relevant GEF-financed and other related initiatives	Are the project proponents tapping into relevant knowledge and learning generated by other projects, including GEF projects?	Yes
	Is there adequate recognition of previous projects and the learning derived from them?	Yes
	Have specific lessons learned from previous projects been cited?	Yes
	How have these lessons informed the project's formulation?	
	Is there an adequate mechanism to feed the lessons learned from earlier projects into this project, and to share lessons learned from it into future projects?	See knowledge management below
8. Knowledge management. Outline the "Knowledge Management Approach" for the project, and how it will contribute to the project's overall impact, including plans to learn from relevant projects, initiatives and evaluations.	What overall approach will be taken, and what knowledge management indicators and metrics will be used?	The approach is not fully developed, but does involve stocktaking knowledge from prior projects and identifying the most effective means of disseminating results.
	What plans are proposed for sharing, disseminating and scaling-up results, lessons and experience?	See above

Notes

STAP advisory response	Brief explanation of advisory response and action proposed
1. Concur	STAP acknowledges that on scientific or technical grounds the concept has merit. 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.
	* In cases where the STAP acknowledges the project has merit on scientific and technical grounds, the STAP will recognize this in the screen by stating that <i>“STAP is satisfied with the scientific and technical quality of the proposal and encourages the proponent to develop it with same rigor. At any time during the development of the project, the proponent is invited to approach STAP to consult on the design.”</i>
2. Minor issues to be considered during project design	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:
	(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.
	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 issues to be considered during project design	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:
	(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. 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.