REVISED STAP SCREENING TEMPLATE, OCTOBER 2022

GEF ID	11798
Project title	Sustainable Management of Biodiversity and Natural Resources in the Bolivian Altiplano associated to the production of South American camelids
Date of screen	13 January 2026
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1. Summary of STAP's views of the project

STAP considers this to be a project with potential to benefit biodiversity; however, in its current form, it has significant potential to degrade biodiversity, rather than conserve or enhance it. The project focuses on domestic camelids; it does not mention wild vicuñas, or any other specific biodiversity outcomes or indicators, except for broad references to pasture and wetland conditions. An assessment of the carrying capacity of the ecosystem has not been done and is essential prior to introducing additional domestic camelids.

The project describes the Altiplano as a globally significant biome. However, few elements of biodiversity are explicitly considered, beyond grasslands, and an important driver of biodiversity loss, water diversion from gold mining, was not considered

Once all drivers of biodiversity loss have been considered, the theory of change needs to provide clear logical pathways for the interventions. Stakeholder identification and engagement are included; however, STAP has identified several areas requiring strengthening. The global biodiversity problem is not articulated explicitly, and system dynamics are insufficiently unpacked, especially with regard to decision-making, incentives, and power dynamics. The treatment of uncertainty remains largely descriptive and does not clearly demonstrate robustness under adverse futures. The theory of change has some significant gaps, e.g., description of potential target markets is lacking, and consideration of evidence related to potential markets is insufficient, with limited articulation of assumptions, identification of barriers to market access, behaviour-change mechanisms, and potential failure points. This is particularly important, given that provision of supplementary forage is proposed, which will require additional effort from producers and it is unclear what the net benefit will be.

Greater operational detail is also needed to strengthen the description of proposed activities under the three project components (i.e. restoration prioritisation, long-term maintenance, and the national knowledge system).

Note to STAP screeners: a summary of STAP's view of the project (not of the project itself), covering both strengths and weaknesses.

STAP's assessment*

- □ Concur - STAP acknowledges that the concept has scientific and technical merit
- □ Minor - STAP has identified some scientific and technical points to be addressed in project design
- □ Major - STAP has identified significant concerns to be addressed in project design

Please contact the STAP Secretariat if you would like to discuss.

2. Project rationale and project description – are they sound?

See annex on STAP's screening guidelines.

The proposal provides a reasonable description of the **current situation** in the Bolivian Altiplano. It establishes the Altiplano as part of a globally significant biome. However, the articulation of the global biodiversity problem remains largely implicit and the proposal would benefit from a more explicit framing of how these local pressures (e.g. habitat

degradation, loss of species abundance, and reduced ecosystem integrity) translate into globally relevant biodiversity issues and challenges.
Some elements of the system are described reasonably well; however, the Altiplano is characterized as a coupled social–ecological production landscape, in which grazing systems, wetlands, protected areas, and indigenous livelihoods are tightly interlinked, but the emphasis is on domestic camelid production, rather than on sustaining or enhancing biodiversity. The two measures of biodiversity – mean species abundance and natural capital are insufficient, especially since the biodiversity MAP analysis only considers grasslands and not wetlands or native camelid diversity. Mean species abundance is a relatively weak measure of biodiversity, and should be combined with a consideration of species richness and/or which species are increasing in abundance. Natural capital is not a measure of biodiversity. Biodiversity is the variety of life on Earth and, as such, is the living component of natural capital stocks. Natural capital is an economic concept that encompasses a broader range of natural assets, including non-living resources, and is distinct from biodiversity.

Institutional and governance elements are acknowledged, including overlapping mandates among agricultural, environmental and protected-area authorities, as well as the role of Indigenous producer organizations. However, the proposal does not explain how decisions are made within this system (e.g. who controls stocking rates, pasture use, water management, or land-use change), nor does it clearly articulate where and how the project's interventions will shift incentives, behaviors, or institutional arrangements to alter system dynamics, e.g., what is the rationale for focusing on municipal controls, rather than on community-led grazing management?

Some of the underlying **drivers of environmental change** are identified. The proposal distinguishes between *indirect drivers* (e.g. governance weaknesses, market pressures related to the expansion of quinoa production and the associated erosion of traditional management systems) and *direct drivers*, including overgrazing, land-use change, habitat fragmentation, and climate-induced stress. However, the impact of gold mining on water availability, through diversion of streams for mining use away from wetlands, is not mentioned, although it is a significant cause of biodiversity decline in the Altiplano. Gold mining also adversely affects water quality in wetlands through mercury contamination. Climate change is treated as a cross-cutting amplifier of existing pressures, with reference to increasing drought frequency and impacts on bofedales and pastoral systems.

There is an attempt to address uncertainty by introducing a set of **future narratives**, for example, by linking faster climate change to increased drought stress on bofedales and grazing systems, and higher commodity demand to agricultural expansion, intensified land use, and habitat fragmentation. However, the information provided does not explain how different futures would influence government policies and priorities or resource allocation by different actors (e.g. farmers, households, Indigenous Peoples, government, large private sector companies etc.), nor does it clarify whether certain interventions become more critical under more adverse scenarios, such as the combination of faster climate change and increased water diversion from gold mining. In particular, how would climate change affect the carrying capacity of the ecosystem with respect to native camelids? As a result, it is difficult to assess whether the project has been designed to remain robust across a range of plausible futures, rather than merely acknowledging their existence. The scope of the analysis is also somewhat narrow, as other potentially important sources of uncertainty, such as policy shifts, governance effectiveness, demographic change, or land and water conflicts, are not fully explored.

The proposal provides a description of the **baseline** and counterfactual and quantifies expected biodiversity trends in the absence of the project. However, the linkage between baseline dynamics, intended outcomes, and the mechanisms by which outcomes will shift the baseline should be more explicit, particularly in relation to biodiversity outcomes (as distinct from livelihood or governance improvements). The FAO ABC-Map tool is used to quantify expected baseline trends, including an estimated decline in mean species abundance and a reduction in natural capital value per hectare in the absence of intervention, however, the biodiversity assessment only considers production of grasslands and native camelids, wetlands and other important components of biodiversity are not analysed. As such, the biodiversity baseline and counterfactual are not compelling. This information is supported by an analysis of **barriers**, which prevent a shift away from the baseline trajectory, including weak institutional coordination, limited enforcement and incentives for sustainable land use, erosion of traditional management systems, lack of data and monitoring, and limited access to biodiversity-friendly markets and finance. A set of **enablers** is also identified (i.e. indigenous governance structures, existing producer organizations, ongoing IFAD investments, and growing awareness of the need for integrated

territorial planning), although the proposal could explain more clearly how the project will build upon these enablers to overcome specific constraints and achieve specific biodiversity outcomes.
The **Theory of Change (ToC)** narrative and underlying logic are straightforward and clear, and they are supported by concise and well-framed *if*, *then* and *because* elements. The structure of the ToC is built around four causal pathways: *planning & governance*, *practice & restoration, incentives and market*, and *knowledge and monitoring*. Taken together, these pathways form a logically consistent intervention package that addresses multiple leverage points in the system, but the proposal should be more explicit about biodiversity impacts and about the points at which this type of project typically fails (e.g. weak enforcement, low adoption, insufficient scale or maintenance of restored areas, and political turnover). The proposal does provide a few concrete **assumptions** in the results framework and narrative, but these are not sufficiently well integrated into the ToC, which also fails to fully explain *how* institutional change will be achieved (e.g. rules, incentives, monitoring, enforcement, financing for long-term maintenance, etc.). The project hints that planning will include mechanisms and that knowledge systems support decision-making, but the behavior-change mechanism is not really explained. The ToC diagram is clear and follows a linear structure, which is good, but is also quite simple and could be strengthened by adding/mapping a clear set of assumptions onto it and illustrating any interlinkages or causal feedback between components, outcomes, and outputs. The overall framing around a production system, rather than around biodiversity and GEBs is not well justified. The theory of change would benefit from more detail and specificity, which could be provided by describing and unpacking the intermediate steps through which improved planning, knowledge, and incentives translate into actual change at scale.

The **project components** are described in a generally coherent manner. The sequencing of component design from diagnostics to planning and then to targeted investments, makes sense, but is superficial. For example, **Component 1** focuses on territorial planning and governance, however, there is a strong emphasis on municipal control, rather than community-led approaches.

The proposal provides a good level of technical detail on the diagnostic studies to be undertaken as part of it, including biophysical, socio-economic, and climate-related assessments, as well as specific technical analyses such as vegetation characterization, carrying-capacity assessment, and water-flow measurement. **Component 2**, which focuses on ecosystem management practices and incentive mechanisms, is conceptually well framed and directly linked to the problems identified earlier in the proposal. The proposed measures for the restoration and sustainable land management of grasslands and bofedales, which include soil and water conservation, revegetation, improved grazing management, and rehabilitation of traditional water-harvesting systems, are technically appropriate for the Altiplano context and consistent with current scientific knowledge and practice (Hartman et al., 2016, 2018; Machaca et al. 2018; Preston, 2003). However, the proposal does not provide sufficient operational detail on how restoration and land management investments will be prioritized, the scale and intensity of interventions, or how maintenance and compliance will be ensured over time. **Component 3**, which establishes a national knowledge and monitoring system, is conceptually sound and clearly intended to support evidence-based decision-making across the project. However, key operational aspects such as system architecture, institutional hosting and governance, data standards and interoperability, quality assurance, data-sharing protocols (including considerations for Indigenous and community data), and long-term resourcing are not sufficiently specified to fully determine the feasibility and durability of the proposed system.

The proposal convincingly identifies the key **stakeholder** groups that are central to achieving biodiversity outcomes in the project area and demonstrates a clear intent to engage them throughout project design and implementation. Indigenous Peoples and local communities, particularly small-scale camelid producers from Aymara and Quechua communities, are appropriately recognized as primary rightsholders and custodians of biodiversity. A comprehensive array of institutional stakeholders are identified and mapped across national, departmental, and municipal levels, including the principal ministries, technical agencies, protected area authorities, municipalities, and producer organizations that influence land-use, livestock management, and biodiversity governance in the Altiplano. This is appropriate for the complexity of the landscape and the project's ambitions. Roles and responsibilities are clearly outlined by describing concrete mechanisms for engagement. A dedicated Stakeholder Engagement Plan provides culturally appropriate communication and consultation approaches, including the use of local languages, multiple communication channels, and grievance and feedback mechanisms. Participatory structures, such as Territorial Coordination and Evaluation Committees, are intended to provide spaces for Indigenous producer organizations and

local authorities to contribute to decision-making, including the development and approval of Biodiversity and Natural Resources Management Plans. The integration of these plans into municipal planning instruments offers a credible pathway for institutionalizing stakeholder contributions beyond the life of the project.

The assessment of **risks** to project design and implementation is generally sound and comprehensive. The overall risk rating of moderate is appropriate given the complexity of the operating context, as are the ratings assigned to all individual risk categories. The risk table identifies a total of eight risk categories, including: environmental and social, political and governance, institutional and financial. These risks align well with the project's theory of change and delivery model and reflect a realistic understanding of the challenges associated with implementing biodiversity-focused interventions in production landscapes. Several **mitigation measures** are well-developed and proportionate to the risks identified. In particular, the proposed measures for fiduciary risk are articulated with a high level of operational detail, including internal control systems, external audits, segregation of duties, and compliance with national and IFAD procedures.

Environmental and social risks are also appropriately addressed through the use of established instruments such as the Stakeholder Engagement Plan, Indigenous Peoples Plan and FPIC processes, the Gender Action Plan, and the Environmental and Social Commitment and Management Plan, which provide a credible framework for managing social tensions, ensuring inclusive participation, and avoiding harm during implementation. However, for several of the higher-level risks, mitigation measures remain largely process-oriented and would benefit from greater operational specificity.

Climate-related risks, for example, are primarily mitigated through diagnostics, planning, and the identification of suitable nature-based solutions. While this approach is directionally appropriate, it does not yet clearly specify contingency measures, adaptive triggers, or flexible implementation arrangements that would allow the project to respond effectively to extreme or worsening conditions. Similarly, political and governance risks are largely addressed through communication and coordination mechanisms, without clearly articulated fallback options or sequencing strategies in the event of delays, shifting priorities, or institutional turnover. Institutional capacity and financing risks at the municipal level are acknowledged, but mitigation measures do not fully specify how staffing, budgetary commitments, enforcement, or accountability will be ensured in practice.

Note: provide a general appraisal, asking whether relevant screening guideline questions have been addressed adequately – not all the questions will be relevant to all proposals; no need to comment on every question, only those needing more attention, noting any done very well, but ensure that all are considered. Comments should be helpful, evaluative, and qualitative, rather than yes/no.

3. Specific points to be addressed, and suggestions

- In the project rationale section, provide clear biodiversity objectives and outcomes. These need to go beyond the extent of grassland and domestic camelids and address wetlands, native camelids and other components of biodiversity. Mean species abundance is a weak measure of biodiversity and should be combined with species richness, or at least with consideration of which species are increasing in abundance and which are declining. Natural capital, which is an economic concept that includes non-living assets, should be replaced with an actual biodiversity metric. Also in this section, describe who makes specific key land-use and resource-management decisions (e.g. stocking rates, pasture rotation, water use, land conversion) and clarify *where and how* project interventions will shift incentives, behaviors, and institutional arrangements to alter system dynamics (**See STAP guidance on**: Achieving enduring outcomes from GEF investment).

- As the proponents recognize, currently most PTDIs are not implemented. However, this is not because of lack of plans or participation in planning. The main problem is lack of capacity and resources to finance, enforce and monitor. These needs should be considered, including providing a mechanism for covering the costs of finance, enforcement and monitoring. Also, embedding the activities within community-led

grazing management plans and activities would be more effective than relying on municipal controls.

- Use the future narratives to stress-test the project design by showing how different scenarios would affect policy priorities, resource allocation, and stakeholder behavior, and, ultimately, on biodiversity. Identify which interventions become critical under more adverse futures, e.g. faster climate change combined with increased water diversion associated with gold mining (**See STAP guidance on:** Using simple narratives to ensure durability of GEF investments).

- Broaden the uncertainty analysis to include policy shifts, governance effectiveness, demographic change, and land and water conflicts, and link these to adaptive management responses.

- Explain how the enabling factors identified in the proposal (e.g. indigenous governance systems, producer organizations, IFAD investments, etc.) will be leveraged by the project to overcome the specific barriers that were also identified in the proposal (**See STAP guidance on**: Enabling Elements of Good Project Design).

- Expand the ToC by explicitly considering the carrying capacity of the ecosystem with respect to native camelids, wetlands, and other components of biodiversity, rather than considering only grasslands. Also, the impact of climate change on carrying capacity should be considered.

- The description of markets is superficial, e.g., it should specify whether the focus will be on meat, fiber or both. Clarify the market demand for meat and/or fiber, and what obstacles communities face in accessing these markets. This is particularly important given supplementary forage is proposed, and the costs and benefits of providing supplementary forage need to be quantified. What will be the benefits for biodiversity of the water storage or the infrastructure proposed? What is the size of preferential markets? Does it justify this investment? Are the target markets local or international? If international, Peru is the main producer of Alpaca fiber, and the current obstacles for Bolivian alpaca fiber in comparison to Peruvian alpaca will need to be considered. There is no mention of women´s role in fiber selection, and in general of the productive chain and where the obstacles and opportunities lie. Be explicit about how biodiversity benefits will be sustained.

- Describe the 'intermediate steps' through which planning, knowledge, incentives and restoration can lead to sustained behavior change and biodiversity outcomes at scale (**See STAP guidance on:** Theory of change).

- Map key assumptions and risks (e.g. adoption rates, enforcement, political turnover, maintenance of restored areas) onto the ToC narrative and diagram and illustrate causal feedbacks and interlinkages between components where relevant.

- Increase the operational specificity of project components:
    - For restoration and sustainable land management interventions (i.e. components 1 and 2), clearly define prioritization criteria, scale and intensity of interventions, minimum technical standards, and arrangements for long-term maintenance and compliance;
    - For the national knowledge and monitoring system (component 3), describe the proposed system architecture, institutional hosting and governance, data standards and interoperability criteria, quality assurance procedures, data-sharing protocols (including considerations for handling Indigenous data), and long-term resourcing arrangements.

- Provide an analysis of how power dynamics, vested interests, and risks of elite capture can affect stakeholder engagement structures, and outline mitigation measures to ensure equitable participation, as well as sustained engagement and participation (**See STAP guidance on:** Multi-stakeholder dialogue for transformational change).

- Strengthen mitigation measures for climate, political, governance, and institutional risks by specifying clear decision triggers, contingency measures and adaptive management arrangements (**See STAP guidance on:** Clarifying risks in GEF projects).

- Currently, Bolivia is updating its NBSAP. It is recommended that this project coordinates with the updating process to ensure alignment of the project with the new NBSAP.

Note: number key points clearly and provide useful information or suggestions, including key literature where relevant. Completed screens should be no more than two or three pages in length.

References:

Hartman, B. D., Bookhagen, B., & Chadwick, O. A. (2016). *The effects of check dams and other erosion control structures on the restoration of Andean bofedal ecosystems.* Restoration Ecology. https://doi.org/10.1111/rec.12402

Hartman, B. D., & Cleveland, D. A. (2018). *The socioeconomic factors that facilitate or constrain restoration management: Watershed rehabilitation and wet meadow (bofedal) restoration in the Bolivian Andes.* Society & Natural Resources.

Machaca Cochi, N., Condori, B., Rojas Pardo, A., Anthelme, F., Meneses, R. I., Weeda, C. E., & Perotto-Baldivieso, H. L. (2018). *Effects of grazing pressure on plant species composition and water presence on bofedales in the Andes mountain range of Bolivia.* Mires and Peat, 21, Article 15. https://doi.org/10.19189/MaP.2017.OMB.303

Preston, D. (2003). *Grazing and environmental change on the Tarija Altiplano, Bolivia.* Mountain Research and Development. https://doi.org/10.1659/02764741(2003)023[0141:GAECOT]2.0.CO;2

ANNEX: STAP'S SCREENING GUIDELINES

1. How well does the proposal explain the problem and issues to be addressed in the context of the **system** within which the problem sits and its drivers (e.g. population growth, economic development, climate change, sociocultural and political factors, and technological changes), including how the various components of the system interact?

2. Does the project indicate how **uncertain futures** could unfold (e.g. using simple **narratives)**, based on an understanding of the trends and interactions between the key elements of the system and its drivers?

3. Does the project describe the **baseline** problem and how it may evolve in the future in the absence of the project; and then identify the outcomes that the project seeks to achieve, how these outcomes will change the baseline, and what the key **barriers** and **enablers** are to achieving those outcomes?

4. Are the project's **objectives** well formulated and justified in relation to this system context? Is there a convincing explanation as to **why this particular project** has been selected in preference to other options, in the light of how the future may unfold?

5. How well does the **theory of change** provide an "explicit account of how and why the proposed interventions would achieve their intended outcomes and goal, based on outlining a set of key causal pathways arising from the activities and outputs of the interventions and the assumptions underlying these causal connections".

    - Does the project logic show how the project would ensure that expected outcomes are **enduring** and resilient to possible future changes identified in question 2 above, and to the effects of any conflicting policies (see question 9 below).
    - Is the theory of change grounded on a solid scientific foundation, and is it aligned with current scientific knowledge?
    - Does it explicitly consider how any necessary **institutional and behavioral** changes are to be achieved?
    - Does the theory of change diagram convincingly show the overall project logic, including causal pathways and outcomes?

6. Are the project **components** (interventions and activities) identified in the theory of change each described in sufficient detail to discern the main thrust and basis (including scientific) of the proposed solutions, how they address the problem, their justification as a robust solution, and the critical assumptions and risks to achieving them?

7. How likely is the project to generate global environmental benefits which would not have accrued without the GEF project (**additionality**)?

8. Does the project convincingly identify the relevant **stakeholders**, and their anticipated roles and responsibilities? is there an adequate explanation of how stakeholders will contribute to the

development and implementation of the project, and how they will benefit from the project to ensure enduring global environmental benefits, e.g. through co-benefits?

9. Does the description adequately explain:

   - how the project will build on prior investments and complement current investments, both GEF and non-GEF,
   - how the project incorporates **lessons learned** from previous projects in the country and region, and more widely from projects addressing similar issues elsewhere; and
   - how country policies that are contradictory to the intended outcomes of the project (identified in section C) will be addressed (**policy coherence**)?

10. How adequate is the project's approach to generating, managing and exchanging **knowledge**, and how will lessons learned be captured for adaptive management and for the benefit of future projects?

11. **Innovation and transformation:**
    - If the project is intended to be **innovative:** to what degree is it innovative, how will this ambition be achieved, how will barriers and enablers be addressed, and how might scaling be achieved?
    - If the project is intended to be **transformative:** how well do the project's objectives contribute to transformative change, and are they sufficient to contribute to enduring, transformational change at a sufficient scale to deliver a step improvement in one or more GEBs? Is the proposed logic to achieve the goal credible, addressing necessary changes in institutions, social or cultural norms? Are barriers and enablers to scaling be addressed? And how will enduring scaling be achieved?

12. Have **risks** to the project design and implementation been identified appropriately in the risk table in section B, and have suitable mitigation measures been incorporated? (NB: risks to the durability of project outcomes from future changes in drivers should have been reflected in the theory of change and in project design, not in this table.)