

# 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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Panel member validation by: Brian Child  
Consultant(s):

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

**FULL SIZE PROJECT GEF TRUST FUND**

**GEF PROJECT ID:** 6943

**PROJECT DURATION :**

**COUNTRIES :** Azerbaijan

**PROJECT TITLE:** Conservation and Sustainable Use of Globally Important Agro-biodiversity

**GEF AGENCIES:** UNDP

**OTHER EXECUTING PARTNERS:**

**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. STAP welcomes the submission of this important and timely proposal to promote the conservation and sustainable use of local genetic resources in Azerbaijan. While STAP feels that the overall concept of the project is excellent, the PIF is weakened by the absence of credible sources (e.g. scientific literature, other projects) to back up these concepts objectively, and by target figures that are inconsistent or over-optimistic.
2. The LD component of the project will sink or swim depending on whether a case for local seeds can be made. Therefore, the PIF needs to provide a much stronger technical and scientific case for the adoption of farming using local wild seeds, either by using the scientific literature or experience from other projects to demonstrate that this knowledge is already available.
3. If technical and scientific information is not available to justify the adoption local crops, the project should be re-balanced to focus on (1) strengthening the science, conservation and testing of local seeds before the next phase of (2) rolling out (untested?) seeds/agri-methods ambitiously. The PIF appears too ambitious about the speed and extend of seed adoption by farmers; lower targets, or even focusing component 2 on developing on-farm trials rather than an extensive roll out, are perhaps all that a 5 year \$4.1m project can do.
4. Given that the main target group of the project is farmers and local communities, the PIF also needs to carefully analyze whether a more bottom up approach is required for farmer participation, extension and adoption; the current proposal does not address how participation will occur and the structures it describes are somewhat mechanical and top down.
5. The key risks of (1) farmer adoption and (2) subsidies of local crop varieties are critical to project sustainability need to be included under risks, and also dealt with.
6. Overall, this project is of potentially high value, but needs to address several greater and lesser risk factors. A more detailed assessment of these is provided below.

#### PART 1: PROJECT FRAMEWORK

Project Objective: Is the objective clearly and consistently related to the problem diagnosis?

1. The project objective is clearly stated and globally relevant. Perhaps insert the word "indigenous" or "local" or "traditional" or "indigenous" before varieties to be more explicit.

Expected Outcomes. Do the outcomes encompass important global environmental benefits? And are these global environmental benefits likely to be generated?

2. The outcomes represent important global benefits in the form of conservation of agro-biodiversity, and improved use of land. The PIF should provide more detail on what agro-biodiversity will be specifically conserved, and how this relates to other agro-biodiversity conservation initiatives.

3. Second, the project will still be sound if the objectives are re-balanced between BD and LD. The conservation of agro-biodiversity through in situ and ex situ conservation is of global benefit, and one question is whether enough effort is being accorded to this function. Thus, is the scale of wild relative mini-reserves too small, and should this aspect of the project be increased including long term management of these reserves?

4. Similarly, the science of local species seems weak but foundational to the project concept. The PIF would be stronger by showing that the science already exists, and if it does not by including developing the science as an activity of the project.

5. Therefore, greater consideration should be given to whether the project needs to invest more in the science and protection of agro-biodiversity, or if enough is known to roll this knowledge out to improve land management as currently proposed. The "absence of systematic information on location and threats to [sic] crop wild relatives" is noted as a barrier, though no specific comment is made about the similar absence of knowledge about the use and economics of these crops. Moreover, the lack of scientific, economic and practical detail in the PIF suggests that knowledge is indeed a limiting factor that needs to be in place before pursuing the BD objective. If this is the case, the project should emphasise this, and also the on-farm testing of local varieties; it would be risk to emphasise a rapid roll out of wild varieties (as is currently the case) before more is known to justify adoption.

6. Achieving the LD objective by expanding the use of indigenous varieties is laudable. But is it achievable? As noted below, the technical case for the improvement of land health through local varieties needs to be strengthened by assessing the literature and other GEF projects. Even more so, the economic case that farmers will adopt such varieties has to be made. If this can be done, then the project will be strong as it creates synergies between both objectives set out in the Project Objective – BD and LD. If the risk that farmers will not adopt local varieties proves to be high it may be necessary to rethink this strategy, perhaps emphasising in-situ conservation and modifying the approach to LD.

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Expected Outputs. Is the sum of the outputs likely to contribute to the outcomes?

1. The combination of outputs is logical. However, the indicators may be over-optimistic – 100,000 hectares within project time frame, and 900,000 ha by 2025.

Project component. Do the project activities / components support the project objective, and reflect key overall objectives in the GEF strategy for focal areas?

The basic structure of the project is strong, and matches GEF's focal areas. However, there are three factors that need to be seriously considered:

- The risk factor about the uptake of agro-biodiversity, and the need to justify its land conservation and farm business viability
- The risk factor relating to proposed government subsidization of agro-biodiversity
- There are gaps on the activities need to achieve the objectives, and some re-organization of these may be useful.

General comments and notes to support these conclusions:

Component 1

1. Component 1 is globally relevant. However, is 70 hectares of wild reserves sufficient to protect the 48 targeted local varieties, and would it not be cost effective to significantly increase this aspect of the project

(including the science and documentation of the value and use of local seeds) which, presumably, also provides a lower risk strategy for genetic conservation than on-farm use of these seeds with respect to the conservation of globally threatened local varieties.

2. While the absence of systemic information on location, threats (and potentials) of crop wild relatives is identified as a barrier, no activities or barriers deal with this lack of knowledge. Similarly, the practicalities of how this is going to be tested on farms (i.e. barrier 2) is not clear.

3. Both GEF and STAP are pushing to develop knowledge, evidence bases and "experimental design." This project lends itself well to this concept by comparing traditional farming outputs with that of the new crop varieties in terms of impact on the land as well as on average family and/or community income, impact on women, etc. If the results are favorable, this type of information would be useful - if not critical - in expanding the program to other areas. This data is also presumably central to encouraging farmer adoption.

4. One of the first steps is to identify the 'hot spots' of wild seeds in small areas. It's not clear how they will do this practically. Is there a team of researchers and experts with specific knowledge of different crop species and who can use a GPS and download data into a GIS? Do they have the local capacity to do this effectively? Will they use these data to create a database on genetic diversity, which farmers will have access to? How will farmers access this exactly? What type of technology and know-how exists in rural areas that would allow for the effective sharing of data? Ideally, a two-way system of data sharing will get buy-in from farmers and ensure longevity.

5. One of the environmental benefits listed is "improved vegetation cover" but on which information is this claim based. The PIF should explain what type of land change transition is expected to take place in order to make this general statement.

## Component 2

1. Is the target of 100,000 hectares for uptake of local varieties realistic, or even necessary? Making the technical and economic case that native crops have ecological and profit advantages that will encourage uptake is a weakness of the PIF.

- If the inability of imported seeds to adapt to local conditions is well documented, please cite these documents and their conclusions (p3).
- Similarly, more technical detail and data from trials of local varieties in projects like Georgia and the literature need to be provided.
- Technical details on yields, income, costs (incorporating, for example, savings in water and chemicals), resistance to disease and drought, and other advantages and disadvantages compared to imported seeds should be provided, possibly in the form of a table. This justification (table?) should also comment on or quantify the costs that foreign varieties externalize to society compared to local varieties, using comparative data on rates of soil erosion, reliability of yield under variable climatic conditions and so on.
- The case for the uptake of local varieties is not convincing. If local varieties are so good, it is important to know why 95% of farmers have abandoned them, and what needs to change for farmers to adopt them. When you say the "cost effectiveness" of the cultivation of foreign seeds is several times higher than local varieties, do you mean several times more profitable? If so, why will farmers adopt local varieties?

2. Component 2 essentially sets up an extension system by linking Rayon Agricultural Centers at the meso level (is the focus of these farmer extension?) to groups of farmers at the micro level (the efficiencies of working with local farmer associations for extension is not really stated under bullet point 2). However, what is clearly missing is the technical research inputs that usually occur at macro-level. In the light of the comments above, the need for high level scientists to assess and communicate the advantages and disadvantages of local varieties is clearly necessary to complete the research-extension-farmer process.

3. The importance of developing market access is recognized, but this is far more difficult to do than it sounds and takes time. It has been a major weakness in other GEF projects (e.g. selling wild picked flowers from the Cape Fynbos region under the Agulhas Biodiversity Initiative), but has also been solved (e.g. by hiring an individual /firm) with the requisite skills and market knowledge and connections. This aspect of the project needs to be carefully considered beyond a vague hope that local varieties can be sold in organic

markets. How big are these markets? What is the cost of accessing them? Are the European supermarket chains that would promote local varieties (e.g. linked to the Paleo diet), etc?

4. Component II states that some of the crops have the potential to be sell certain 'organic' crops to high-end domestic consumers or to foreign markets. This may well be a full-fledged project in and of itself that requires a separate set of expertise given the numerous issues (food safety, transportation, branding, etc.) that would need to be carefully thought through in advance. The PIF is too ambitious, but if this project works out market development could be a potential follow-on.

5. Finally, does the wording of component 2 reflect what it does? How about something like: "development of research and extension systems to support reduced land degradation through uptake traditional crop varieties by local farmers"?

Component 3:

1. The wording of this component is loose. It seems to refer to central functions including policy, obtaining long term subsidies, and developing national seed repositories (is this where the research should be?).

2. The statement "Enabling environment â€¦ 2025" under Component 3 is a project impact, not an outcome. An outcome needs to occur within the 5-year project cycle.

3. A number of figures are bandied about throughout the document about how much land is arable, how much of this is used for local/foreign varieties, what the uptake of local varieties will be, etc. It would clarify the document if these data were summarized in one place, perhaps also using a table. This also serves the need for baseline data. For example, in the very useful incremental/additional cost reasoning table we see that just 10% of farmers are aware of local varieties, but does this refer to social surveys about knowledge, or to use of these varieties? How do we therefore interpret a "15% increase in on farmer application of native varieties"; 15% of what? How many farmers? How many hectares?

4. Regarding bullet point 1, does this imply that the sustainability of the entire project depends on the government putting in place policies to subsidize local varieties in order both to conserve them and recover degraded land? This is perfectly legitimate, but if it is indeed the nub of the project this should be said explicitly and must surely be a key assumption or risk depending on how sure you are that it will happen.

5. Bullet point 2 about information to farmers seems to fit better under component 2. So does bullet point 4. Is securing long term funding (bullet point 3) not also a risk factor, with this activity aimed at managing this assumption/risk?

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PART 2: PROJECT OVERVIEW\par

Is the problem statement well defined and supported by a verifiable baseline?

1. The problem statement and barriers are, as a whole, well argued. The key weakness that needs to be addressed concerns documentation of the scientific, technical and practical background about the practice, effects and economics of using wild varieties compared to imported varieties. This must carefully cite key scientific literature, and also other GEF experience (e.g. Georgia).

Baseline scenario and any associated baseline projects

1. The baseline policy and financial position suggests that a sound foundation for this project may well exist. This includes opportunities to link project goals with government subsidization of food production and EU and World Bank projects. However, this justification is still speculative and needs to be strengthened either in the PIF or PPG stage. Thus:

- The PIF/ProDoc needs to provide much clearer baseline indicators for the use (extent in hectares) and viability of wild varieties. If this cannot be provided in the PIF, this knowledge must built into the PPG, and if this is not possible it should comprise a key initial project activity.
- It is also important to know what the technical and financial capacity of Rayon Agricultural Centers is, or could be, given their centrality to this project.

- More evidence is required on the capacity and willingness of government subsidization and the EU and WB projects and this project, and how these synergies will be developed in the PPG process.

#### Proposed alternative scenario

1. The proposal alternative scenario is logical and well integrated. However, additional attention needs to be given to several activities.

- Once the areas with viable wild crop relatives are identified and given reserve status, who will manage them, and how will this be sustained?
- As noted above, insufficient attention is paid to the developing the science and practice of wild crop species, without which the proposed extension work and uptake by farmers will be difficult. In a five year project, perhaps this should be emphasized before steps are taken to roll out what might not be a workable product.
- Component 2 recognizes the need for collective action and economies of scale in extension and in the uptake and marketing of wild crops. However, it is simplistic to assume that this will occur by simply establishing a Regional Association of Small Scale Farmers. As "farmers and local communities" are the "main target groups of the project" (stakeholder table, p10), the PIF should give equally strong or greater consideration to whether and how grassroots farmer learning groups need to be established as part of this process and to link a regional association to farmers so the latter is not only a political organization floating in the air.
- No evidence is provided that Azerbaijan is committed to this alternative scenario, or that local people or organizations are ready to champion it.

#### Incremental cost reasoning and expected contributions from the baseline, and GEF

1. The table describing the baseline, GEF alternative and incremental local and global benefits is excellent. However, while the underlying logic is strong, the baselines and target numbers provided are confusing and may be over-optimistic. For example:

- The statement "just 10% of farmers are aware" does not describe how many farmers / hectares there are, and how many of these are used for wild crop varieties
- 900,000ha and 70% of the landscape seems to be an unachievable goal. If this is indeed the goal, it needs to be carefully justified. However, the project is still acceptable with much lower and more realistic goals
- Moreover, this does not tally with the goals of 70% of farmers being aware, 40% having access to native genetic material, and a 15% increase in on-farm application of native varieties and landraces.

2. These percentages should be accompanied by actual numbers of farmers, of hectares, etc. The PIF and certainly the ProDoc must back up the strong logic provided in the incremental cost reasoning table with much stronger numbers, and also with maps. We have already noted the need for stronger scientific and technical justification for the use, LD effects and adoption by farmers of local seeds.

#### Global and adaptation benefits

1. Conceptually, conserving local varieties and using them to improve land management is extremely attractive. If this can be achieved, the project will be highly worthwhile, especially if local crops also lead to a reduction in LD. From a global perspective, the project will be worthwhile even if it only conserves local seeds in situ and ex situ, and develops a stronger scientific and technical understanding of their potential uses. The PIF however needs to make a stronger and more explicit case about the global value of the agrobiodiversity in Azerbaijan, and how it conserves species or values that the Georgia (and other) projects are not doing.

2. Testing local crops for climate adaptation or LD reasons is also worthwhile. However, for the many reasons that so many farmers around the world have adopted foreign seeds, the PIF needs to be rigorous about its claims for the role out and LD benefits of local seeds and the associated risks.

## Innovativeness, sustainability and potential for scaling up

1. The project is innovative, at least in the Caucasus, about Rayon Agricultural centers, farmer associations, and seed repositories. However, these activities are tried and tested around the world, and care must be taken to integrate this knowledge rather than re-inventing the wheel. The idea of reorienting government funding to local varieties is excellent, but could be strengthened by demonstrating the economic (rather than financial) benefits of doing so in terms of adaptability, LD and so on.

2. This innovativeness is associated unavoidably with risk, the greatest of which is the viability of using local seed varieties, and whether local champions are in place to manage the risks as suggested. As noted elsewhere, serious consideration should be given to whether the project is over-ambitious, and whether this will increase risk by over-stretching its abilities. Starting more slowly and more strongly by developing a stronger scientific and technical base will reduce risks, and may increase the scalability of the project in the long term.

3. This project is an important experiment, and the PIF needs to consider how the lessons of this project will be captured as knowledge for other projects.

## Identify key stakeholders and describe how they will be involved in project preparation

1. Key stakeholders and their roles are identified (i.e. State (4), local (1), farmer (1), NGO (2) and academic (2)). The PPG needs to assess capacities relative to suggested roles, bring more clarity to these roles, and to provide a stronger understanding of how local communities are going to participate, preferably emphasizing active citizen control rather than passive participation (Arnstein 1969; Pimbert and Pretty 1995).

## Is the risk assessment valid and comprehensive, and are risks created by inadequacies in project design?

1. The risk of inadequate scientific and technical baseline information about wild seeds is not addressed by project design. This subjects the project to the risk that "farmers may be resistant to switch to growing local varieties", a risk that is at a much higher level than M. Project design must be modified to reduce this risk, either by quoting the relevant science/experience, or by developing it through the project.

2. In addition, there are risks in the capacities and commitments of stakeholders to the project that need to be evaluated during PPG. There is also the risk that the government will not subsidize wild seeds is critical to project success but not mentioned in risk factors. Also, what do the climate models say about medium term climate change in Azerbaijan, and how does this affect the project? Finally, what about risks of civil disturbance and war?

## Socio-economic and gender issues

1. Gender issues are well elaborated, but the PIF needs to be strengthened by briefly describing agricultural trends. What proportion of people in the target region farm? What are their incomes? Are they moving into or out of agriculture? What is happening to the land – here we need some hard facts. What are the general trends in crop production and yields? Provide a map of the target area. Presumably this detail has been collected by the EU or WB projects?

## Coordination with other related activities and learning from other projects

1. This project dovetails nicely with the three partner projects that are mentioned (EU, World Bank, USAID), but the PPG needs to provide more detail about how, practically, activities will be coordinated to develop the possible synergies.

2. Apart from briefly stating that "under proper management (as demonstrated by UNDP GEF project in neighbouring Georgia)" there is no direct evidence in this PIF of learning from other GEF projects. Even in this example, the statement is very general, and should do more to assess the technical and economic concerns about the lack of science that permeate this screening document.

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References

Arnstein, S. R. (1969). "A Ladder of Citizen Participation." American Institute of Planners Journal 35(4): 216-224.

Pimbert, M. P. and J. N. Pretty (1995). Parks, People and Professionals: Putting 'Participation' into Protected Area Management. Discussion Paper No 57, February 1995. . Geneva, UNITED NATIONS RESEARCH INSTITUTE FOR SOCIAL DEVELOPMENT, INTERNATIONAL INSTITUTE FOR ENVIRONMENT AND DEVELOPMENT, WORLD WIDE FUND FOR NATURE.

Additional notes

Re-organization of project activities, components

There is a case for reorganizing the components something as follows. To understand the "story" underlying the project, we analyzed it by using a log-frame to outline the change hypothesis the the PIF had in my mind. These comments are include fyi. Note that the activities in red are those that appear to be missing but necessary for project success:

Component 1: Establish in situ and ex situ conservation of genetic biodiversity and associated science:

1. Establish and manage wild reserve
2. National seed depository
3. Multiplying and distributing seeds
4. Research and knowledge generation (this seems to be missing in the project, and the lack of technical science is a weakness in the PIF)
5. There should also be learning outcomes here " guidelines, manuals, etc.

Indicators:

- Area and species protected in situ
- Species / seeds protected ex-situ
- Knowledge about species and their uses, viability, LD values, etc

Component 2: Meso level, extension and building middle level institutional capacities:

1. Regional associations
2. Rayon centers
3. Farmer training (and organizing farmers as community groups to reduce the transaction costs of extension? Note that "farmer learning groups" proved highly effective in the South Africa Grasslands Project)
4. Information to farmers (from Component 3)
5. Vocational training to farmers (also from component 3)

(Indeed, what is the difference between the above three bullet points; are they not one and the same thing?)

Indicators:

- Reduced land degradation
- On farm conservation of local seeds and species

Component 3: Establishing science, policy / subsidies, seed repositories and markets at the macro level:

1. Develop subsidies
2. Develop markets

Indicators

- Competitiveness of local varieties and their uptake by farmers

OBJECTIVES      INDICATORS      ASSMPTIONS/RISKS

Project Objective " as is      What are the indicators?

- Are the technical and economic advantages such that farmers will adopt local varieties?
- Will government subsidize local varieties and land use systems?

Project purpose (expected outcomes)

1. Long term protection of targeted genetic resources
2. Improved state of agricultural lands

3. Enabling environment
    - 70 ha of mini-reserves
    - National native seed depository
    - 100,000ha of land improved through native species
    - Subsidies
    - marketsCapacity of Ministry of Ecology and Natural Resources to manage mini-reserves
- Major outputs

Component 1: Establish in situ and ex situ conservation of genetic biodiversity and associated science:

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- Multiplying and distributing seeds
- Research and knowledge generation (this seems to be missing in the project, and the lack of technical science is a weakness in the PIF)
  - There should also be learning outcomes here “ guidelines, manuals, etc
  - Area and species protected in situ
  - Species / seeds protected ex-situ
  - Knowledge about species and their uses, viability, LD values, etc
  - Will government pay for a seed repository in the long term?
  - Is there science capacity (institution) that can take this on? Genetic Resource Institute?

Component 2: Meso level, extension and building middle level institutional capacities contributes to improved state of agricultural lands:

- Regional associations
- Organizing farmer communities / groups
- Rayon centers
- Farmer training, information, extension
- Reduced land degradation
- On farm conservation of local seeds and species

Component 3: Enabling environment including subsidies and markets (at the macro level):

- Develop subsidies
- Develop markets
- Competitiveness of local varieties and their uptake by farmers

<i>STAP advisory response</i>	<i>Brief explanation of advisory response and action proposed</i>
<b>1. Consent</b>	<p>STAP acknowledges that on scientific or technical grounds the concept has merit. However, STAP may state its views on the concept emphasizing any issues where the project could be improved.</p> <p>Follow up: The GEF Agency is invited to approach STAP for advice during the development of the project prior to submission of the final document for CEO endorsement.</p>
<b>2. Minor revision required.</b>	<p>STAP has identified specific scientific or technical challenges, omissions or opportunities that should be addressed by the project proponents during project development.</p> <p>Follow up: One or more options are open to STAP and the GEF Agency:            (i) GEF Agency should discuss the issues with STAP to clarify them and possible solutions.            (ii) In its request for CEO endorsement, the GEF Agency will report on actions taken in response to STAP’s recommended actions.</p>
<b>3. Major revision required</b>	<p>STAP has identified significant scientific or technical challenges or omissions in the PIF and recommends significant improvements to project design.</p> <p>Follow-up:            (i) The Agency should request that the project undergo a STAP review prior to CEO endorsement, at a point in time when the particular scientific or technical issue is sufficiently developed to be reviewed, or as agreed between the Agency and STAP.            (ii) In its request for CEO endorsement, the Agency will report on actions taken in response to STAP concerns.</p>



