

## **Global Crop Diversity Trust**

### ***Guidelines for the Development of Regional Conservation Strategies***

*Version 1.*

#### **Introduction**

These guidelines are intended to assist in the development of regional conservation strategies for *ex situ* collections of crop diversity. The strategy process will help to identify the collections that are eligible for funding by the Trust and to set funding priorities for upgrading and capacity building. These guidelines have been developed taking into consideration the outcomes of a consultation with representatives of regional plant genetic resources networks (May 2004, FAO) and discussions with other experts.

It is recognized that each regional strategy might unfold through a slightly different process and that it will not always be possible or necessary to follow all of the steps described below. The only absolute condition is that in every case the strategies are developed with the participation of relevant institutes, crop experts, collection managers, and regional networks.

The guidelines address the likely main steps needed to develop a regional conservation strategy. They propose a series of questions to be analyzed and points to be taken into consideration for identifying eligible collections and to assign priority amongst them. Additionally, the following information can be found in the Annexes:

- Annex 1. Eligibility Principles and Criteria
- Annex 2. Scope of conservation activities and descriptions
- Annex 3. Format for presenting regional conservation strategy

#### **Guidelines for Developing a Regional Conservation Strategy**

##### Coordination, leadership and facilitation

1. Overall coordination of the process to develop of the regional conservation strategies rests with the Secretariat of the Global Crop Diversity Trust, with support from its Technical Advisory Group (TAG), IPGRI and FAO staff. Any questions or request for support should be directed to the Secretariat.<sup>1</sup>
2. The relevant plant genetic resources network (or other regional coordination mechanism) agrees on a focal person (e.g. the network coordinator) to oversee the strategy development process and liaise with the Trust as necessary.
3. If required, the network focal person may wish to identify (with support from the Secretariat as needed) a consultant to facilitate the process. Ideally, neither the focal person nor the facilitator would have a direct stake in the outcome of the strategy development process (i.e. as a potential beneficiary of Trust funds).

##### The process

1. Convene a meeting of regional network members and relevant crop experts. To the extent possible, this meeting should be held at the same time as existing network meetings. The purpose of the meeting is to agree the approach for effective and efficient crop conservation in the region and to agree the process and timeline to develop the regional conservation strategy.
2. The focal person and/or facilitator collate existing information on collections of crops on Annex 1 of the Treaty held within the region (suggested that this commence prior to the meeting). The information should include: collection holders; species, type and number of accessions of the individual collections; passport data where possible; any other relevant information available. Assistance from the Trust can be provided if needed, linking with IPGRI and FAO in this task.

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<sup>1</sup> Contact Brigitte Laliberté, Scientist, Global Crop Diversity Trust ([b.laliberte@cgiar.org](mailto:b.laliberte@cgiar.org))

3. New inventories of certain country(ies) and/or collections may be needed to fill in gaps.
4. In developing the strategy, the following questions should be considered by the regional network members and relevant experts:
  - Which crops on Annex 1 are of greatest importance to the agriculture of the region or to one or a few countries in the region?
  - Which of the above crops have the region as their primary or secondary centre of diversity?
  - Which collections of the crops identified are 'most important' in terms of size, extent/scope of diversity, concentration of wild relatives and other standards of the measurement of importance as defined by network members?
5. Among the collections identified in point 4 above, identify the collections meeting the Trust's eligibility principles (see Annex 1).
6. Among the subset of collections identified in point 5 that meet the Trust's eligibility principles, identify which of these collections should be given first priority for receiving funding for upgrading and capacity building. The assignment of relative priority amongst collections could involve the consideration of the following points:
  - a. The extent, urgency and nature of actual or potential threats to the collection
  - b. The extent, urgency and nature of actual or potential threats to the crop in the field
  - c. The availability of alternative funding sources to support the conservation of a specific collection
  - d. Whether the collection is held in a genebank maintaining other eligible collections
  - e. The availability of other arrangements to support the conservation of identified priority collections
7. Assess opportunities for collaboration and for ensuring the most effective and efficient approach to conserving the eligible collections identified in point 5 above, drawing on partners both within and outside of the region for the provision of conservation services (as indicated in Annex 2 Scope of conservation activities and descriptions).
8. Assess the upgrading and capacity building needs of the priority collections identified in point 6 above (including the partner institutes providing services). The goal of upgrading and capacity building is to enable the collection to put into place the structures, skills and policies needed in order to meet the criteria for receiving conservation funding over the long-term (the 'eligibility criteria', see Annex 1).
9. Based on the outcome of these assessments, the focal person and/or facilitator prepares a draft strategy for an efficient and effective system of conservation of the collections identified in point 6, in the context of the region (using the proposed strategy format in Annex 3). This may include the possibility of visiting specific collections and/or genebanks.
10. The draft regional strategy is sent to the Trust Secretariat. Before finalization of any draft strategy, it will be reviewed by the Trust Secretariat and external reviewers.
11. Following the review by the Trust Secretariat, the draft regional strategy should be circulated to network members for approval.
12. Following the approval by the network members, the appropriate regional forum should be consulted for endorsement the draft regional strategy.
13. Finalize the regional strategy and submit to the Trust Secretariat.

## **Guidelines for Rationalizing Conservation**

A key objective of the Global Crop Diversity Trust is to promote an effective and efficient global arrangement for *ex situ* conservation in accordance with the International Treaty and the Global Plan of Action. The intention is to build towards such an arrangement gradually, by putting into place rational strategies for conservation at the regional level and, through a separate process of crop strategy development, globally at the level of the crop gene pool.

A rational strategy for conservation at the regional level will aim to:

- conserve existing crop diversity over the long-term
- meet agreed standards of management
- have minimum unplanned duplication
- have safety back-up arrangements
- ensure availability and access to the material
- have easily accessible information systems
- be cost-effective
- meet national and regional needs

For such a system to work, the following are critical:

- credibility and trust amongst the collection holders in the region
- willingness to collaborate with partners within and outside of the region
- links with existing collaborative frameworks such as networks
- adequate funding to support the system
- agreed conservation standards
- sharing of conservation responsibilities amongst partners for activities such as:
  - storage (e.g. a regional genebank holds collections on behalf of several countries or a number of genebanks take responsibility for conserving a gene pool/s)
  - documentation (e.g. the development and sharing of common or linked information systems)
  - regeneration
  - characterization and evaluation, including pre-breeding efforts
  - safety duplication
  - germplasm health (standards and monitoring)
  - germplasm exchange and distribution
  - training
  - technology transfer
- strong links to users (see guidelines below)
- effective mechanisms for monitoring and evaluation of technical and financial indicators

## **Guidelines for Ensuring Strong Links with Users**

The regional conservation strategies should encourage strong and effective links between crop diversity collections and key user groups including rural communities, farmers, professional plant breeders, and researchers. The strategies should thus seek to ensure the following, for example (further issues included in Annex 1 Criterion 1):

- users are able to easily access the material in the collection
- users have easy access to all available information about the material in the collection
- users participate in activities such as characterization/evaluation, field testing, etc
- mechanisms exist to monitor, measure and improve the effectiveness of services to users
- users are represented on the Board or other governance structures of the genebank
- the genebank has a close association with extension workers and/or other intermediary links with farmers
- the genebank has links with seed aid and development programmes where appropriate

## **Annex 1. Eligibility Principles and Criteria**

### **Eligibility Principles**

All four principles must be met for a grant applicant to receive support. These principles are:

1. The plant genetic resources are of crops included in Annex I or referred to in Article 15.1(b) of the International Treaty, unless otherwise determined by the Governing Body of the International Treaty
2. The plant genetic resources are accessible under the internationally agreed terms of access and benefit sharing provided for in the multilateral system as set out in the International Treaty.
3. Each holder of plant genetic resources for food and agriculture commits to its long term conservation and availability
4. Each recipient of funds from the Trust shall undertake to work in partnership to develop and maintain an efficient and effective global conservation system

### **Criteria for determining eligibility to receive Trust funding for long-term conservation**

The following criteria will be applied in determining the eligibility of collections to receive support from the Trust for long-term conservation. They will be kept under review and will continue to be further developed and elaborated to assist in their interpretation and application, and to help ensure that they can be applied consistently. In almost all cases the ability of a potential recipient to meet the criteria is likely to require expert judgment. Thus pre-proposals and proposals for funding will be subject to independent expert peer review.

#### 1) The recipient has effective links to users of plant genetic resources

The Trust aims to ensure that the plant genetic resources whose conservation it supports actively contribute to sustainable agricultural development and the achievement of food security. Thus it is vital that recipients are able to demonstrate strong and effective links with key user groups including rural communities, individual farmers, professional plant breeders, researchers and others. Where such links are weak, a recipient must be able to demonstrate a willingness to strengthen them. The Trust is willing to provide support for this. In order to be able to assess the ability of the plant genetic resources manager to adhere to this criterion, the following questions will be considered:

- What is the collection holder's record with respect to the distribution of samples? How many samples have been distributed, over what time period and to whom?
- Does the collection holder maintain records on the quality, usefulness and actual use made of the material distributed?
- Does the collection holder take steps to analyze, on a regular basis, the usefulness of the service it provides to users? With what results? Has this resulted in any concrete steps to strengthen links with users?
- Does the genebank actively promote its material with farmers and/or plant breeders and if so how? How effective is this promotion judged to be?
- Have any requests for material ever been refused, and if so why?
- Is the information and documentation on the material sufficient, readily available and judged useful for identifying appropriate material?
- Is the material healthy and available in sufficient quantity? Are quarantine procedures judged to be efficient and effective?
- What other links are there with the user community, e.g. are farmers and/or professional plant breeders represented on the Board or other governance or management mechanisms of the genebank? Do genebank managers and staff participate in the planning of local, national or regional research and development strategies and priorities?

## 2) The collection is important

The conservation systems supported by the Trust will comprise those plant genetic resources that, collectively, cover the major part of the crop gene pool in question and that are judged to be important regionally or globally. The importance of individual collections will be determined through the process of developing regional and crop conservation systems and funding strategies. In evaluating a collection's importance, the following questions need to be considered:

- What proportion of the collection originated in the country concerned?
- For material not originating in the country, what case can be made out for why it should be considered important within the context of a rational system?
- What proportion of the collection can be regarded as being genetically close to the originally collected population or bred sample?
- To what extent and where is the material duplicated? Is this part of a 'formal' scheme of safety duplication?
- Is the material viable and healthy? Is it regularly regenerated under conditions identical or similar to the conditions under which it was originally grown? Are samples regenerated in a manner which maintains their genetic integrity?

## 3) The legal status of the collection and holder are such that their ability to meet the eligibility principles with respect to access and benefit-sharing, and their commitment to long-term conservation are assured

The Trust needs to be assured that the collection is held in conformity with relevant international and national conventions and laws. The collection holder must be able to demonstrate an ability to meet the terms of the second eligibility principle, i.e. that the material is accessible under the terms of access and benefit sharing provided for in the multilateral system set out in the International Treaty. Furthermore, the holder should be able to demonstrate a commitment to the long-term conservation of the material in question. In order to be satisfied of these issues, questions that need to be addressed include:

- Is the country in which the collection is located a party to the International Treaty on Plant Genetic Resources for Food and Agriculture?
- Is the collection holder legally bound by the terms of the multilateral system of the Treaty at the national level, (e.g. by virtue of its status as a government institution) or, if not, are legally binding arrangements in place at the national level that will ensure conformity with these terms?
- If there is no legally binding mechanism at the national level, are other arrangements in place to ensure conformity with the terms of the multilateral system of the International Treaty with respect to access and benefit sharing, e.g. an agreement with the Governing Body of the International Treaty under Article 15 of the Treaty?
- Is there documented evidence of commitment to long-term conservation, e.g. through legal statutes, institutional constitutions or mandates, published institutional strategic plans, or national conservation strategies or action plans?

## 4) The recipient is willing to act in partnership with others to achieve a rational system for conserving plant genetic resources and making them available

A key objective of the Trust is to contribute to the development of an efficient and effective (i.e. rational) global system of *ex situ* conservation of plant genetic resources. A willingness to collaborate with others, e.g. through a willingness to share facilities, resources and information, is essential to achieving this objective. Partnership may also be important for carrying out certain essential services which may be performed better somewhere else than at the institution where a collection is held. An assessment of the collection holder's ability to meet this criterion, which is also enshrined in the 4<sup>th</sup> eligibility principle, will include a consideration of the following questions:

- Is the genebank/collection holder involved in collaborative activities with the holders of other collections, e.g. through national, regional or crop networks? If so, what is the extent, nature and effectiveness of this collaboration?

- Is the genebank/collection holder involved in collaborative activities with plant breeders, farmers or other users of the material, e.g. in regeneration characterization and evaluation? If so, what is the extent, nature and effectiveness of this collaboration?
- Does the holding institution have official agreements with other institutes, e.g. for safety duplication or other services such as regeneration, characterization, evaluation and information management?
- How effective is the collaboration as evaluated by the various partners concerned?

5) The recipient has the human resources and management systems needed to maintain the plant genetic resources and can demonstrate conformity with agreed scientific and technical standards of management

In order to receive long-term support from the Trust, a recipient must be able to demonstrate that the institution in question has the necessary human resources and management systems in place. Where this is not the case, but the material is otherwise judged to be eligible, the Trust will consider providing support for upgrading and capacity building. In addressing this issue the following questions will be considered:

- How many staff members are available to carry out the required work? What are their areas of expertise, level of training and experience? Are these judged to be adequate for the task at hand?
- Is the recipient able to manage the collection in conformity with the Trust's scientific and technical standards<sup>2</sup> with respect to all key activities including storage, regeneration, germplasm health, safety duplication, distribution, characterization, evaluation and documentation?
- Are quality control systems in place and judged to be adequate?
- Are all records of conservation, distribution and general management of the collection available and verifiable?

6) The facilities in which the collection is maintained are adequate to ensure long-term conservation

In order to receive long-term support from the Trust, a collection holder must be able to demonstrate that the facilities available are up to the task. Where this is not the case, but the material is otherwise judged to be eligible, the Trust will consider providing support for upgrading. In addressing this issue the following questions will be considered:

- Are the facilities acceptable for achieving long-term conservation of the species in question? Do the facilities meet the agreed standards<sup>1</sup>?
- Does the collection holder have systems in place to regularly monitor and adequately maintain the facilities?

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<sup>2</sup> The Trust intends to produce guidelines on appropriate scientific and technical standards with respect to conservation facilities and management.

## ***Annex 2. Scope of conservation activities and descriptions***

The Trust will support activities that facilitate the conservation and availability for use of the material. The following areas will be considered for support by the Trust:

### 1. Storage and maintenance (seed, *in vitro*, field)

The collection holder would have to ensure and demonstrate that the conservation method used for the particular crop is efficient and effective. All *ex situ* conservation methods are to be considered eligible if they are appropriate for the long-term maintenance of the genetic integrity of the germplasm and allow for its availability.

### 2. Regeneration

Regeneration is needed both for maintaining viability and for increasing the stock of the material. Regeneration procedures and protocols should guarantee to the extent possible the maintenance of genetic integrity through preventing the loss of alleles as well as avoiding contamination as a result of introgression. This activity might well involve partnership arrangements. Maintenance procedures for *in vitro* collections should aim to guarantee true-to-type-ness and may include regular explantation *in vivo*.

### 3. Characterization

The Trust will support characterization when this is needed to manage the collection effectively and (b) to ensure the use of the collection. Identification of duplicates may be facilitated by characterization data in addition to passport data. Molecular characterization will be considered for funding by the Trust if the purpose is to enhance management of the collection. In general the Trust will not support evaluation.

### 4. Documentation

Good passport and management information concerning the collection is essential. Developing and maintaining an effective computerized information and documentation system is eligible for support. Passport data and preferably (a set of) characterization descriptor data should be documented in a database and be readily available to (potential) users. The information system should be compatible with international standards, protocols and systems for data exchange, and the Trust will support these efforts.

### 5. Health of germplasm

The Trust will support the cleaning of material from diseases that threaten its survival in storage and bring risks with its distribution. This is an area in which partnership arrangements are likely to be particularly helpful. Consideration will be given to developing new facilities for health testing and disease eradication only if such partnership arrangements are not possible. The health status of the material should be documented and be made available.

### 6. Distribution

The Trust will support the costs of distributing material and maintaining records on the material distributed. Accurate records on the distribution and ultimate use of the material are key to being able to measure impact. Collection holders must be able to process requests within a reasonable time period.

### 7. Safety duplication

All materials supported by the Trust should be safety-duplicated off-site, ideally abroad. The fund will support such safety duplication when necessary.

### 8. General management

It is important that effective management systems be in place for the curation collections, including mechanisms for ensuring adequate quality control. These management systems should be well documented. Trust will support the development of such systems.

### 9. Acquisition (including collecting and introduction)

While acquisition of new material through collecting and introduction are essential activities in improving the coverage of the genetic diversity of a particular crop, in most cases these are not of highest priority for support by the Trust given the major current constraints in maintaining existing collections. However, there may be exceptions such as an urgent need for collecting threatened material or the need for restoring collections in the case of loss. Where possible other funding sources should be sought for such activities, but the Trust will consider these on a case-by-case basis.



**Annex 3. Format for presenting regional conservation strategy**



**Regional Conservation Strategy for (X region)**

**Note:** This format is intended to guide the formulation of the regional conservation strategy. Please feel free to add relevant information. We welcome feedback on this format.

**1. Strategy Overview:**

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<b>Strategy Title:</b>		
e.g. Regional Conservation Strategy for crop diversity collections in (region X)		
<b>Overview</b>		
<b>Name of Regional Focal Person:</b>	To oversee the strategy development process and liaise with the Trust	
Position:		
Name of organization:		
Address:		
Postal code:	City:	
Country:		
Telephone:	Fax:	
Email:		
<b>Name of Facilitator:</b>	If different than above	
Position:		
Name of Organization:		
Address:		
Postal code:	City:	
Country:		
Telephone:	Fax:	
Email:		
<b>Date of submission to the Trust:</b>		
<b>Total budget (USD):</b>		
<b>Countries involved:</b>		
<b>Crops/species involved:</b>		

**2. Objectives:** describe the measurable, near-term objectives that the strategy aims to accomplish

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**3. Outputs expected:** describe what the strategy will deliver if sufficient resources are provided

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#### 4. Crops of greatest importance

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List the crops (on Annex 1 of the Treaty) of greatest importance for the region (or to one or a few countries in the region) with specification of the factors or indicators used as measures of importance (eg. value in agricultural development, food security; primary or secondary center of diversity, etc.).

	<b>Annex 1 crop/species</b>	<b>Country(ies) in region</b> (all or specify)	<b>Factors / indicators of importance</b> (list & describe)
1.			
2.			
3.			
4.			
5.			
Etc.			

#### 5. Collections of greatest importance and first priority for support

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List the collections identified as “most important” in terms of size, extent/scope of diversity, concentration of wild relatives and other standards of measurements of importance as defined by the network members and other experts. These collections should meet the four Trust eligibility principles. Indicate which collections are first priority for support based on the measurement of threats and other considerations in assigning priority as defined by the network members and other experts.

<b>No.</b>	<b>Crop/ species</b> and other summary details of the agreed most important collections	<b>Current Holder</b> (name and contact details of holding institute)	<b>Priority</b> and the factors/ indicators given for assigning first priority for support (please specify)	<b>Accession-level passport data available<sup>3</sup></b>
1.				Yes / No
2.				Yes / No
3.				Yes / No
4.				Yes / No
5.				Yes / No
Etc.				

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<sup>3</sup> I.e. passport data on each accession, preferably compatible with the exchange format of the IPGRI/FAO Multi-Crop Passport Descriptors (available at: [www.ipgri.cgiar.org/publications/pdf/124.pdf](http://www.ipgri.cgiar.org/publications/pdf/124.pdf)). Where available, all accession level data on eligible collections should be provided separately.

## 5. Collaboration for effective and efficient conservation in the region

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Provide a narrative description of the collaborative arrangements proposed among the holders of the important collections and with other institutions involved in the management of the collections (providers of services), that would allow for efficient and effective conservation of the crop diversity of importance to the region. Include opportunities for collaboration with institutes outside of the region.

**For the priority collections identified** (as noted under point 4 above), specify in detail the proposed arrangement for ensuring their effective and effective conservation, by indicating:

- a. which institution/s (with name and contact details) are providing for the conservation of which priority collections
- b. what other institutions would be involved in providing services to the management of the collections (specify the service role they would play)
- c. how would effective links to users be implemented

## 6. Capacity-building and upgrading requirements and priority

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In the context of the framework for conserving the priority crop collections, as presented in point 5, specify the needs for upgrading and capacity building (and their priority) for EACH institute involved.

**Complete this table for each institute:**

Institute (listed in point 5 a and b):						
Priority	Upgrading/ capacity building activity (and specify in relation to the conservation activities listed in Annex 2)	Proposed start date	Proposed end date	Indicative Costs (USD)	Co-financing	Contribution in kind
1.						
2.						
3.						
4.						
5.						
Etc.						

## 7. Additional comments

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Please provide any useful comments or notes related to the regional conservation strategy.