GLOBAL STRATEGY FOR PLANT CONSERVATION

Draft Outline for the Paper

Background paper for the implementation of Target 9 of the GSPC

TARGET 9
"70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained"

1 Introduction

Plant genetic resources of crops and other major socio-economically valuable plant species are the biological base for food security and, directly or indirectly, support the livelihoods of every person on earth. Diversity of plant genetic resources is currently being lost in both the fields and the forests of rural people and in genebanks1. Promoting the conservation and sustainable utilization of the genetic diversity of crops and other major socio-economically valuable plant species will be essential as a basis to world food security and sustainable development.

While other targets focus on maintaining species and ecosystem diversity, target 9 recognizes the central role that within species genetic diversity plays in improving production and use of crops and useful wild species. The need to conserve this genetic diversity has long been recognized and supported by national and international activities, particularly the Global Plan of Action. Target 9 creates the appropriate framework and objective to secure the diversity needed to achieve key CBD objectives and the Millennium Development Goals

Although for crop plants, the emphasis to date has been on *ex situ* conservation, the value of maintaining crop genetic diversity *in situ* in production systems is being increasingly recognized. Farmers and rural people play a crucial role in the conservation and utilization of plant genetic resources on farm and in nature. The best of traditional knowledge and modern technologies will be needed to reach the target.

Natural ecosystems hold important socio-economically valuable plant species, including useful forestry species, endemic and threatened wild crop relatives, wild plants for food production and important medicinal and ornamental species. The genetic diversity of these species is essential to viable population maintenance and evolution, and is potentially an economically important component of natural ecosystems which cannot be maintained ex situ.
Unique and particularly diverse populations of these genetic resources must be protected in situ when they are under threat. This target will therefore be closely linked to other targets of the GSPC that focus directly on the conservation of plant species and resources in natural and semi natural areas.

Conservation of the genetic diversity of crops and other socio-economically valuable plant species will be difficult to promote without promoting sustainable utilization. Indeed much of the genetic diversity will be maintained within production systems. The crucial linkage between conservation and utilization should therefore be recognized. Further development of target 9 should therefore take the linkage with other target of the GSPC that are focused on the utilization of plant resources, into account. Target 13, "the decline of plant resources and associated local and indigenous knowledge

1 FAO's first report on the State of the World's Plant Genetic Resources for Food and Agriculture

innovations and practices that support sustainable livelihoods, local food security and health care, halted" for example focuses explicitly on the status of plants used by and important to local people.

1.1 Objective of the paper

This document will serve as the background paper to be used for a stakeholder consultation over the period August to September 2003 facilitated by the FAO, at the invitation of the Secretariat to the Convention on Biological Diversity (CBD), and undertaken in collaboration with the International Plant Genetic Resources Institute (IPGRI).

The background paper does not attempt a comprehensive review of the many initiatives and achievements in this area over the past decade[2] - the paper aims to facilitate the implementation and measurement of progress towards Target 9. Discussions pertain to: clarifying the scope of the target; establishing baselines; and establishing sub-targets, milestones and indicators of progress towards the target over time. Also addressed are the desirability of a flexible co-ordination mechanism and the relationship to crosscutting targets (3, 14, 15 and 16). Recommendations to the relevant stakeholders will be elaborated through further consultations.

The target refers to socio-economically valuable plant species as well as to crop plants and explicitly recognizes the importance of conserving indigenous and local knowledge as well as the genetic diversity itself. There are a large number of socio-economically valuable plant species which are not crops (e.g. Heywood estimates about 100,000 species used in some way or another) including important forage, agroforestry and forestry species, as well as important ornamentals, medicinals, crop wild relatives and plants with other uses such as for hedging. Conservation and use of genetic diversity of these different groups of plants involves different approaches and methods and is often driven by different forces. In this paper we discuss some of the key issues that will need to be confronted in order to achieve the target for the species selected in these different groups.

The way in which this target could be applied to selected forest tree species is a key issue which needs to reflect the special nature of forest biodiversity, its distinctive features and problems, and the specific international and national approaches to forestry. The conservation of substantial proportions of genetic diversity of selected forest tree species may call for distinctive solutions. The forest sector is globally driven by forces distinct from the ones governing agriculture, and conservation issues differ in important respects from non forest useful wild plant species. However, there are also some similarities with agricultural species with respect to the management of the genetic diversity of intensive commercial tree plantations. The vast majority of forest trees are found in situ, in natural or semi natural ecosystems where the conservation of a particular set of species, populations or genes is to be carried out taking into account other conservation / sustainable use efforts (conservation of forest estate; sustainable forest management plan or management plan for the protected area). These driving forces are well out of the scope (control) of forest genetic diversity sector. Forest management is a necessary condition to forest genetic diversity conservation. However, it is also the case that maintenance of genetic diversity has long been regarded as an important aspect of forest genetic resources conservation and that there is considerable knowledge and experience available of the issues involved.

1.2 Current existing instruments to be used for this target

The achievement of this target will involve conservation actions by countries and national institutions throughout the world on the selected species. Over the past decades, countries and international agencies have worked together to develop a range of instruments and procedures that can

[2] See http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPS/pgr/default.htm and http://www.biodiv.org/programmes/areas/agro/

be use to support and stimulate national actions and improve coordination between countries and agencies. The international instruments that are likely to provide important contributions to successful achievement of this target are described in this section.

It is noteworthy that at policy level, the Commission on Genetic Resources for Food and Agriculture with its Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (ITWG-PGR) address issues specific to plant genetic resources for food and agriculture. Regarding forest issues, the United Nations Forum on Forests promotes the management, conservation and sustainable development of all types of forests and the FAO Panel of Experts on Forest Gene Resources Panel covers a broad range of technical and scientific areas in the field of forest genetic resources.

1. **Instruments related to Agricultural crops**

   Countries have adopted and/or are committed to the implementation of the following instruments at national level:

   The special nature of agricultural biodiversity, its distinctive features and problems needing distinctive solutions was recognized in decision II/15 of the CBD. In this decision the COP took note the Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture developed by member countries of the Food and Agriculture Organization of the United Nations (FAO) through the FAO Commission on Plant Genetic Resources (now the Commission on Genetic resources for Food and Agriculture), and the recommendation for strengthening it expressed in chapter 14 of Agenda 21.

   International Treaty on Plant Genetic Resources for Food and Agriculture

   The FAO Conference (through Resolution 3/2001) adopted the International Treaty on Plant Genetic Resources for Food and Agriculture, in November 2001 and this was welcomed by the CBD COP-6. This legally-binding Treaty covers all plant genetic resources relevant for food and agriculture. Its objectives are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of benefits derived from their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security. It contains four supporting components:

   1. The Global Plan of Action on the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (GPA) with its 20 priority activities that are grouped in four themes *a) In situ* conservation and development b) *Ex situ* conservation, c) Use of Plant Genetic Resources and d) Institution and capacity building

   2. Ex-situ collections of Plant Genetic Resources for Food and Agriculture held by the International Agricultural Research Centres of the Consultative Group on International Agricultural Research and other International Institutions

   3. International Plant Genetic Resources Networks

   4) The Global Information System on Plant Genetic Resources for Food and Agriculture which contains a) The World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture and b) Report on the State of the World's Plant Genetic Resources for Food and Agriculture

2. Instruments related to Forest species

The Global Plan of Action on the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (GPA)
The GPA addresses a few tree species of common interest to agriculture and forestry (domesticated fruit and crop trees, forage trees and shrubs). Forest ecosystems, as a whole, are also a unique repository of wild relatives of cultivated crops.

The International Treaty on PGRFA
The Treaty applies to all plant genetic resources for food and agriculture. . Annex 1 which lists species or genera to which the Multilateral System for Access and Benefit Sharing applies specifically includes one forestry genus, *Prosopis*, and several woody species such as *Artocarpus*, *Citrus*, *Cocos*, and *Malus*.

Intergovernmental Panel on Forests (IPF) and the Intergovernmental Forum on Forests (IFF)
There is no mention of forest genetic diversity in the IPF/IFF proposals for actions. But initiatives and instruments contributing to overall forest conservation, protection and management, also contribute to the conservation of forest genetic diversity (including UNFF, IPF/IFF, Forest Principles, and others below).

3. Other instruments

The Programme of Work on Agricultural Biodiversity of the CBD (COP decision V/5)
Decision III/11 of the CBD established the Programme of Work on Agricultural Biodiversity to establish a multi-year programme of activities on agricultural biological diversity aiming, first, to promote the positive effects and mitigate the negative impacts of agricultural practices on biological diversity in agro-ecosystems and their interface with other ecosystems; second, to promote the conservation and sustainable use of genetic resources of actual or potential value for food and agriculture; and third, to promote the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

Decision II/15 took note of the Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture developed by member countries of the Food and Agriculture Organization of the United Nations (FAO) The Work programme on agricultural biodiversity under the CBD also recognizes the contribution of the Global Plan of Action (Decision III/11 and Annex 5 of decision V/5) for the Conservation and Sustainable Utilization of Plant Genetic Resources and makes reference to other elements of the Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture (Annex 5 of decision V/5 and Annex 1 of decision VI/5).

The Expanded Programme of Work on Forest Biological Diversity of the CBD (Decision VI/22)
The Conference of the Parties at its sixth meeting adopted the expanded programme of work on forest biological diversity (decision VI/22, paragraph 10, annex). This programme of work is to be implemented by Parties in the context of their national priorities and needs. The Forest Biological Diversity Work Programme of the CBD is the only global framework relevant to forest genetic diversity. The following part of the expanded work programme is specifically referring to the conservation of forest genetic resources:

Programme Element 1: “conservation, sustainable use and benefit-sharing”; Goal 4: “To promote the sustainable use of forest biological diversity”; Objective 4: “Develop effective and equitable information systems and strategies and promote implementation of those strategies for *in situ* and *ex s*itu conservation and sustainable use of forest genetic diversity and support countries in their implementation and monitoring” (decision VI/22, Annex).

2 Scope of target 9: "70 per cent of the genetic diversity of crops and other major socio-economically valuable plant species conserved, and associated indigenous and local knowledge maintained"

A. Is the estimated 70% of the diversity of the chosen species that will be effectively conserved realistic?

"Theory and practice demonstrate that, with an appropriate sampling strategy, 70% of the genetic diversity of a crop can be contained in a relatively small sample (generally, less than one thousand accessions). For any one species, therefore, the target is readily attainable. For some 200–300 crops, it is expected that 70% of genetic diversity is already conserved ex situ in gene banks. Genetic diversity is also conserved through on farm management. By working with local communities, existing associated local and indigenous knowledge can also be maintained. Combining genebank, on farm, and other in situ approaches, the target could be reached for nearly all crops in production, as well as major forage species" .3

Forestry and agroforestry species, useful medicinal plants, crop wild relatives and other useful wild plant species present their own distinct challenges with respect to implementing this target. In the first instance, there are a very large number of useful plant species from which some selection would need to be made. Secondly, the procedures required to identify, and therefore conserve, 70% of the diversity have yet to be developed and rigorously tested on wild populations to the same extent as they have been on crop plants 4. However, provided distribution of a species has been broadly established and populations established over its ecological and geographical amplitude, strategies to conserve 70% of diversity could probably be established.

However, for forestry, apart from a few tree species of major socio-economic value, this assumption may be questionable because the sustained management of the forest estate is a prerequisite to the conservation of forest tree genetic diversity and this is difficult to achieve in many cases. The genetic diversity of wild, highly variable, undomesticated forest trees is conserved on site. There are very rarely many, if any, quantitative data on population size or decline upon which to characterize the genetic diversity of forest tree species, at least in tropical areas, which account for 80% of the world total forest tree species. The assumption is also based on a small number of agricultural crops of major importance to human beings, cultivated for a precise goal and determined use. Many forest species have more than one specific use, and balancing the value of the trees and their uses is a difficult and subjective exercise. Ranking forest trees on the basis of their conservation status (Red Lists) would be misplaced and would ignore the utilitarian value of the trees. On the other hand, a strictly utilitarian (commercial) approach (on the basis of which human group?) would sideline important services provided by trees and shrubs, not only in terms of environmental services, but also in relation to their non commercial uses (social, ethic, religious uses). This suggests that for forest trees, species selection will be a key problem for target implementation.

B. What issues need to be addressed to ensure the implementation of the target?

In addressing this target a number of issues need to be addressed:

3 Extracted from UNEP/CBD/COP/6/INF/21

4 See MC Neel and MP Cummings "Genetic consequences of ecological reserve design guidelines: An empirical approach" Conservation Genetics : 4: 427-439. 2003

1) Selection of species.

What crop and socio-economically valuable species should be included and what criteria should be used to select crops and other species?

2) The proportion of diversity conserved

Is the suggestion of 70% realistic and how might it be achieved for crops species and for forestry, agroforestry, medicinal, ornamental and other important plant species?

3) Conservation methods and approaches

What conservation methods are most appropriate for achieving this target with the selected species and how might different actions and approaches be most effectively integrated to optimise the diversity conserved?

4) The maintenance of associated indigenous and local knowledge

What approaches are appropriate for the maintenance of associated knowledge and what could realistically be achieved by them?

1) Selection of species

a. **Crop Species**

FAO (1998) suggested that 30,000 plant species are edible, and that about 7,000 have been cultivated by humans for food at one time or another. In contrast, it is currently estimated that only 103 crops provide 90% of per caput plant based food supplies.

Countries supporting the implementation of the FAO Global Plan of Action will have identified which species should have priority in their conservation efforts depending on national distribution, production and use, and ethnobotanical significance and these should be the primary objectives for the implementation of this target. However, in implementing this target, it is important that specific local needs and uses are recognized, that locally important crops and other species are included in country conservation activities and it would be useful to develop commonly agreed criteria to ensure that this will occur. An appropriate starting point will be the criteria already adopted at national level to which internationally significant aspects could be added. Important elements are likely to include contribution to per caput food supplies at local or national levels, contribution to rural income, importance in farming system etc.

b. Tree Species

There is no complete list of the world's trees (WCMC estimates 100,000.), let alone any adequate or complete assessment of their conservation status. Even basic distribution maps are lacking for most tropical tree species. That means that the majority of assessments made at species level for species conservation purposes are based on estimation, inference and projection from the most basic data, e.g. general estimates of loss of forest cover. In most tropical areas, where high rates of loss of forest cover are still occurring, most tree species could be assessed as vulnerable or threatened under the IUCN or WCMC criteria.

The FAO Panel of Experts on Forest Gene Resources regularly compiles and updates regional lists of priority tree species, specifying their main uses and priorities for action in exploration, collection, conservation and wise use of their genetic resources (including improvement and breeding). While the priority lists are based on country-

derived information, special attention is paid to those species that are of actual or potential importance to more than one country and for which action thus has an international dimension.

The Panel lists are based on experts' opinion and concentrate on tree species for which attention is needed at genetic level. They do not include tree species, even very important ones, for which no special programme is needed, or for which conservation status is already satisfactory. This suggests that, in fact, there may be a number of socio-economically valuable forest tree species for which a substantial proportion of the genetic diversity is maintained.

c. Crop wild relatives and other wild socio economically important plant groups

The wild relatives of crop plants, which include the progenitors of crops, as well as species more or less closely related to them, constitute an increasingly important resource for improving agricultural production and for maintaining sustainable agroecosystems. They have contributed many useful genes to crop plants, and modern varieties of most crops now contain genes from their wild relatives. The wise conservation and use of crop wild relatives are essential elements for increasing food security, eliminating poverty, and maintaining the environment. The use of managed forests, protected areas to maintain diversity of useful plant species such as crop wild relatives is also increasing. Other major socio-economically important species, such as medicinal plants and other non wood forest products, could be selected on a case-by-case basis, according to national priorities.

2) Diversity

The objective of conservation efforts for plant genetic resources should be to conserve as much of the genetic diversity of a species as possible with an emphasis on useful diversity. This diversity, which can be seen as heritable differences in e.g. morphological characteristics, physiological traits, disease resistance, and stress tolerance, reflects differences in genes and gene sequence at the DNA level.

The target identifies 70% as an appropriate objective for conservation of intra-specific genetic diversity. Sampling theory and work on development of core collections suggests that a collection of 2,000 accessions or 10% of a collection will include 70% of the diversity (Brown, 1989). Subsequent studies have suggested that the target of 70% is achieved providing appropriate sampling strategies are use which ensure the geographic and ecological amplitude of a species is covered. Above 70% substantially larger numbers are needed to capture additional diversity. Other workers have suggested much smaller sample sizes are needed to capture the diversity present in a collection or species (Lawrence, 2002). An appropriate working hypothesis for crop plants would therefore be that crops, for which reasonably representative global collections exist of more than 2000 accessions, might well contain 70% of the genetic diversity of the crop. Determining the numbers of crops for which collections exist that might satisfy these criteria could provide an entry point for implementing this target.

For wild species a different approach may be needed based reflecting the work of Neel and Cummings (2003) and others, and the fact that for many species substantial variation is usually found within populations. Thus, maintenance of a small number of carefully selected populations covering the species ecogeographic amplitude may well, in practice, achieve the target. A baseline might be developed by determining if , say 5 – 10 populations of this type existed in protected areas, granting that the effectiveness of the protection and the management of the populations would also have to be determined.

Although for crop plants, the emphasis to date has been on *ex situ* conservation, the value of maintaining crop genetic diversity *in situ* in production systems is being increasingly recognized. The use of protected areas to maintain diversity of useful plant species such as crop wild relatives is also increasing. By combining ex situ and *in situ* methods in complementary ways which take account of uneven gene distribution and focus on centres of diversity, it is expected that 70% of the diversity of the chosen species will be effectively conserved.

Our knowledge of genetic diversity of selected forest tree species obtained using different types of genetic markers is quite substantial although inadequate for achieving the target. However, developing general methods to estimate the genetic diversity of forest trees through a few quantitative criteria has so far not been successful. The issue of genetic diversity is not well addressed in any criteria and indicator process, except perhaps in the Pan-European Process. Many current indicators of genetic diversity are not effective or lack practicality, and their relevance to sustainable forest management is tenuous.

Some useful developmental work is taking place in the Pan-European, Montreal and India-Bhopal Processes, but the other Processes are finding genetic diversity indicators very difficult to implement. Further development and testing of different surrogate attributes is an urgent necessity, but the impetus for this appears to be waning. Many countries that are participating in criteria and indicator processes are having difficulty with assessing this component of sustainable forest management.

An important early activity in the implementation of this target will be some further work that quantifies the amount and status of conservation efforts for a number of socio-economically important wild plant species including forest trees. This would include determining presence of populations of such species in protected areas coverage of ecological and geographical amplitude of the species by protected areas, and the existence and status of ex situ activities. The amounts of genetic diversity in such populations could also be determined. Since substantial information of this type already exists for temperate species the emphasis of such work should be on tropical forest species.

3) Conservation methods and approaches

Both ex situ and in situ conservation actions will needed to achieve the target. They will need to be used in complementary ways to maximize the diversity conserved. The specific combinations are likely to differ substantially depending on species. Crops are likely to involve substantially more ex situ conservation than other socio-economically valuable species. It may have to be accepted that in the early days of implementation of the target little control can be exercised over in situ conservation actions beyond the determination that a species occurs in some kind of protected area. However, some countries already have experience of in situ conservation of wild species (including forestry species) through “gene management zones” which can be utilized by others

4) The maintenance of associated indigenous and local knowledge

This aspect of the target probably presents the greatest challenge. Methods that are acceptable to indigenous communities are still being developed and discussed in international fora and the conservation community has little experience of working in this area. In addition, for most of the existing ex situ collections, the indigenous and local knowledge associated with the accessions has not been maintained. Some further analysis is needed of what is available, how it might best be maintained and what future procedures need to be adopted to minimize further loss. It may be best to reformulate this element as a more or less separate sub-target with clear overall achievable objectives.

3 Sub-targets and milestones and coordinating mechanism

In order to further develop the target and to achieve progress towards implementation of the target clear time bound quantifiable sub-targets need to be developed. The direction towards achieving these sub-targets can be set out by identifying milestones for each of the sub-targets and making recommendations for a flexible coordinating mechanism for this target.

3.1 Sub-targets

A. What sub-targets can be developed for the target?

In developing sub-targets and milestones it is appropriate to reflect existing international plans and objectives that are relevant to conservation of genetic diversity. These include, for example, the specific objectives in the GPA on ex situ and in situ conservation. Possible sub-targets could include components on:

- crop plants
- socio-economically valuable non crop species
- indigenous and local knowledge

3.2 Milestones:

B. What milestones can be identified to achieve each sub-target?

Plant Genetic Resources for Food and Agriculture

Milestones related to Food and Agriculture should take into account the timetable established for the Second Report of the State of the World on Plant Genetic Resources for Food and Agriculture

Some examples of milestones are:

Second Report on the State of the World's Plant Genetic Resources

- A mechanism has been put in place to gather the required information of crops that are selected under Target 9.
- Baseline information that is required for the implementation of this target is included in the Second Report on the State of the World's Plant Genetic Resources.

Crop wild relatives and other wild socio economically important plant groups

- Identification of what are the urgent tasks for the conservation of wild relatives and other wild socio economically important plant groups at risk.

Forest trees

- Outputs of the Global Taxonomic Initiative (under the CBD) working on better estimates of the world's number of forest tree species
- Definition and identification of important forest tree species according to their distribution (FRA) and their genetic use (REFORGEN and Gene Panel).
- Definition and identification of genecological zonation at forest tree population level ;
- Eco-regional classification taking into account the country-based genecological classifications;
- Preliminary statistics on the level of in situ and ex situ conservation of important forest trees from REFORGEN data base;
- Meetings of Panel of Experts on Forest Gene Resources and other expert groups;

- First Report on Sate of the World's Forest Tree Genetic Resources (not before 2007)
- IUCN and WCMC Red Lists of Forest Trees

3.3 Coordinating mechanism

Central to the achievement of the target will be the development of effective coordinating mechanisms. Individual countries are unlikely to want to take on the responsibility for implementing the target for a single species except in the cases of endemic crops or socio-economically valuable species. Collaboration between countries will be both desirable and necessary and is in the tradition of plant genetic resources conservation 5. Coordinating mechanisms should be identified that builds on existing mechanisms of cooperation on the national, regional and international levels. In any case, a flexible national coordinating mechanism should:

i. involve stakeholders involved in the implementation of national commitments related to production lands (such as forests, agriculture, rangelands, etc.); and
ii. expand on regional existing cooperation and networks (e.g. crop networks)
iii. include commitments made by countries at the international level on food and agriculture and the environment (e.g. the International Treaty on PGRFA, the GPA, Forest related commitments, etc.)

C. What flexible coordinating mechanism can be used to achieve this target?

Agricultural crops:
It was proposed that Instruments that are part of the Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture (described in chapter 1.3) are encouraged to be used for the development of Target 9 in order not to duplicate existing mechanisms for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture. This will require namely endorsement by the governing body and by the Commission on Genetic Resources for Food and Agriculture.

Forest Trees:
Meetings of Panel of Experts on Forest Gene Resources may be useful in coordination of activities related to FAO's State of the World's Forest Tree Genetic Resources.

4 Review & assessment of existing baseline and indicators

In order to monitor progress towards achieving the target, baseline data and a series of indicators need to be reviewed and assessed. Ideally this would draw upon relevant national and international existing data sets. Gaps in the baseline data need to be identified and as a consequence further baseline data and indicators may need to be developed to ensure the monitoring of progress towards achieving the target. ***Stakeholder inputs are sought on the issues below.***

4.1 Baseline

A. What baseline data do we have available for this target?

The following information sources were proposed to provide baseline for this target:

- World Information and Early Warning System (WIEWS) on PGRFA

5 See the IT on PGRFA: http://www.fao.org/ag/cgrfa/itpgr.htm#text

- Report on the State of the World's on PGRFA
- The ongoing implementation of the GPA
- REFORGEN - FAO information on Forest Tree Genetic Resources (after extensive data gathering and checking). 1995-2003
- Country Reports on the State of Forest Tree Genetic Diversity (approx. 50 country reports available at the end of 2003);
- List of important tree species by FAO Panel of Experts on FGR

Stakeholders are invited to both comment and provide input to this list of available baseline data.

4.2 Indicators

B. What indicators could we use to monitor the implementation of this target?

- Indicators for monitoring the implementation of the GPA the are currently being developed
- IPGRI & FAO's ongoing development of indicators of the loss of PGRFA
- Indicators of agricultural biodiversity developed by the OECD
- REFORGEN - FAO information on Forest Tree Genetic Resources (after extensive data gathering and checking). 1995-2003
- Country Reports on the State of Forest Tree Genetic Diversity (approx. 50 country reports available at the end of 2003);
- List of important tree species by FAO Panel of Experts on FGR
- Other C+I for genetic management?

Stakeholders are invited to both comment and provide input to this list.

5 Relationship and cross-sectoral relevance of the target

Others targets of the GSPC such as target 3 (models), target 14 (education and awareness), target 15 (capacity building and resources) and target 16 (networks) should be considered as cross-cutting targets related to the achievement of all the other targets.

A. Cross- cutting targets

Stakeholders are invited to provide input on the relationship with the following cross-cutting targets of the GSPC

1) **TARGET 3. "Development of models with protocols for plant conservation and sustainable use, based on research and practical experience"**

2) **TARGET 14. "The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes"**

3) **TARGET 15. "The number of trained people working with appropriate facilities in plant conservation increased, according to national needs, to achieve the targets of this strategy"**

4) **TARGET 16. "Networks for plant conservation activities established or strengthened at national, regional and international levels"**

6 Recommendations, proposals and suggested timetable for action

A. What recommendations, proposals and suggested timetables for action can be formulated for parties, international/regional agencies, regional initiatives and the CBD?

Stakeholders are invited to provide their recommendations, proposals and suggested timetable on how to implement the target. Suggestions can be provided under the following headings:

- Actions by Parties.
- Actions by International/Regional agencies charged with biodiversity conservation and sustainable use of natural resources, in relation to their responsibilities under international conventions and other relevant international/regional initiatives.
- Actions in relation to regional initiatives for plant conservation.
- Actions by CBD including the secretariat (Executive Secretary), Advisory Bodies (E.G. SBSTTA) and COP.

7 REFERENCES

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