INTERNATIONAL CONFERENCE AND PROGRAMME

FOR PLANT GENETIC RESOURCES

I C P P G R

Introductory Guidelines for

COUNTRY REPORTS

Food and Agriculture Organization of the United Nations

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COUNTRY REPORTS

THE CHALLENGE

The future of each nation and of humanity as a whole depends on how the present generation takes up the challenges of developing policies and actions for sustainable food production.

Providing food for the future is an international concern and a multidisciplinary challenge. Soil conservation, pest control, planting and harvesting techniques, irrigation and post-harvest storage are all significant facets of the problem and will be important contributors to the solution. International trade and economic policies are also relevant. So too are genetic resources, the naturally occurring raw materials of crop, forest and livestock improvement including the remnants of traditional varieties that have survived the modernization of agriculture and the modern, highly adapted lines with a carefully selected but inevitably narrow genetic base.

Genetic resources are perhaps the most valuable and strategically important assets that your country holds. While few countries can claim to harbour in their fields the wild progenitors of major food, fibre or timber species, many more have indigenous crops that could potentially meet much wider needs than they do at present. Moreover, scientific advances in breeding and genetic engineering techniques are opening the way for very distant relatives or totally unrelated species to contribute to the genetic improvement of economically important plants.

FAO, as the United Nations agency central to ensuring food for the future, is planning a major international conference on plant genetic resources in the northern summer of 1996. It will be the fourth technical conference sponsored by FAO on this subject and the first for more than a decade. During that time it has become much clearer that the problems of conservation and sustainable use of genetic resources will not be resolved at the technical level alone. The forthcoming Conference, and the whole process leading up to it, will address the need for not only technical advances but also national and international policies, plans and values to be factored in to the equation.

THE CONFERENCE

The International Conference and Programme for Plant Genetic Resources - ICPPGR - will focus on the conservation and sustainable use of these precious resources.

Many years of preparation by FAO, which established the International Undertaking on Plant Genetic Resources and set up the Intergovernmental Commission on Plant Genetic Resources by resolutions of the twenty-second FAO Conference in 1983, have set the scene for ICPPGR. Over 100 countries have made commitments to policies of conservation and exchange of Plant Genetic Resources by signing the Undertaking. A similar number have contributed to the development of international policies and programmes through their membership of the Commission and have taken part in monitoring and implementing them.

The Twenty-seventh Session of the FAO Conference (1993) endorsed the aims and strategy of the International Technical Conference and its preparatory process and "strongly emphasized its importance." It has been stressed by the FAO Commission on Plant Genetic Resources (1993) that this process must be participatory and country-driven. The Commission stated that the programme "should aim to develop consensus, and commitment from countries to a Global Plan of Action, and in accordance with the recommendations of Agenda 21." In this regard, Resolution 3 of the Nairobi Final Act of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity (1992) recognized "the need to seek solutions to outstanding matters concerning plant genetic resources." With the mandate of Member Nations and in cooperation with the Interim Secretariat of the Convention on Biological Diversity, FAO is initiating the International Conference and Programme for Plant Genetic Resources .

It is of critical importance that the most up-to-date knowledge and the best information available at the time be gathered together for the ICPPGR. These will be essential resources for discussions leading to the development of the Global Plan of Action. National and international organizations are already working to bring together an overview of the current status of the world's plant genetic resources in the "State of the World" report which will define the starting point from which the Conference will seek to agree to move forward in the following decade. This report, to which countries are encouraged to offer input, will serve to identify problems to be addressed by the Global Plan of Action.

FAO is determined that the Global Plan of Action will reflect the genuine needs and priorities of the world community. This Plan should be capable of addressing not only the major needs of the world as a whole for the genetic improvement of its crops and other economic plants, including forest species but, in particular, needs of all countries to utilize their plant genetic resources more effectively and to obtain those they need for improving their plant production to feed their people.

THE ICPPGR PROCESS

The 1996 Conference should be seen not as a single event but as the high point of a process of review and re-focus of plant genetic resources activities at the global, regional and national levels which will set new directions for, at least, the next ten years.

The first and perhaps the most critical step in the ICPPGR process will be the preparation of Country Reports. It is anticipated that all other steps - preparation of a report on the State of the World's Genetic Resources; formulation of the costed Global Plan of Action with its priorities and implementation programmes; regional planning and discussions; national capacity building; and identification of emergency actions (such as urgent collecting expeditions) to be taken or commenced even before the Conference is convened - will be based largely on the Country Reports. These reports, and the debates that will be integral parts of the processes of preparing and sharing them, will enable the conference to summarize achievements, identify critical issues and set new directions where appropriate.

A concrete programme of national capacity building, an important element of the overall process, will identify gaps and emergency needs and propose projects to address the most urgent problems immediately. It will assist countries in national planning and evaluation of genetic resource conservation and utilization systems and will actively facilitate improved communication and information systems.

The main measure of the success of the ICPPGR will be the quality of the Global Plan of Action. It is abundantly clear that such a plan could not be prepared from a factual account of the *status quo* alone. The visions and capacities of every country participating, the plans and goals of their governments and the needs and wishes of their people must also be channelled into the decision-making process. Participating, that is, in life on this finite and fragile Earth.

COUNTRY REPORTS

To take full advantage of the opportunity provided by the ICPPGR, FAO encourages every country to prepare itself by undertaking the preparation of a Country Report. And, of course, FAO would like EVERY country to participate in the ICPPGR process as a whole.

These Guidelines are intended for countries, thus references to "you" and "your" are obviously made in this sense and should not be interpreted as directed to individuals personally.

The ICPPGR is not about assessing the performance of individual countries in a judgmental way. It is about assessing how far we, as a community of nations, have progressed in the conservation and use of plant genetic resources; whether the routes we have followed in the past are entirely appropriate for the future; or whether new values, new visions and greater experience will lead us to set other goals for the next phase of our work. But such reappraisal must be based on practical experiences and identified needs.

The preparation of a Country Report is the first critical step in ensuring that the ICPPGR process is able to give informed consideration to your country's position. The action of preparing the Country Report will provide your country with the incentive to assess national needs, capabilities, shortcomings, constraints and opportunities frankly and honestly. Such an evaluation could lead to a better definition of national objectives, better co-ordination among national policies and national bodies, and thus bring tangible benefits to the country even before the Conference takes place. The Country Reports should help identify current problems, define subsequent needs and thus identify the type and magnitude of international assistance needed. FAO's expectation is that, by going through this exercise, your country will be able to contribute more to the Conference and gain much more from it. Country Reports will have an essential role in determining the directions in which the Conference will seek to move forward.

Subject to resource constraints, FAO may be able to assist in this assessment, but only if the invitation to do so comes from the country itself. Very limited funds may be available to finance report preparation meetings especially those involving scientists, NGOs, the private sector, farmers groups, etc., in addition to government officials. Some on-site expert assistance may also be available. If assistance is required, please communicate with The Secretariat, International Conference and Programme for Plant Genetic Resources, FAO, Rome, to discuss your country's plans and needs.

GUIDELINES

The purpose of these Guidelines is to provide a framework for use in the preparation of Country Reports. With so many of these reports to be taken into consideration in determining the final outcome of the ICPPGR, there are obvious advantages in having a measure of uniformity of presentation. However, FAO recognizes that there are major differences among countries in many matters relevant to plant genetic resources and that these differences must be reflected in the Country Reports. Not all aspects of the reports call for complete uniformity. **The Guidelines are not a questionnaire - we do not intend or expect your country to answer each question or to treat the Guidelines as a form to be completed.**

With these Guidelines, FAO is enclosing a copy of information compiled as received from a previous questionnaire on crop genetic resources. The intention is not to duplicate this earlier questionnaire, but to supplement the quantitative information already received with a more in-depth, critical and reflective assessment by the government. Similarly, the information on forest genetic resources expected from the country reports is different from the detailed information requested in the questionnaire already received by the countries on forest genetic resources.

The Guidelines are intended to facilitate the process of preparing your country's report, not to constrain it. The most important thing is that your country's report says everything your country wishes it to say.

FAO is interested in obtaining a critical analysis of your country's plant genetic resources systems as you see them, and your country's suggestions on the kind of Global Plan of Action that would accord with your national values and meet your national needs. If the process is to succeed, each country must prepare a report that is rigorous, objective and visionary. FAO's role is to be the facilitator, not the architect, of the Global Plan. Countries, not FAO, will be the authors and the main beneficiaries of it.

Before the main Conference takes place, FAO expects to organize a series of **sub-regional meetings** at which it is intended that Country Reports (possibly while still in draft form) will be submitted and discussed. These meetings will provide the opportunity to identify regional priorities for possible inclusion in the Global Plan.

Please advise FAO if the government wishes any part of your Country Report to be treated as confidential. We will, of course, respect any such wishes but we believe it would be best to submit a report that could be made available to other participants in the ICPPGR. If your government wishes to convey confidential information to FAO with its report, please consider the option of writing a separate letter.

How to begin :

1 Appoint one office, and within the office one person, as the main contact person with FAO for the preparation of the Country Report or for the whole ICPPGR process if this seems appropriate. Keeping in mind that the ICPPGR process involves both scientific and significant policy matters with financial implications, some governments may want to appoint two contact points to act jointly on matters concerning the process, or consider the appointment of one contact point competent to address the full range of issues involved. Logically, this person (or persons) might become the *national co-ordinator* or *secretary of a national committee* for this process. Please inform FAO of the name, postal address, electronic mail address, phone and fax numbers of the person immediately. (Until such a contact point is officially designated, FAO shall assume that it is acceptable to communicate on technical matters with the contact point on this subject designated previously by the Government.)

2 Assemble representatives of all relevant interest groups for a preliminary meeting to discuss the task in general terms. Cast the net as widely as you wish but be sure to include at least the following :

- the national planning authority
- government agencies responsible for agricultural crops, forestry, medicinal plants, rural land use policy, indigenous culture, conservation, genetic resources
- the users of genetic resources - the private sector, crop and tree breeders, plant biotechnologists, land reclamation experts, etc.
- scientific and technical experts in the study and manipulation of genetic resources
- non-governmental organizations active in agriculture and conservation
- the agency most likely to lead your delegation to the 1996 Conference
- representatives of any international organizations located in or active in your country whom you feel may be able to contribute.

3 At this meeting - or soon after it - identify a smaller group to co-ordinate the work of preparing the report and 2 or 3 people within this group to actually compile it. The *national co-ordinator* should be a member of this group but we suggest he/she not be one of those responsible for actually compiling the report because of the amount of work involved. It is recommended that non crop (forest) species specialists are included in the drafting group as relevant, considering the relative importance of these groups of species in the country.

4 Ensure that each member of the co-ordinating group has read these Guidelines carefully and understands the purpose and nature of the task. This will be the group whose initiative and hard work will be reflected in the quality of the report.

5 Also ensure that the group has read *Agenda 21*, especially Chapter 14 G - Conservation and sustainable use of plant genetic resources for food and sustainable agriculture - and Chapter 15 - Conservation of biological diversity. The *Convention on Biological Diversity* would also be useful background reading.

6 A common failing of endeavours such as this is that too much time is spent collecting background information, leaving too little time to analyse and make good use of it. We suggest that you start work on all chapters of the report at an early stage leaving ample time for reflection and analysis.

7 Continue to meet frequently and consult widely outside the co-ordinating group. If a specific problem arises, set up an *ad hoc* working group, with very specific terms of reference and a deadline date for reporting, to deal with it.

Framework

Consistency

Country Reports will be much more useful in the ICPPGR process if they all follow a consistent framework to facilitate comparisons. However, although these Guidelines contain many questions which we think the government should try to address in the Country Report, not all questions will be relevant to all countries and the government should choose what seems to be the best way to present the material it wishes to include. We strongly suggest that your government not address points on which it has nothing significant to report merely because questions about them are included in the Guidelines. Again, the Guidelines are not a questionnaire. Questions are provided as a means to help shape your country's response and to provoke rigorous, creative analysis.

Length

We suggest you keep the report brief. On no account should it exceed 60 pages - 25 or 30 may be enough. The smaller it is the more effective it will be, simply because you will be able to distribute

more copies, both within the country and internationally, and more people will find time to read it. You may wish to consider providing a brief report supplemented by annexes containing more detailed information. If possible, it would assist the ICPPGR Secretariat if your report could be submitted on computer disk (in any widely used wordprocessing programme) as well as in paper form.

Style

To keep the report within the recommended length the style should be focused, direct and succinct. To achieve maximum impact it should be analytical, practical and realistic.

Coverage

Remember that this report is part of your national contribution to an international event. Therefore it should dissect out your national priorities and your proposals for international action. Do not dwell too much on domestic issues that you could resolve domestically.

Suggested chapters

It is suggested that the report be arranged in about eight short chapters, dealing with the matters outlined in the remainder of this section of the Guidelines. Please use your discretion as to whether to split a chapter in two if you feel that, by its length, it makes the report unbalanced, or to roll two short chapters into one. On the other hand, try to avoid the type of uneven treatment that results from chapters being drafted by different people.

Consider using these chapter headings :

1. **Introduction to (name of country) and its agricultural sector**
2. **Indigenous plant genetic resources**
3. **National conservation activities**
4. **In-country uses of plant genetic resources**
5. **National goals, policies, programmes and legislation**
6. **International collaboration**
7. **National needs and opportunities**
8. **Proposals for a Global Plan of Action**

FAO's suggestions as to what might be included in each chapter are outlined below.

Although overall objectives are the same in conservation and use of both groups of plants, programmes and activities are often different for forest and for crop species. This is due to differences in biological characteristics, current level of knowledge on the species, utilization/management conditions and practices, and breeding strategies which are focused on population improvement rather than development of varieties. While specific suggestions concerning forest species are given in the appropriate chapters, you may wish to consider the alternative of providing information on forest genetic resources in a separate annex to your country's report.

We have provided many questions that should be asked **before** deciding what to write, but we do **NOT** propose that you present your report in the form of answers to all these questions.

Chapter 1

Introduction to (Country) and its Agricultural Sector

In this chapter you should present a "thumb-nail sketch" of the country. Aim to provide just enough information to allow a person who is quite unfamiliar with the country to relate to what you will write in the remainder of the report. The chapter might include :

- basic information on the size and location of the country; its main plysiographic and climatic features; the human population; the main farming systems and crops/plant products and the degree of reliance of the country on these products for local use and for export; the main forest types and the rate of decrease or increase of forest areas;

- a brief profile of the agricultural sector, in 2 or 3 paragraphs, including the size and nature of farm enterprises (commercial, subsistence etc.), seed supply systems (is most seed purchased or sources on-farm?), and the role of national and foreign private companies;

- a description, in 2 or 3 paragraphs, of recent trends in plant production and what you regard as the main reasons for these trends. Have crops suffered major losses from pest and disease attacks, droughts etc. in recent years? If so how were local or introduced crops / varieties affected;

- a map of the country, marking the places and regions mentioned in the report if you think it necessary.

If possible, keep this chapter to less than 5 pages, including maps.

Chapter 2

Indigenous Plant Genetic Resources

"If the wild and primitive material ... is deemed to be of value to-day, it is our responsibility to preserve it for future generations." (Frankel, 1970, p. 486)

In this chapter describe and assess your country's naturally occurring plant genetic resources assets.

Forest Genetic Resources

Many forest species, including species of social and economic importance, are used and managed in natural forests (not in plantations), with renewal of the stands through natural regeneration (which can be complemented sometimes by planting or sowing with materials collected in the same area/population). Foresters often deal with wild rather than domesticated material. Please give information on (i) the status of important species or groups of species which are mainly or totally harvested, and managed, in natural forests, (ii) programmes and measures aimed at sustainable management of these natural forests, thus contributing to the conservation of the genetic resources they contain, (iii) important species or groups of species which are threatened at species or provenance level in the country. (You may wish to include information concerning forest genetic resources in a separate annex to your report.)

Other Wild Species and Wild Relatives of Crop Plants

Amongst the country's natural vegetation, what wild progenitors or known wild relatives of current or potentially important commercial agricultural, forestry, pastoral or medicinal plants are found? You might list any such species and give, in brief summary form, the most important information about them.

Which of these plants still available in the wild? Are they in imminent danger of genetic erosion? What is the cause of erosion? Is the government able to control or prevent it? Is there an urgent need for outside help?

Do you believe there may be "unique" genetic diversity of economically or socially important plants or their relatives present in the wild in your country that has never been utilized in the development or improvement of the cultivated varieties? If so, to what kinds of adaptive traits exist in this germplasm resource?

Are there species in the wild that have not been developed commercially but that are important indigenous sources of plant products? If so, please list these and give some brief information about them.

Landraces ("Farmers' Varieties") and old cultivars

What information is available concerning the use of traditional varieties and of improved varieties?

Which old cultivars or landraces of crops are still maintained and used by farmers? Why do farmers still use them? Does the government encourage or discourage their use? What is the reason for this policy? What assessments have been made of the significance of traditional crops and plant varieties on farms and/or in home gardens for the farm economy and for household food security?

In what ways do local people value indigenous plant genetic diversity? Are they committed to conserving it? If so, are their conservation methods documented?

Do government land use policies protect wild genetic resources? Are there examples where unregulated land use threatens these resources? If so, how could the threat be averted?

The above questions should be considered in light of the intention that the Global Plan of Action assist your country in conserving its plant genetic resources, in utilizing them, and in maximizing the benefits from these resources.

Chapter 3

National Conservation Activities

In this chapter give a brief, technically accurate description of the conservation activities of your country.

In Situ Conservation Activities

Does the country have programmes or projects for *in situ* conservation of PGR (include on-farm conservation of landraces / traditional varieties as well as conservation of wild relatives in protected areas)? Are *in situ* conservation sites managed by farmers or by technical experts? What conditions are maintained in these *in situ* projects or programmes?

Ex Situ Collections

Does the country have national plant genetic resources collections ? If so, where are the collections housed? If there is a national genebank, when was it established and why? How was its establishment funded? How are on-going costs funded? Is it financially secure? Does the government see it as a worthwhile investment, or not?

What, in general terms, is the composition of the national collections? Do they contain mainly indigenous material? regional or global collections of the country's major crops? mostly unique material or mostly samples that are replicated elsewhere?

Which do you consider to be the most important material? Does it receive preferential treatment in the genebank?

What proportion of the samples are used each year? Who are the main users? plant breeders in the national institutions? researchers? private companies? plant breeders in other national programmes? international agricultural research centres? etc.

What is the balance between the material you provide for use outside the country and the material you obtain from outside the country for your own use? What are your main sources of material from other collections?

How would you rate your national collections? Are they representative of the diversity existing in the field? adequate for your purposes? within your capacity to maintain them according to recommended, acceptable standards?

How do you plan your collecting activities and what evaluation and use is typically made of materials following collection? Is your collecting policy mission-oriented (e.g., for a single crop, trait or breeding objective)? conducted using random sampling techniques? based on a planned collecting programme or mainly opportunistic? mainly derived from markets or roadsides, or mainly collected from more remote localities?

Do your collections contain material you would prefer not to maintain but which is, at least potentially, too valuable to discard? Would you consider transferring this material, perhaps on the condition that you could retain ownership and/or the right of access to it? Would you like to exchange it for some other material? Would you consider discarding it so as to make your collection more manageable?

Storage facilities

Describe briefly the facilities under which your collections are stored. Are you able to maintain these conditions all the time? or most of the time? or is maintenance of conditions a major problem? (See attached listing assembled from information supplied to FAO by the government. There is no need to repeat all of this information in the Country Report, but you may wish to summarize and analyse it.)

Under what storage conditions (including temperature, humidity and types of containers) are collections maintained? Do they comply with internationally recommended standards? If you cannot comply with such standards, what help would you need to do so?

Are you holding any "base collection" material (i.e. samples of unique material designated for long term conservation)? If so, is it stored in the kind of containers recommended for this type of material and maintained at the internationally recommended levels of moisture content and temperature? If so, are you confident that these conditions can be maintained reliably over the long term, or not?

Is your base collection material duplicated, for safety, in another genebank free from risk? If so, does that genebank accept responsibility for viability testing and for regeneration of the material?

Are you able to transfer material quickly to recommended storage conditions after receiving it in the genebank? How long does it normally take to process an incoming sample? Do you have a scientifically based set of priorities for processing incoming material (e.g. one which gives priority to processing seeds known to have short longevity)? Can you cope with incoming material or do you have a backlog of unprocessed material? Do you need help with clearing a backlog occasionally? often? NOW, urgently? Where do you store material to be processed? Is your collecting programme designed with your processing capacity in mind?

Are your storage facilities (short, medium or long-term) full or nearly so? or for how many years do you expect them to meet your requirements? If you are on the verge of reaching full capacity what do you plan to do when that happens?

Do you store material for other genebanks? if you have spare capacity, would you be willing to store material for other countries? If so, on what terms and conditions?

If you do not have a national genebank do you want to establish one? If so, on what scale and for what purposes? Have you considered the option of negotiating an agreement with another country, a CGIAR centre, or through an international body to store your plant genetic resources collection on your behalf?

If you have a national genebank do you wish to maintain it with its present functions in the long term? If not, what changes would you propose to make? Would you prefer to rely more heavily on international arrangements/facilities (for long-term storage, for example) if satisfactory conditions could be worked out?

Are botanical gardens, arboreta, field genebanks or other storage measures employed? How are these "facilities" tied to government programmes and to plant breeding or utilization efforts? What special problems do these efforts have? What special needs do they have? Does the government consider such efforts to be increasing in importance in terms of national plans and strategies?

Documentation

How well documented is your collection? Do you have a complete, computerized data base? a published catalogue? a card index? or what alternative?

Is agronomic evaluation information integrated into the documentation system?

What knowledge/information accompanies the samples? passport data? characterization data? evaluation data? indigenous knowledge? breeders' records?

What percentage of your samples are fully documented? Is there a correlation between the quality of documentation and the use of the samples?

In what form do you make information available to users? computer print-out? direct on-line access by user? by letter? by allowing users to come and consult registers? etc.

Are you actively networking with other genebanks to exchange data on a regional or a crop basis? with fully co-ordinated data bases? If so, how was the networking initiated? Has it proved to be worthwhile for you? How could it be improved to serve your needs better?

What is the status and adequacy of documentation of *in situ* collections? What particular problems do you face in the documentation of *in situ* resources and how might these be best overcome? Would such an effort be "cost effective"? Would it be considered a priority?

Are there special problems in documenting samples of wild relatives? Can you readily verify the naming of this material? Are you in need of more taxonomic expertise?

Are your documentation records fully duplicated? in the same building? elsewhere in the country? outside the country? How often is the duplicate set updated?

Evaluation and Characterization

Evaluation, in the broad sense and in the context of genetic resources work, is the description of the material in a collection. (Chapman, 1989)

Does your National Programme make a clear distinction between the processes of *characterization* and *evaluation* of germplasm samples? (For an explanation of these terms see, for example, Plant Genetic Resources Conservation and Management, ed. R.S. Paroda and R.K. Arora, IBPGR, New Delhi, 1991.)

By whom are these processes carried out? Are internationally recommended descriptor lists followed, e.g. the IBPGR/IPGRI descriptors? If not, what alternative guidelines are used? If you use IPGRI descriptors, do you modify them or use them as given?

How are farmers involved in the evaluation of collections?

What proportion of the national collection has been characterized using international descriptors? has undergone preliminary evaluation? Where and by whom is this work carried out?

What proportion has been fully evaluated at the locality of the genebank? at the locality of origin? at other localities? Does this evaluation include the collection of biochemical data? physiological responses? microbiological data? disease and pest susceptibility? nutritional aspects? genetic fingerprinting?

Are all available characterization and evaluation data published? provided to users of the samples?

How could evaluation data help improve your collecting and conservation strategies? Provide examples if possible.

Are the data resulting from evaluations carried out by users of the samples returned to the genebank? Do you make the provision of such data a condition for supplying material to users? Do you provide such data to genebanks from which you obtain material for study?

It could be argued that the systematic evaluation of all material in the world's genebanks would not be cost-effective or practicable with current resources. What is your policy on evaluation? Can you justify your expenditures? Do they effectively support the use of germplasm? To what extent, and by whom and where do you feel it should be carried out in future?

Could international collaboration help to achieve a better result? If so, how could it be organized? Who should take the leading role(s)? Would you favour a regional approach? a global approach? a crop-based approach?

What approach, if any, do you take to the task of evaluation and characterization of resources held *in situ*? Is the approach adequate? Is greater emphasis, or outside assistance, warranted?

Regeneration

When do you regenerate/intend to regenerate the accessions in your collection? Do you have the facilities to do so? for all types of accessions or only for some? What material can you NOT regenerate in a satisfactory way? Why?

Do you intend to go on storing material that you cannot regenerate? What options have you considered for obtaining assistance to regenerate it? or for arranging to have it stored somewhere where it could be regenerated?

Are you satisfied that your regeneration procedures are adequate to maintain the genetic character of the original samples? to avoid contamination? to avoid selective elimination of important variation? What is needed to improve the procedures?

Is regeneration carried out or supervised by qualified plant breeders/geneticists? Do they have enough land/facilities/labour to take all the precautions they believe should be taken (e.g. against contamination, competition, natural selection, etc.)?

Is the size of regeneration samples sufficient to avoid genetic drift? Are you faced with a difficult choice between regenerating material less often and using smaller samples? If so, what choice do you make?

Are full and accurate details of the regeneration history of every accession available to users of the material?

Is more than one generation of the same accession maintained in the genebank? Do you combine "fresh" and "old" material of the same accession? How are older materials disposed of?

Forest Genetic Resources

Please report on programmes and activities aimed at (i) exploration of the natural distribution of the main native forest species: (ii) description and documentation of populations/stands representing the different eco-geographic zones in which each main species occurs, with identification of threats, *in situ* conservation possibilities and *ex situ* conservation needs; (iii) genetic conservation through combined *in situ* conservation area network and *ex situ* conservation, measures, such as *ex situ* conservation stands and, where applicable, long term (more than 5 years) seed storage; (iv) characterization, evaluation, study of intra-specific diversity through provenance and progeny trials and genetic marker studies. Is there a national information system on forest genetic resources (list and characteristics of i*n situ* and *ex situ* conservation stands, seed lots in long term storage, etc.)? (You may wish to include information concerning forest genetic resources in a separate annex to your report.)

Chapter 4

In-country uses of Plant Genetic Resources

In this chapter first describe what use is being made of the genetic resources held by your own genebank. Then say what use is made of materials from other sources.

Use of PGR Collections

What genetic resources from your national collections are most frequently used in national projects? Please list the crops/species in order of the number of times they have been supplied for use within the country during the past 3 years. Also list the number of different in-country users requesting and being provided with material of each crop or species. If this information would make a very long list, restrict it to the 10 species most commonly supplied. What percentage of accessions of these species has been used in the past 3 years?

For each species in the above list, what is the approximate number of national scientists/professionals using the genetic resources (include government-funded plant breeding and commercial activities)?

What proportion of all plant genetic resources samples used in commercially related activities within the country come from your own national collections? What are the major external sources?

How many of the species maintained by your genebank have not been used for in-country projects of actual or potential commercial significance during the last 3 years? Are there reasons why you expect these species to be more frequently used in the next few years? Were they used much more frequently in the past?

How do farmers have access to genetic resources of the country? Are community seed banks utilized?

Crop Improvement Programmes and Seed Distribution

What are the main functions of national plant breeding programmes: -- to improve local varieties? -- to adapt imported germplasm to local needs? -- to introduce specific characteristics (pest resistance, drought tolerance etc.).

What are the ultimate objectives of these plant breeding programmes: -- to increase production? -- to diversity production systems? -- to widen the genetic base of crops and reduce crop vulnerability? Are national plant breeding activities focused primarily on: -- meeting national food needs? -- increasing export opportunities? -- other aims?

Is the amount and quality of scientific plant breeding currently being undertaken in the country adequate to meet national needs and goals? What constraints exist? How could these be reasonably overcome?

Are plant breeding activities conducted primarily by government-funded programmes, private companies, foreign companies?

How are the products of in-country crop improvement made available to farmers easily and quickly? For which type(s) of farmers (subsistence, commercial, semi-commercial) are the varieties produced by national plant breeding activities most valuable?

How are farmers involved in plant breeding activities and variety evaluation activities?

Are improved varieties available to all farmers? What are the identifiable constraints to better seed production and distribution?

Use of Forest Genetic Resources

Is there a national programme/system for better forest seed production/supply? If so, please briefly describe the programme/system. How is seed supply organized for forest species? (You may wish to include information concerning forest genetic resources in a separate annex to your report.)

Benefits derived from the use of Plant Genetic Resources

In addressing the questions in the previous sub-section on "Use of PGR Collections" have you identified any species which your genebank is maintaining mainly or wholly for foreign users? What advantages does your country gain from doing this?

Assess whether the country is deriving clear, direct benefits from its indigenous plant genetic resources. What are the main direct benefits? Is it deriving indirect benefits, e.g. by providing material to an overseas institution from which it is obtaining improved stocks in return? or collaborating with other partners in research from which benefits will accrue to your country in the long term?

Is the country deriving clear benefits from the use of non-indigenous materials held in its own genebank? If so, are the benefits shared with the country of origin of the genetic resources, or not?

Improving PGR Utilization

What do you regard as the main achievements of your plant genetic resources activities: -- in improving commercial plant production? -- in improving traditional or other plant production? -- for generating technology or products of technology which are themselves exportable? -- other benefits?

Are you satisfied with the relationship between your genetic conservation and improvement/breeding/seed production/utilization systems? If not, are there institutional, financial,

technical or other barriers or constraints which retard adequate utilization of plant genetic resources? What could be done to make better use of the resources?

What do you regard as the greatest value of plant genetic resources to your country? Do you regard these resources as potentially more valuable/profitable in the long term than they are at present? if so, what could be done to make them more profitable in the short term? Consider such possibilities as better documentation; better characterization and evaluation data; closer integration of the genebank with other agricultural/forestry/etc. facilities; better co-ordination of policies and planning processes; changes in policy; better international co-ordination; resolution of any particular national or international issues.

What kind of assistance is needed to improve utilization? Also consider whether training or greater access to technical expertise and/or facilities would help to add value to your genetic resources. If so, what expertise/facilities? From whom would you prefer to obtain such assistance, and on what terms?

Chapter 5

National Goals, Policies, Programmes and Legislation

This chapter is the place to focus on the organization of your "national programme" for genetic resources and the policy/political and legal framework that underpins it. Perhaps the sections on policy and legislation could better be drafted by persons from the responsible Ministries (Planning, Economy, Agriculture, Natural Resources/ Environment, etc.) than by a technical expert.

National Programmes

Are plant genetic resources activities organized into a "National Programme"? If so, is it a single, integrated, government-funded programme? or a series of different elements formally or informally sponsored by various ministries, sub-national authorities, research institutions, etc? If the latter, what co-ordinating arrangements are in place? Does your "National Programme" cover conservation and use of plant genetic resources?

Are commercial firms involved and, if so, what is their role? Are NGOs involved? and farmers' organizations, or individual farmers?

What are the goals and objectives of the government in maintaining a national genetic resources programme? How is it integrated with national plans for sustainable development? How are your efforts regarding plant genetic resources related to implementation of the Convention on Biological Diversity?

Is there a national committee overseeing or giving direction to activities and/or policies? How are activities and policies coordinated?

To whom is the head of the programme accountable? How does he/she rank in the organization compared with, for example, the head of plant pathology or plant breeding or soil science? How secure is the position of head of genetic resources? Who could decide to abolish the position?

Who approves the annual programme and budget for plant genetic resources? Does the programme have its own budget line? Is the government formally committed to providing a secure level of funding from year to year?

Are your plant genetic resources collections protected by legislation? or by a national decree? or by an international commitment made by the government? If not, who ultimately decides their fate? Do you see a need to change the legal status of the collections, or of the genetic resources programme, to increase their security?

How do you judge the importance of your national programme and other PGR activities to national food security?

Training

Is your national programme adequately staffed with trained personnel? If so, how and where were they trained? What are the main constraints to obtaining good, well trained staff? What are the most urgent training needs?

What skills are available in your National Programme? statistical sampling? seed science? agronomic evaluation? taxonomy? programme management? data management? germplasm health? social and anthropological techniques? plant breeding? public awareness/ education? policy? any others?

What kind of plant genetic resources training is available within the country? What national institutions might be able to offer relevant courses? Would international input be needed to get such courses started? Would there be enough demand to make in-country courses viable?

Could your country offer regional courses in any aspects of plant genetic resources? If so, at what level? Would international assistance be needed? If so, what assistance?

Do training programmes in plant genetic resources that are available to your country meet the full range of national needs? If not, what is lacking? or in what respects are the courses less than fully satisfactory?

Does the broader agricultural/user community have the opportunity to learn something about genetic resources (at least enough to be able to communicate effectively with the specialists in the subject)? Do your national policy-makers understand why the country has a plant genetic resources programme?

Are men and women equally involved in training programmes at all levels? at any level? Are all or most of the country's ethnic groups involved? Are the groups most involved in traditional farming involved? Do training policies advantage or disadvantage any of these groups?

Is staff turnover too rapid to allow the genetic resources programme to benefit fully from the investment in staff training? If so, why? and how can this problem be addressed? Is international action required?

National Legislation

Do quarantine laws affect the import and/or export of plant genetic resources accessions? How? Do they allow the international transfer of *in vitro* materials or only of seeds? Do delays in the passage of genetic resources materials through quarantine result in loss of material?

Do you feel the need for more stringent quarantine controls than those that already exist?

Do national laws restrict the planting out of imported genetic resources? If so, how?

Does the government provide incentives to farmers for the conservation of traditional varieties? If so, what are they and how are they provided?>

What legislation governs the sale and distribution of seeds? How does this influence the type of plant varieties available to farmers? Can farmers' varieties be traded as seed legally?

Does the country have Intellectual Property Rights (IPR) legislation? If so, how does it affect the genetic resources programme?

If you do not have IPR legislation, does the absence of it affect the genetic resources programme? If so, how? In light of the recently concluded GATT negotiations, do you have plans to formulate or amend such legislation?

Are the effects of IPR legislation (yours and/or other countries) on your genetic resources programme fully understood or are new implications still coming to light? Are there effects which you had not anticipated? If so, what effects?

Is assistance needed on legal matters concerning plant genetic resources? Who can decide whether or not to export plant genetic resources? Within what limits can such decisions be made by technical experts? What factors influence these decisions (availability of material; source of the request; possibility of competition in marketing the products; political alliances or agreements with other countries; formal or informal networking at the technical level, etc.)? What conditions are placed on foreign collecting missions?

Other Policies

Are there incentives for production and marketing of improved varieties as certified seed?

What credits, subsidies or other incentives are available for the provision of agricultural inputs? How do these influence farmers' choices of planting material and thereby impact on the conservation and utilization of plant genetic resources?

Are national PGR programme staff or other PGR experts involved in the planning of major agricultural development projects (including those sponsored by the multilateral development institutions)? Are projects appraised, monitored and/or evaluated for their impact on the conservation and utilization of plant genetic resources?

Trade, commercial, and other international agreements

This report is not the place for a detailed account of the country's international policies and commitments in the areas of trade and commerce. It would be useful, however, to identify the impacts of policies and recent changes in these areas on your national genetic resources programme.

You might also comment on whether, in developing its policies in these areas, your government has taken account of their likely impacts on national plant genetic resources activities (including the use of genetic resources) and whether there has been any consequent re-focusing of these activities.

Chapter 6

International Collaboration

"No country or region can be self-sufficient in ... plant genetic resources and according to current academic studies the average interdependence between all regions of the world is more than 50 per cent ..." (Esquinas-Alcazar, 1991)

That being the case, the developing and maintaining of international arrangements to facilitate the exchange of plant genetic resources is clearly in everybody's interest. The fair and equitable exchange of plant genetic resources is expected to be one important theme of the ICPPGR process.

In this chapter, please discuss your experience with the various aspects of the international plant genetic resources system, in particular :

- United Nations initiatives
  - UNCED and the Convention on Biological Diversity
  - the FAO Global System
- International Agricultural Research Centres
  - the CGIAR (commodity centres and IPGRI)
  - regional research centres
- Non-government organizations (international, grass-roots)
- Regional intergovernmental initiatives
- Bilateral intergovernmental initiatives
- International trade and commercial agreements

Please mention regional and international collaboration concerning conservation/evaluation/use of forest genetic resources of species which natural distribution covers several countries. (You may wish to include information concerning forest genetic resources in a separate annex to your report.)

United Nations Initiatives

UNCED

Was your country among those that adopted *Agenda 21* ? If so, what steps have you taken, since June 1992, to implement Chapter 14 G (Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture) and Chapter 15 (Conservation of biological diversity)?

How could the Convention on Biological Diversity forum complement or strengthen the role of the FAO Commission or *vice versa*? Do you envisage distinct and separate roles for these two bodies ?

FAO GLOBAL SYSTEM

If you are member of the Commission, why did you join it? What benefits have you gained? What further benefits do you expect to gain from the Commission? What do you want the Commission to achieve during the next decade?

If you signed the Undertaking, what impact has the signing had on your national commitment to conserve and use plant genetic resources? Do you have plans to make further changes to your national programme to give effect to your commitment? If so, what changes are envisaged?

If you have not signed the Undertaking or have signed but with major reservations, is there a clear reason for this choice?

What role do you foresee for an "international fund"? if one is established as part of the Global System? Do you envisage your country as a beneficiary of it or as a donor to it? or both? or neither?

What plant genetic resources collaboration have you had with FAO at the programme level?

International Agricultural Research Centres

THE CGIAR

The Consultative Group on International Agricultural Research (the CGIAR) is an association of countries, international and regional organizations and private foundations co-sponsored by the World Bank, UNDP and FAO. CGIAR commodity centres hold significant plant genetic resources samples and are involved in their improvement. IPGRI is the specialized International Plant Genetic Resources Institute within the CGIAR system.

What contribution have CGIAR commodity centres made to your national genetic resources programme? to the provision of genetic resources and/or enhanced materials to users within the country? in providing finished varieties for national cropping programmes?

If you receive support from CGIAR centres does it come mainly or exclusively from centre staff based in your country? or in your region? or further away?

Have national programme staff received training from CGIAR centres? If so, was it from attendance at courses? or through in-service training at a centre? or both?

Can CGIAR centres provide all the assistance you seek from them? If not, what do you understand to be the reason why they cannot do so?

Are there genetic resources functions that, historically, have been carried out by CGIAR centres but which you would like to see transferred to the national programme or to a regional programme? If so, please say what functions.

Are there functions which are currently the responsibility of the national programme but which you would like to see handled by the CGIAR? If so, please specify?

What new initiatives in plant genetic resources would you like the CGIAR commodity centres to take? What additional support, if any, would you like to receive from the CGIAR genebanks or other facilities of the centres?

What are the mechanisms for communication between your national programme and the CGIAR centres? are they adequate/suitable to ensure good collaboration and prevent duplication of functions? Do CGIAR scientists stationed in your country (or working in it) make a real contribution to the national programme?

What do you regard as the most important functions for IPGRI in the next decade? Is IPGRI performing any functions that you think should be performed by national programmes? What new initiatives/roles should IPGRI take?

REGIONAL RESEARCH CENTRES

Does your country have a special relationship with any of the regional research centres that have significant plant genetic resources programmes, e.g. the Asian Vegetable Research and Development Centre (AVRDC), Centro Agronomico Tropical de Investigation y Ensenzana (CATIE)?

Do your views on the roles of CGIAR centres also apply to regional centres? If not, what are the important differences and what are the important features of regional centres that give rise to these differences?

Is the association of your government with a regional research centre important in determining your collaboration with the centre at the technical/scientific level? Is a formal agreement

between the government and the centre important to the success of this relationship? Would formal agreements with (other) international centres facilitate your collaboration with them?

Regional intergovernmental initiatives

There are several examples of well established regional initiatives that focus on or include collaboration among national plant genetic resources programmes, *inter alia*, ECPGR (Europe), IICA (Latin America), RECSEA (Southeast Asia).

Is your national plant genetic resources programme participating in one of these regional collaborative arrangements? If so, what advantages does it bring to the national programme? at what cost?

Do you believe there is further potential for regionally integrated plant genetic resources programmes? In what respects could they strengthen national programmes?

What, if any, functions currently undertaken by the national programmes could be centralized on a regional basis? What advantages and disadvantages would accompany regional centralization? If you support it in principle, how do you think it should work in practice?

Bilateral intergovernmental initiatives

Does your country have a bilateral agreement on plant genetic resources with another country? If so, does the agreement set up a collaborative relationship with a neighboring or like-minded country? a reciprocal arrangement to promote sharing of resources and/or benefits? a donor/recipient relationship? If you have several, please tabulate information about them. Are there similar agreements with private companies?

Some examples of particularly successful bilateral relationships might form suitable models for consideration in the ICPPGR process. If you are a party to such a relationship please describe how it works and what benefits you have gained from it. Preferably prepare this in consultation with the other party to the agreement!

Chapter 7

National Needs and Opportunities

At this point in the preparation of your Country Report there should be no further need for leading questions to focus your thinking on issues that might be discussed. What you write in this chapter should be determined by what you have written before it. Having reviewed your existing plant genetic resources programme and described the national and international contexts surrounding it, you should now be in a position to look forward in time. What should happen next?

The ICPPGR process will involve synthesizing an overview of national needs and opportunities. But your definition of your own needs and opportunities is obviously also critically important as a step in the national planning process.

For both purposes it would probably be most helpful to prepare this chapter in the form of a list of dot points confined to one or two pages of the most important points which are likely to determine the direction or constrain the progress of your national programme during the next decade.

Please also indicate any needs for which urgent international support is required immediately. Also notify FAO of these urgent needs separately by letter so that they might receive consideration even before the Conference takes place.

Chapter 8

Proposals for a Global Plan of Action

In this chapter please write, preferably in dot point form, the elements your country wishes to propose for inclusion in the Global Plan. Please list them in order of their importance to you.

Similarly, please propose priorities at the international level for the Global Plan of Action.

Assume that the Global Plan will take approximately a decade to implement, and propose measures that would be achievable (or where defined targets would be achievable) within that timeframe.

Most importantly, propose measures that your country would be prepared to work towards achieving, as part of an international effort, and which, you believe, and bring lasting benefits for the sustainability of life on earth.

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