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Item 4.1(b) of the Draft Provisional Agenda

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

WORKING GROUP ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Second Session

Rome, 5 – 7 November 2003

STRENGTHENING SEED SYSTEMS

Table of Contents

1. INTRODUCTION

1. Effective seed systems contribute to increase the availability of good quality seed of a wide number of varieties, maximizing both agro-biodiversity and productivity. In the case of disasters, restoration of capacity to deliver pre-existing germplasm is also crucial to maintain farmer's livelihoods. Local seed systems provide the locus for on-farm management of plant genetic resources for food and agriculture (PGRFA), since PGRFA conservation and crop variety evolution take place as part of farmers' production systems. Agricultural systems, where seed production is a specialized commercial activity, make use of genetic resources and both modern and traditional technologies as a fundamental input to develop new varieties. The countries that adopted The Global Plan of Action (GPA). for the Conservation and Sustainable Utilization of PGRFA stated in the Leipzig Declaration the crucial need to link conservation of PGRFA to their use, and to facilitate access to both genetic resources and technologies as an essential step to achieve the objectives of the GPA[1]. The relevance of strengthening seed systems is fully acknowledged in the GPA as one of the priority activity areas that could contribute to this process. Specific recommendations to this effect are contained in Priority Activity 13 of the GPA "Promoting seed production and distribution", and in Priority Activity 3 "Assisting farmers in disaster situations to restore agricultural systems". Other activity areas of the GPA have a strong impact in seed systems development, in particular Priority Activity 2 "Supporting on farm management and improvement of plant genetic resources for food and agriculture", Priority Activity 11 "Promoting sustainable agriculture through diversification of crop production and broader diversity of crops, and Priority Activity 14 "Developing new markets for local varieties and diversity-rich products".

2. With the adoption of the International Treaty on PGRFA as a binding instrument by the FAO Conference in 2001, the GPA acquires a renewed dimension as an element that contributes to the objectives of the Treaty. Article 14 of the IT recognizes that "the rolling Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture is important to this Treaty," and "Contracting Parties should promote its effective implementation, including through national actions and, as appropriate, international cooperation to provide a coherent framework, inter alia, for capacity building, technology transfer and exchange of information (…)".

3. The Commission on Genetic Resources for Food and Agriculture, which holds the responsibility to monitor the effective implementation of the GPA and acts as Interim Committee of the International Treaty on PGRFA until it enters into force, considered at its Ninth Regular Session in 2002 a progress report by countries on the implementation of the GPA. In general countries reported a low number of activities on seed-related priority activity areas. However countries, and especially African countries, stressed the high priority accorded to their implementation, in particular Priority Activity 13 "Promoting seed production and distribution", and Priority Activity 3 "Assisting farmers in disaster situations to restore agriculture systems"[2].

4. The Commission decided that the Inter-governmental Technical Working Group on Plant Genetic Resources (WG-PGR) would consider at its second meeting issues related to the use of plant genetic resources for food and agriculture through strengthening germplasm conservation, plant breeding and seed production systems. In preparation for this meeting, and as part of FAO's consultation process, during May 2003, FAO organized three technical workshops on seed policy, seed emergency relief and on Quality Declared Seed (QDS). Although initially foreseen in the

[1] Leipzig Declaration on Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture. 1996. Paras. 6 and 7.

[2] CGRFA/WG-PGR-1/01/2. Paras. 10 and 29 and 42.

agenda of the seed policy workshop, time limitations did not allow experts to discuss issues related to access to and transfer of seed related technologies, including protected technologies by intellectual property rights (IPRs). However, in a parallel consultation process on agricultural biotechnology, FAO organized in June 2002 an expert workshop on the impact of IPRs on public research in developing countries, in order to identify strategies to promote and strengthen partnerships between public and private sector institutions. Without precluding other studies and consultations that the WG-PGR may consider necessary to contribute to this discussion, main conclusions and recommendations of that expert workshop have also been included in this paper for consideration of the WG-PGR[3].

5. This document builds on the outputs of the four workshops and reviews seed systems, FAO's previous and planned activities in the seed area, policy issues and recommendations for FAO and stakeholders. The views and comments of the WG-PGR are sought on a number of issues, and in particular on the conclusions and recommendations of the workshops reported in this document.

2. SEED SYSTEMS

6. Among agricultural inputs, seed has the greatest ability to increase on-farm productivity and enhance food security. The genetic properties of seed determine plants' responses to stress, set the upper limit on performance, and influence the productivity of other inputs through the ability of plants to efficiently convert sunlight, water, air, soil, and other nutrients into biomass. Unfortunately, the lack of availability of quality seed of suitable varieties at affordable prices is a common constraint for farmers in many parts of the developing world.

Types of seed systems

7. Briefly, in market-oriented farming, successful seed production and delivery is the result of the interaction of numerous technical, institutional, economic, social, and political factors and requires the coordinated effort of a wide range of organizations. Market-oriented seed systems, whether public or private, tend to operate as a "chain" and encompass the elements of varietal improvement, seed production, seed conditioning, seed storage and distribution and seed quality control, often in form of seed certification. This system includes both private, or commercial, and public components. In most countries these seed systems are subject to government regulation.

8. Seed systems in subsistence farming are complex and difficult to describe, as their character can vary for crops within farms and may be even different within a crop, where for instance local and modern varieties are managed differently[4]. In general, they are largely based at the farming community level. They comprise a dynamic "cycle" of practices, embedded in normal crop production. Seed is typically produced on farm, though frequently there are inputs of seed through various mechanisms, such as seed exchange, or purchase in local seed markets. These may occur when there is insufficient material for planting, or in order to access new varieties. In community-based seed systems the varietal selection process, seed production and seed exchange are integrated into crop production and into the socioeconomic processes of farming communities[5]. In most cases local or community-based seed production activities take place outside the framework provided by regulated seed production standards. Rather, they are guided by local technical knowledge and standards and by local social structures and norms.

[3] The full reports of the workshops are available to the members of the WG-PGR as information documents.

[4] Diversity, local and formal seed supply, in "Encouraging Biodiversity", 2000, IT Pub. C, Almekinders and W. Deboef. pp219-252.

[5] "Local seed systems and their importance for an improved seed supply in developing countries". Almekinders, C. et al. (1994).

9. Varieties produced by the market-oriented farming strive to meet quality standards required for international markets. The commercial world seed market is estimated at approximately US$ 30 billion, with international seed exchanges having grown from about US$ 1.4 billion in 1985 to about US$ 3.6 billion in 1998[6] Nevertheless, their reliance on well established infrastructure, limited crop coverage and susceptibility to disruption has limited their efficiency in developing countries. The community-based seed system is currently the primary source of seed, particularly in developing countries. Yet it suffers from many constraints: poor access to improved varieties adapted to local conditions, insufficient infrastructure to multiply quality seed, lack of adequate quality control and post-harvest management and poor storage facilities. These constraints remain to be solved in many countries. At present, not enough information is available on the resilience and efficiency of community-based seed systems.

Regulation of quality seed

10. Although the technical principles to preserve the genetic purity of the seed through the multiplication process and its technical qualities are very similar among countries, the legal requirements vary from country to country and from crop to crop. In some countries (except, often, for vegetables) seed lots have to be "certified" for quality standards by an official body. The rules for certification are in general set in a national seed law. In some countries only crops considered essential for food security have to be certified. In other countries, official certification is not mandatory and the seed supplier is responsible for the preservation of the identity of the seed lot. It must be noted that there is now, at national and international levels, a trend to accreditation of private entities to carry out field inspection, seed sampling and seed testing[7]. Seed certification standards also vary, although there are internationally accepted standards such as the OECD seed schemes, usually followed in international seed trade. For domestic and local seed production other international approaches to ensure quality seed have been applied, such as the Quality Declared Seed (QDS) standards, developed by FAO as the follow-up to the FAO/SIDA Technical Conference on Improved Seed Production, held in Nairobi, Kenya, in 1981, and attended by 63 countries and 14 international organizations[8]. QDS is mainly used by NGOs and seed relief workers and also for quality control of forage seeds in some countries.

Liberalization of seed trade

11. In recent years, several countries have reviewed their seed policies as part of the wider process of economic liberalization. The objective is to reduce the direct involvement of government in seed production and marketing and to create a policy climate more favourable to the development of a more diverse private sector, releasing the public sector from costly services. Current changes in the global seed industry may also affect national seed systems and the status of 'public-good' research generally, with uncertain consequences. The evolution of seed policy regimes from a regulated to a liberalized seed trade system may not necessarily be linear. Liberalization can be targeted to certain components of national seed policies, retaining regulation of some components to safeguard national interests. Some countries have undertaken drastic transitions towards liberalization of their seed policy regime in the last two decades. The impact of those processes for farmers is not well documented, in relation to productivity, incomes, production and risks of disease transmission.

12. There is a global trend in developing countries and countries with economies in transition to privatise seed production, processing and marketing. The shift is complex and requires time to adapt to new rules. Both the public and the private sectors have important roles to play and need to complement each other in providing the entire set of services related to variety development, seed production, quality control, distribution and protection of the consumer. The most efficient

[6] http://www.worldseed.org/statistics.html

[7] Seeds for Mankind: Plant Breeding, Seed and Sustainable Agriculture, FIS. 2002

[8] See documents AGP/SIDP/81/76, AGP/SIDP/87/6 and "Quality Declared Seed system, Expert consultation" Report, 1989.

system needs to consider the technical, legal and economic situation of each country, the type of crop and the stage of development of the seed system[9]. Only an effective cooperation will allow farmers to have access to adapted quality seed and thus contribute to sustainable agriculture and food security.

3. FAO'S PROGRAMME AND ACTIVITIES

13. The development and strengthening of seed systems has been part of FAO's programme for more than twenty years, and a key element in FAO's activities since the adoption of the GPA in 1996. FAO organized five regional meetings on Seed Policy and Programmes (in sub-Saharan Africa, North Africa/Near East, Asia/Pacific, Latin America and the Caribbean, and former East European countries) during the period 1998-2001 in cooperation with regional and national stakeholders. In particular, these meetings aimed to:

- Provide a comprehensive and co-ordinated assessment of seed multiplication activities, at regional and national levels;
- Evaluate trends and requirements related to seed production in terms of different crops and varieties, infrastructure, and capacity-building issues;
- Develop modalities for the development of seed policy frameworks in the countries; and
- Identify priority needs for national, sub-regional, and regional programmes, in line with the GPA;

14. Through this wide consultation process, new elements for discussion were introduced. Main conclusions highlighted the facts that:

- Changes in world market conditions and new information technologies become a new driving force in the operating scenario;
- Strengthened complementarity of different seed systems is crucial for farmers to benefit from new opportunities to overcome structural problems, including access to new technologies, rural education and farmer training.
- Stronger local and regional institutions and effective alliances among stakeholders are necessary to benefit small and medium farmers;
- An enabling environment for seed market development both at national and regional levels is crucial and must include measures to foster small-scale rural enterprises.

15. A series of regional seed networks were established to provide regional fora for discussion and technical guidance to countries on this process. The contents, long term sustainability and services provided by networks are being assessed by the Commission, to promote the implementation of Art. 16 of the International Treaty on PGRFA on International Networks and Art. 6 on Sustainable Use of Plant Genetic Resources.

16. Building on the outcomes of the regional meetings, recommendations of the WG-PGR, the GPA, and the International Treaty, FAO has revised its Medium Term Plan for the years 2004-2009, strengthening its activities in support of seed systems in developing countries while ensuring a better integration with PGRFA plans and programmes and a wide partnership with involved stakeholders. A new programme entity called "Conservation and Sustainable Use of Plant Genetic Resources, including through Biotechnology, and Seed Sector Development" has been developed which, includes as major outputs in particular:

[9] See note 4 supra.

- support to on-farm management, exchange and improvement of PGRFA, and national seed systems ensuring complementarity between private and public systems;
- improved and harmonized regulatory frameworks for PGRFA, seeds and variety release;
- due attention given to seeds and PGRFA in disaster preparedness, relief and rehabilitation;
- improved access to, and transfer of PGRFA and seed related technologies, including biotechnology;

4. IDENTIFYING STRATEGIES TO STRENGTHEN SEED SYSTEMS: CONCLUSIONS AND RECOMMENDATIONS OF EXPERT WORKSHOPS

17. In order to identify appropriate strategies to achieve the outputs included in the MTP 2004-2009, FAO organized a series of three expert workshops on seed policy, seed relief, and on updating the QDS standards. As mentioned in the introductory section to this document, time limits did not allow experts to discuss issues related to access to and transfer of technologies. However, FAO also initiated last year a consultation process on the impact of intellectual property rights in agricultural biotechnology research in developing countries, in an attempt to identify strategies to strengthen partnerships between private and public sector both from developing and developed countries in this area. Aware of the importance of this discussion in relation to seed systems, conclusions and recommendations of that workshop are also included for consideration. The conclusions and recommendations of the four workshops follow.

Seed policy

General considerations

18. National seed policy development must be placed in a wider context of agricultural policy development, while at the same time ensuring synergy and consistency with environmental, trade and socio-economic policies at national, regional and international level.

19. Seed policies need to contribute to increase access to good quality seed of a wide number of adapted varieties and crops, with the objective to increase productivity and ensure sustainability. Other measures may be required to achieve these goals.

The role of the public and private sector in seed systems

20. The public and private sector have a dynamic complementary role to play in the seed system. Development of policy and regulations are the realm of the public sector. Certification may be implemented by the public sector or by duly accredited private entities. Other areas for public sector intervention include strengthening capacity building of farmers, particularly for small scale seed production, and breeding programmes of crops of interest for marginal areas of limited commercial interest, in particular when there are no other market forces to take this role.

21. Different models can be efficient in different scenarios. In terms of policy development, each country needs to assess who is better placed to undertake a specific role in order to build an efficient seed system. Specific distribution of roles may vary among countries, depending on their particular situation and needs, and among species. However, the involvement of farmers' organizations and the private sector should be encouraged.

22. Countries engaged in transitional processes of liberalization and privatization of seed systems should do so on the basis of the development of long term planning. The process should

involve the participation of all stakeholders, and allow for transitional periods and appropriate time frames, so that different players can adapt to the new scenarios. Capacity building and information sharing will be key to facilitate this process.

23. Building effective partnerships between private and public sectors requires sharing common objectives.

24. Partnerships can be established when the role of partners is complementary in achieving the common objective, and competition is avoided.

Complementarity among seed systems/building linkages with PGRFA

25. Seed polices should encourage fair competition and facilitate collaboration between seed systems, while promoting diversity in the markets to increase farmers' choice. Effective and diverse product markets are imperative to promote seed market development and farmers' access to good quality seed of a wide range of crops and varieties. Co-ordinated interventions – such as establishing appropriate policies, developing infrastructure and providing market information – could contribute to achieve this goal. Seed policies should also promote the conservation of agro-biodiversity through its use.

26. In strengthening linkages between all seed systems, appropriate rules are needed to ensure a "healthy" seed system, considering in particular fair competition and more flexible variety release procedures to allow coexistence of all seed systems for specific crops at local level.

27. Seed relief interventions, such as seed vouchers, seed fairs, and community-based seed security stocks have proven to be useful mechanisms to address access to seed and rehabilitate seed supply after disasters in many countries. Scale-up of such approaches in seed emergencies could be explored as an additional mechanism to promote seed market development without disrupting existing market arrangements and socio-cultural linkages. Detailed consideration of seed relief strategies is given later in this section.

Improving seed rules and regulations

28. Development and modification of national legislation for seeds should follow a national policy development process which addresses local, national and international needs of the country. In doing so, development of diversity-rich seed markets, good quality control systems, and IPR legislation should be considered.

29. Countries, particularly developing countries, sometimes find it difficult to implement their national legislation. While national capacity needs to be considered when updating and developing seed regulations, regional approaches could contribute to fill this gap.

30. There are different models for variety release, with different degrees of public intervention. Regulations in this area should be developed with the involvement of all relevant players across systems, ensuring independency of bodies through the different steps of the regulatory process.

Towards compatibility of seed regulatory frameworks

31. Common approaches are required to facilitate the movement of seeds among countries. Yet consistency of national legislation dealing with different aspects of seed supply must also be ensured to fulfil the objectives of the national policies.

32. Special attention is needed regarding the harmonization of phytosanitary requirements in line with the guidelines of the International Plant Protection Convention (IPPC), as well as variety release mechanisms, although other areas may also need specific effort, including seed certification and customs requirements.

33. A pragmatic approach calls for harmonization of technical specifications and procedures and compatibility of seed regulations, including through mutual recognition, particularly at regional level.

34. Criteria that may be considered when initiating regional approaches include trading blocs, existence of effective science and research networks, climatic and agro-ecological similarities and the mutual benefit of the countries participating in the process.

35. Seed associations can play an important role in facilitating compatibility of seed rules and regulations and to facilitate dialogue among stakeholders at national and regional level. This could be facilitated by the existence of a seed industry in the country.

Recommendations for FAO's action

36. FAO can assist in identifying opportunities to build partnerships between public and private sector in seed systems.

37. FAO could play a role in promoting participatory processes in the development of a seed regulatory framework, assisting countries to match their regulations to their needs, and their local capacity, in line with their national seed policies. FAO has a role in gathering information on existing seed regulatory models in various countries, to provide options to countries.

38. In order to facilitate transitional phases in policy development, FAO could also assist in collecting and sharing accumulated experiences, including best practices and country case studies illustrating transitional processes in developing countries.

39. FAO can play a key role providing a forum to discuss compatibility of seed regulatory issues to facilitate the movement of seeds among countries and promote political will, while ensuring participatory approaches. To this purpose, FAO can also gather and disseminate existing case studies. Existing work from CG centres, universities and NARS can contribute to this process, with a particular emphasis on cost/benefit analysis and assist countries in developing institutional capacity.

40. The monitoring mechanism for the implementation of the GPA could be extremely useful to gather relevant information at country level from a wide number of stakeholders. The information gathered could also contribute to give more concrete information on seed systems, which could be relevant for the second State of the World Report on PGRFA. It could also be distributed through the Global Information System foreseen in Art. 17 of the International Treaty on PGRFA and/or WIEWS.

IPR aspects in the transfer of technologies in the seed sector

41. Countries gathered in Leipzig stated that "access to and the sharing of both genetic resources and technologies are essential for meeting world food security and needs of the growing world population, and must be facilitated. Such access to and sharing of technologies with developing countries should be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms, as mutually agreed to by all parties to the transaction. In the case of technology subject to patents and other intellectual property rights, access and transfer of technology should be provided on terms which recognize and are consistent with the adequate and effective protection of intellectual property rights." [10]

42. Access to relevant protected technologies, as well as to protected reproductive material for further breeding is of key importance in the seed sector. These and other relevant intellectual property rights issues were put on the table at the seed policy meeting. However, time limitations did not allow their discussion. In June 2002, FAO, in co-operation with the University of Tor

[10] Leipzig Declaration on Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture. 1996. Para 7.

Vergata, organized an expert workshop on "*Public agricultural research: the impact of IPRs in biotechnology in developing countries"* with the participation of experts from developing countries with big, medium and small biotechnology programmes, developed countries, international organizations, private sector institutions and the civil society. This was part of a specific consultation process in the field of agricultural biotechnology, and an attempt to identify elements to promote and strengthen partnerships between public and private sector institutions. Considering the relevance of the information for the issues discussed in this paper, and without precluding the need for specific studies or other consultation in a wider context regarding access to and transfer of technologies in the seed sector, the conclusions and recommendations of that workshop are included as follows for consideration of the WG-PGR.

- The overall complexity of the issue, and the general lack of awareness and expertise in IPR legislation and management in research institutions, narrows the margin for negotiations with IPR holders.
- Fragmentation of competencies and divergent views amongst different stakeholders were serious constraints to the definition of coherent policies not only on IPR, but also in other regulatory areas affecting biotechnology products.
- Development of a negotiation strategy to access a particular technology or product is not an easy task, since it requires specific skills and knowledge to identify the terms and appropriate time to initiate the negotiation with the rights holder.
- Some experts mentioned that the establishment of strategic alliances with the private sector to negotiate wide commercialization packages could include IPR aspects, and also build entrepreneurial capacity in applied biotechnology research to fill that gap.
- Participants also mentioned the need for readily available information concerning IPRs, licences and freedom-to-operate with respect to enabling technologies such as key promoters, genes, tools for genetic transformation etc.

43. Key issues considered included:

- The need to inventory and analyse intellectual assets at the institutional level, as a necessary step to better define the actual freedom to operate and identify needed assets. It is important not to overestimate IP assets, since their value is defined by the existing demand;
- The need to negotiate access to a protected technology or an intermediate product required for a research programme before the final result had been obtained;
- The importance of a clear understanding of the freedom to operate around each protected invention;
- The development of partnerships with the private sector, foundations and public companies as a key part of a good negotiating strategy;
- The strong need for human capacity to develop a specialized trained team at the institutional level to deal with IPR related issues;
- The importance of promoting business development and the potential establishment of incentives for researchers concerning commercial development (incentives in the form of, e.g., career development, financial returns, and so on); some experts noted however that in some countries the institutional structure did not allow for such local incentives due to the existence of a centralized structure;
- The utility of material transfer agreements in negotiating for the commercial use of research results, minimizing costs and facilitating the research process.

Recommendations for FAO and stakeholders

- At national level, a multi-stakeholder approach should be followed to develop a national strategy on biotechnology;
- Technical assistance on managing proprietary knowledge was a common need across countries. In defining training initiatives, other training niches to be filled in IPR related issues should be identified and included;
- The definition of a strategy to manage the freedom to operate around protected inventions was a key need;
- The possibility of establishing a policy network on biotechnology with an initial focus on IPR issues should be further explored. Participants agreed to provide more detailed comments once the meeting report had been made available;
- Regional initiatives to manage IPR issues collectively have great potential to facilitate research in biotechnology. FAO's potential role as a catalyst was emphasized;
- Initiatives towards facilitating available information on the proprietary status of technologies and products should be supported, including in particular the periodical development of a document on the proprietary status of key enabling technologies and products.

Seed relief

44. The overall aim of seed relief activities is to contribute to food and livelihood security by ensuring that farmers, especially vulnerable farmers, have access to seed (planting material) of adequate quality. This does not mean that seeds must necessarily be directly supplied from outside. Instead the emphasis is on facilitating farmers' access to seeds, by direct distribution or through other means. Seed relief is to be seen within the broader context of supporting food and livelihood security.

45. Seed relief activities should (a) meet the immediate needs of farmers for access to planting material and (b) contribute to long term restoration, rehabilitation or improvement of agricultural systems. By supporting food production, seed relief should decrease dependence on repeated food aid.

46. These aims are nested within the broader aims of strengthening food and livelihood security consistent with the broader aims of FAO's Strategic Objective A3: "Preparedness for, and effective and sustainable response to, food and agricultural emergencies". Specific recommendations are also included in Priority Activity 3 of the GPA "Assisting farmers in disaster situations to restore agriculture systems".

47. At the expert workshop, participants agreed on the overall goal of seed relief interventions and recommended the following guiding principles:

a) Needs assessment should underpin any decisions to undertake seed relief and guide the choice among possible interventions. Such needs assessment should be holistic, putting seed security in the context of livelihood security;

b) Seed relief interventions have to be clearly matched to the context (for example, a crisis caused by drought may require very different actions from a crisis caused by war). By supporting food production, seed relief should decrease dependence on repeated food aid;

c) Seed relief activities should aim to both (i) be effective with the immediate objective of facilitating access to appropriate planting material; and (ii) contribute

to the restoration, rehabilitation or improvement of agricultural systems in the longer term;

d) Ideally, considerations of seed system sustainability should be built into seed interventions from the beginning. As a minimum, seed aid should do no harm to farming systems. Thus emergency relief activities should support local seed system development, ideally by integrating long term needs into the design of the project;

e) Seed relief activities should be built upon a solid understanding of all the seed systems farmers use and the role they have in supporting livelihoods. The local system is usually more important to farmers' seed security and has been shown to be quite resilient. Depending on the context, the focus in case of an emergency should normally be on keeping the local seed system operational. One practical problem is that seed systems are often not sufficiently understood, especially in emergency situations. Hence there is a need for more emphasis on understanding seed systems, their role in supporting livelihoods, and needs assessment;

f) Seed relief interventions should facilitate choice by farmers of crops and varieties. Seed relief interventions should aim to improve, or at least maintain seed quality, and aim to facilitate access to crops and varieties that are adapted to environmental conditions and farmers' needs, including nutritional needs;

g) Monitoring and evaluation should be built into all seed relief interventions, to facilitate learning by doing and thereby to improve interventions;

h) An information system should be put in place to improve institutional learning and as a repository of information gained from cumulative experience. Such information systems should be institutionalized at national levels, to the possible extent;

i) A strategy to move from the acute emergency response to a capacity building or development phase should be included in the design of the intervention;

48. These principles, endorsed by the FAO Emergency Coordination Group, have important implications for FAO in terms of formulation of project documents including needs assessment. Guidelines for needs assessment and the module on seed relief, currently both under development, will assist project formulators in their task.

Recommendations for FAO's action

49. FAO does not implement food aid, but does carriy out food supply assessments jointly with WFP. The Organization implements seed aid and other interventions aimed at increasing agricultural productivity, althoguh it has little capacity to assess needs for such interventions. It was suggested that, the scope of GIEWS and FIVIMS should be broadened to include needs assessments relevant to seed security and other aspects of agricultural productivity. Ex situ gene banks can also play an important role in providing seeds when lost after disasters. Seed related information in the World Information and Early Warning System on Plant Genetic Resources should be linked to GIEWS.

50. More attention should be given to management of information relevant to emergency relief operations in FAO to facilitate learning by doing. Needs assessments and the design of emergency operations require an inter-disciplinary approach and should draw more effectively upon data and expertise in various FAO departments and other institutions.

51. Administrative procedures, including procurement procedures should be reviewed to facilitate emergency operations and allow for innovative approaches.

52. FAO should promote greater attention to preparedness among its partners, including the development of seed system profiles or baseline seed security assessments for disaster-prone

countries, and should explore how to scale up the use of seed fairs and vouchers, inter alia, building upon the Organization's experience in scaling up farmer field schools.

53. The workshop recognized that there are many opportunities for strengthening partnerships between FAO and other organizations. FAO should work more closely with NGOs and local institutions in project implementation, and promote a two-way learning process between NGOs and the Organization. Greater recognition should be given to NGO contributions.

Quality declared seed

54. As a follow up to previous FAO work on QDS[11], and in order to consider new technical developments, technical experts agreed that attention should be given to the following issues:

a) The need to clarify the potential users of QDS and how they may implement it to the benefit of the seed system and ultimately the farmers for whom that system exists;

b) The ultimate objective of QDS should be to facilitate the assurance of seed quality to farmers;

c) The changing status of seed quality assurance in developing countries. It was highlighted that in principle, QDS is more relevant today because of the diversification of the seed system and sources in many countries to facilitate the involvement of more and different suppliers in providing seeds to farmers;

d) QDS could be a very useful alternative system to classical seed certification, especially for crops, which are not covered by the commercial seed sector, and for new innovative varietal development methods such as participatory varietal selection;

e) The relevance of QDS for national and cross-border movements of seed and the need to promote the scheme in sub-regional initiatives such as the compatibility of seed rules and regulations;

f) The need to take advantage of the opportunities afforded by QDS to apply quality control in seeds of crop species that are presently not covered by the private seed sector.

Recommendations for FAO's action

55. FAO should finalize the revised edition of its Quality Declared Seed document, incorporating new crops as well as the revised seed standards into the document.

56. FAO should take adequate action to promote the implementation of QDS at global level, particularly in developing countries where there is no quality control system in place.

57. The QDS should be made as widely available as possible, using various means including the Internet.

58. FAO should organize another Expert consultation to produce a manual aimed at issues related to a quality control scheme for clonal (asexual) crops.

[11] See footnote 8 in this document for background reference information on QDS.

5. GUIDANCE SOUGHT FROM THE WG-PGR

59. Seed systems are dynamic and complex and are closely linked to PGRFA conservation and use, particularly on-farm. This document presents a summary of conclusions and recommendations of a wide consultation process aimed at the strengthening of seed systems as a means to achieve the objectives of the GPA and of the IT-PGRFA.

60. The WG-PGR is requested to provide comments and suggestions, revise and endorse when appropriate all or part of the conclusions and recommendations of the expert workshops provided in section IV of this document, for further approval by the Commission.