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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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INTERNATIONAL PLANT GENETIC RESOURCES NETWORKS

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PLANT GENETIC RESOURCES NETWORKS

1. INTRODUCTION

1. Since 1991, the Commission has considered progress reports on its Global System on Plant Genetic Resources at all its regular sessions, and attention has been given to the role of networks (crop and thematic as well as *ex situ*) as one of its instruments. Hence, at its eighth regular session, the Commission underlined the "important role of regional plant genetic resources for food and agriculture networks in promoting the implementation of the *Global Plan of Action*" for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (GPA) adopted in 1996.

2. Both the GPA (Activity 16) and the recently adopted International Treaty on Plant Genetic Resources for Food and Agriculture (Article 16) recognize the importance of networks as mechanisms for their implementation. Networks form "important platforms for scientific exchange, information sharing, technology transfer, research collaboration, and for the determination and sharing of responsibilities for such activities as collecting, conservation, distribution, evaluation, and genetic enhancement of plant genetic resources." The GPA further notes the role of networks in promoting exchange of materials on the basis of mutually agreed terms, enhancing the utilization of germplasm, helping to set priorities for action, developing policies, and providing a means whereby crop-specific and regional views can be conveyed to various organizations and institutions.

3. This paper presents the results from a recent overview study made of networks, and aims to provide a basis for seeking guidance on the further work to be carried out on issues related to networks in the context of the GPA and Article 16 of the Treaty. Article 16 of the Treaty states that ***"****Existing co-operation in international plant genetic resources for food and agriculture networks will be encouraged or developed on the basis of existing arrangements and consistent with the terms of this Treaty, so as to achieve as complete coverage as possible of plant genetic resources for food and agriculture. The Contracting Parties will encourage, as appropriate, all relevant institutions, including governmental, private, non-governmental, research, breeding and other institutions, to participate in the international networks."*

2. SUMMARY AND ANALYSIS OF NETWORKS[1]

2.1 Methodology, scope and limitations

4. Information on networks was drawn from a number of sources, including in particular: the information assembled under sections 6.2.1, 6.2.2 and 6.2.3 of the State of the World's Plant Genetic Resources for Food and Agriculture (SoW); a network survey of genetic resources and related networks conducted by IPGRI in 1999, on behalf of the CGIAR System-wide Genetic

[1] The information contained in this section of the paper is based on a background study commissioned by FAO to provide a preliminary summary and analysis of networks with the potential to contribute to the objectives of the GPA and the Treaty. The study is entitled "A summary and analysis of existing international plant genetic resources networks". At the request of the Secretariat of the Commission it has been put at the disposal of the Commission on Genetic Resources for Food and Agriculture as Background Study Paper No. 16.

Resources Programme (SGRP); workshop reports; discussions with staff at FAO and IPGRI; and information available on the Internet. The information gathered is compiled in the inventory that will be available electronically with a view to completion and updating of the information by networks (http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPS/pgr/netw.htm).

5. Networks were examined based on criteria such as their objectives and activities, geographical coverage, crop or thematic focus, and membership. Factors affecting the effectiveness and efficiency of these networks were considered.

6. Analysis of the coverage of networks focused primarily on the regional PGR networks and on networks focusing on the major crops outlined in the SoW. The focus on PGR networks and major crops may have biased the analysis towards networks linked to the CGIAR centres. Networks relating to other groups of crops (such as vegetables) and other *in situ* oriented and thematic networks (such as the Man and Biosphere (MAB) networks) were included in the study for the purpose of discussing their actual and potential contribution to the objectives of the GPA and the Treaty, rather than an analysis of their coverage. Many networks related to forest genetic resources may also contribute to the objectives of the GPA and the Treaty, however these were considered outside the scope of the present report.

2.2 Important characteristics of networks

7. The term "network" can refer to many different arrangements between people, institutions and countries, both formal and informal, and a wide range of definitions have been applied to agricultural research networks.[2] However, several common principles emerge from these definitions:

- Voluntary membership;
- Common goals to address complex problems better solved by more than one individual or institute;
- "Multilateral" exchange (of research results, materials, information, technologies, etc.);
- Participatory management; and
- Benefits to members from collaboration.

8. Aside from these common characteristics, networks that contribute to the conservation and sustainable use of PGRFA vary considerably in many ways, for example in their membership, objectives, *modus operandi*, funding and organizational structure. An important aspect to take into consideration is the level of formality at which a network operates. This may depend not only on the network's age and stage of organizational development, but also on its function. The International Network of *Ex Situ* Collections under the auspices of FAO, for example, is necessarily a highly formal network, whereas a working group of scientists on a targeted technical subject such as fodder may be able to network effectively for many years without a formal status.

9. The background study classified networks into five categories based upon their scope and objectives: regional PGR networks, crop-based networks, *in situ*-oriented networks, thematic networks, and (sub)regional fora. This classification has been used to provide a framework for analysing the networks. Annex 1 presents an overview of the general characteristics of these five categories, their potential contribution to the GPA and the Treaty, and some potential strengths and weaknesses of each typology.

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[2] Please see background study for further elaboration.

2.3 Summary of current coverage of relevant international and regional networks

10. An overview of networks found with actual or potential contributions to the objectives of the GPA and the Treaty is presented in a Table in Annex 2. The Table is not a comprehensive listing but rather intended to "paint a picture" of the current situation. Regarding *in situ*-oriented and thematic networks, examples have been provided for discussion purposes.

11. This section provides some analysis of the coverage of regional PGR and crop-based networks.

2.3.1 Regional PGR networks

12. The GPA (paragraph 254) recommends that for regional networks, priority should be given to strengthening existing networks or integrating countries not presently served by them, and the establishment of new networks in regions where they did not previously exist. For all of these geographical subregions, PGR networks have now been established. However, in many cases, these PGR networks are still very young and may need strengthening. Regional PGR networks often function under the umbrella of (sub)regional fora such as ASARECA[3] and APAARI.

13. It was noted in assessing the coverage of regional PGR networks that the least developed Southeast Asian countries are not members of their subregional PGR network RECSEA-PGR. Some Eastern European countries are not yet included in the European PGR network, but do actively participate in ECP/GR activities. The Caribbean network CAPGERNet and the new Pacific PGR network both cover approximately half of the countries in their respective subregions.

14. Many of the countries observed to be not yet included in networks were small islands. The GPA recommended the establishment of a PGR network for Indian Ocean Islands, but most of these islands are now members of African networks. Island states have special ecologies, and may face similar issues in the conservation and sustainable use of PGR. Interregional collaboration among island-based networks might provide the opportunity for sharing experiences and identifying priorities on island-specific issues.

2.3.2 Crop-based networks

15. Regarding the coverage of crop-based networks, for the major crops outlined in the SoW, most crops mentioned in the SoW as being important for food security in a particular region or subregion (see Chapter 1 and Annex 2 of the SoW in particular) were found to have networks operating in those subregions.

16. In seeking to identify gaps in networking, considerable caution should be exercised, as in many cases, projects and organizations may carry out networking activities although a formal network does not exist *per se*. In some cases, projects may build on the previous work of networks. Similar caution should be exercised in identifying overlaps. For some major crops, a considerable number of networks exist. However, the scope and/or focus of these networks may range considerably, making it difficult to ascertain overlaps without a more in-depth understanding of the issues addressed by the networks, their functioning, and complementarities and linkages among networks.

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[3] A list of acronyms is provided in the background study "A summary and analysis of existing international plant genetic resources networks".

17. In a number of cases (e.g. the Global Cassava Development Strategy, and the global network on tropical and subtropical fruit REMUFRUT), global strategies and/or networks are being formulated to coordinate activities and networking. This process may help in avoiding possible duplication of activities and efforts. However, care should be taken that the global objectives of such programmes do not negatively affect local networks.

2.4 Contribution of networks to the four main areas of work of the GPA

2.4.1 In situ *conservation and development (activities 1-4)*

18. *In situ* conservation is addressed by regional PGR networks and by the *in situ*-oriented networks such as the MAB world network of biosphere reserves. Thematic agroecology and community development focused networks may also contribute significantly to the objectives of the GPA in this area, by promoting sustainable agricultural practices and more diverse agricultural ecosystems. Crop-based networks may in some cases also contribute to *in situ* conservation. In particular, seed networks may contribute to supporting on-farm management and improvement of plant genetic resources for food and agriculture, as well as assisting farmers in disaster situations to restore agricultural systems.

19. In general, linkages between these different networks for *in situ* conservation are not obvious, however recent developments (such as the Seville+5 recommendations of the MAB networks) may encourage improved linkages and collaboration. Regional PGR networks may wish to reassess their linkages with other networks focussing on *in situ* conservation and development. Document CGRFA-9/02/13, *Progress Report on the development of a network of* in situ *conservation areas*, reviews the Commission's past considerations regarding *in situ* conservation and then outlines the recent initiative under an FAO/UNDP GEF project, in support of globally important ingenious agricultural heritage systems (GIAHS), that may serve as a lighthouse for integrated and innovative approaches to *in situ* conservation, in the context of sustainable agriculture.

2.4.2 Ex situ *conservation (activities 5-8)*

20. The International Network of *Ex Situ* Collections under the Auspices of FAO, includes the collections held by the CGIAR centres and within COGENT that are held in trust for the world community under agreements with FAO. Crop-based networks are often closely linked with the in-trust collections held by the CGIAR as well as the improvement programmes of the Centres and NARS partners, providing a mechanism for collaborative testing and further development of germplasm materials (both CG and NARS).

21. Regional PGR networks may contribute substantially to the *ex situ* conservation of PGR, linking partners that manage large PGRFA collections. The role of the international network of botanic gardens in conserving PGR is also well recognized.

2.4.3 Utilization of Plant Genetic Resources (activities 9-14)

22. Crop-based networks are generally strongly focused on the utilization of plant genetic resources and cooperative testing and development of improved materials. The focus of crop-based networks is often on the development of a particular crop, contributing in particular to increasing genetic enhancement and in many cases to base-broadening efforts. The contribution of crop networks to the sustainable use and conservation of a crop appears to be variable. For example, the Asian Network for Sweet Potato Genetic Resources (ANSWER) works towards the conservation and evaluation of sweet potato collections, whereas the Asian Maize Biotechnology Network (AMBIONET) focuses rather on the development of improved maize varieties. Seed networks are important in supporting seed production and distribution.

23. Regional PGR networks, as well as the networks on under-utilized crops and medicinal species, may contribute to promoting the development and commercialization of under-utilized crops and species, as well as developing new markets for local varieties and "diversity rich" products.

2.4.4 Institutions and Capacity-building (activities 15-20)

24. Supporting national PGR programmes is a major focus of the regional PGR networks. Regional and subregional fora are actively engaged in regional priority setting for agricultural research and development. A number of priorities identified correspond with the priorities of the GPA. Regional fora often provide a supporting umbrella structure that helps to link different kinds of networks in a region. Linkages among networks, as well as synergies within and among countries and regions, is an important issue that may require further study. For this purpose, it may be useful to consider the potential strengths and weaknesses of different kinds of networks indicated in Annex 1.

25. Exchange of information is one of the most important functions of all networks, and the harmonization of databases and information systems, as well as building capacity for electronic communications, is an increasing priority for many networks. In addition, information systems such as WIEWS, SINGER, GRIN, and the European Central Crop Databases and EPGRIS project are examples of national, global and crop regional efforts to provide public access to information about genetic resources enhancing understanding of the status of its genetic resources conservation and promoting and facilitating their use. These activities contribute to the building of a Global Information System (activity 17 of the GPA and Article 17 of the Treaty).

2.5 Important factors affecting the efficiency and effectiveness of networks

26. The potential contribution of a particular network to the implementation of the Treaty and the GPA is, among other factors, heavily dependent on the effectiveness and efficiency of the network in achieving its objectives. There may be a considerable discrepancy between the written objectives of a network and the reality of its functioning. Some factors that may have a bearing on the efficiency and effectiveness of networks are discussed below.

2.5.1 Financing

27. Networks are often funded as projects, receiving support for 3-4 year periods, which may be difficult to renew. This can sometimes lead to networks becoming inactive at the end of the project. Mature networks such as the International Network for the Genetic Evaluation of Rice (INGER) may have greater capacity to deal with a drop in funding. A chronic problem remains the difficulty of ensuring resources over time.

28. Networks funded by donors within a project may choose to utilize the project cycle to consciously "phase" its evolution. Networks "evolve" naturally, and the need for periodic internal reassessment can be worked into a cycle of 3-4 years. The AVRDC vegetable networks SAVERNET and AVNET are planned in this way, enabling the networks to provide evidence of impacts at the appropriate time. In this situation it is important for donors to indicate whether networks will receive funding, under which conditions, for which objectives, and potentially for how long.

29. The only network studied that is financed completely through member contributions was ECP/GR. Self-financing may only be possible in mature networks, and in most developing countries the potential for complete self-financing is limited.

30. Some contributions by members to network activities, whether monetary or in-kind, is important. The African bean networks, for example, have maintained internal by-laws by which

the network steering committee expects to see minimum contributions by NARS members to each proposed subproject. In-kind contributions such as NARS' time are valued highly in this context.

2.5.2 Balance of interests

31. The NARS, as well as the CG centres, form the major basis for many of the networks studied. In many cases, CG centres were involved in the establishment of a network, often in collaboration with FAO and other international institutions.

32. While no comprehensive data on network membership was obtained, it was noted that network membership is dominated by the public sector, with some NGOs and private sector members. A number of crop-based networks (rootcrop, bean networks and fruit and vegetable networks) mention the promotion of private sector and NGO involvement, however actual membership of the networks most often consists of public sector and research institutions.

2.5.3 Management

33. Whether formal or informal, the management of networks is critical for its effectiveness. The existence of a lead country or lead institution with clear comparative advantages can provide a network with good management. Collective decisions on major issues, such as future strategy, workplans and budget, are also important: for example, annual steering committee meetings, involving all network members, may be needed to take collective decisions on network activities and resource allocation. Annual technical coordination meetings can also be important in developing annual workplans and budgets for approval.

2.5.4 Additional parameters influencing network functioning

34. It is essential that members of networks recognize their mutual interest, and that the benefits are realized by all members, to support complementary efforts by the totality of stakeholders: it needs to be apparent to all members that their collective efforts will result in a more efficient use of their limited human and physical resources.

35. Ownership in a network is often determined through participation in important decisions, particularly those relating to the distribution of funds. The question of ownership is also closely linked to important questions of clarity of objectives and level of participation in the networks, factors for which in depth analysis would require further communication with people involved in the networks. These considerations need to be addressed in further studies.

36. Network organization often evolves in response to numerous factors. Networks therefore need to be adaptable to be sustainable. Networks need to plan for change and evolution, monitor their activities and reassess their goals. A proposed framework for internal evaluation is included in the background study as Annex 1. Further development of this framework requires the involvement of the networks.

3. CONCLUSIONS

37. Section 2 of this paper presents the main findings of the background study conducted by consultants as a first step toward better understanding of the contribution of existing international and regional networks to the implementation of the GPA and the Treaty. In light of these preliminary findings, many elements of the Activity 16 of the GPA (promoting networks for PGRFA) are being implemented. However, several elements would benefit from a more thorough analysis to provide a fuller insight into the functioning of networks where issues such as ownership and participation, the synergies and complementarities between different kinds of networks as well as overlaps that may reduce the efficient use of resources, could be examined.

4. GUIDANCE BEING SOUGHT FROM THE COMMISSION

38. In order to strengthen networks and their role in the implementation of the GPA and the Treaty, the Commission might wish to:

(i) Encourage countries to complete the inventory of networks, including relevant thematic and *in situ*-oriented networks.

(ii) Endorse further assessment of the contribution of existing networks to the GPA and the Treaty (including their effectiveness) possibly through enhanced subregional-level examination of network issues, their functions, and the communication and synergies they provide or could potentially provide among different groups working toward the conservation and sustainable use of PGRFA, and further examination of the linkages and synergies among the different kinds of relevant networks, both within and between countries and regions.

(iii) Agree to the further development of the framework for internal evaluation of networks, in collaboration with networks including identification of "model" networks and production of case studies illustrating different types of networks.

(iv) Endorse formal collaboration with the UNESCO Man and Biosphere programme.

(v) Request the Intergovernmental Technical Working Group on Plant Genetic Resources during its next session to examine issues and opportunities to further advance networks in the implementation of the GPA and of the Treaty, taking into account the above elements.

Annex 1: General characterization of networks and their contribution to the objectives of the GPA and the Treaty[4]

Type of network	*Origins and scope*	*Role of parent institution*	*Objectives and activities*	*Membership and linkages*	*Structure and financing*	*Potential strengths*	*Potential weaknesses*	*Potential contribution to the GPA and IT*
Regional fora e.g. APAARI, SACCAR	Created by NARS to provide a general framework for agricultural research and development in the region. Good geographic coverage. (Sub)regional basis.	Horizontal linkages with FAO and CG centres.	• To strengthen NARS • to facilitate technology transfer and enhance rural development • to promote partnerships and communication • to promote sustainable development Usually policy-oriented.	Members are NARS. Linkages with GFAR and often good linkages with regional PGR networks. Part of the pubic domain	Formalized, high level networks. Usually financed by member NARS (including from core funding of NARS), sometimes by donors.	State support Continuity Global linkages	Over centralization. Some danger of lack of focus on the sustainability of agricultural production.	All areas, but especially utilization of PGR and Institutions and Capacity-building
Regional PGR networks e.g. ECP/GR, GRENEWECA	Networks established by NARS with support by IPGRI, in the context of GPA implementation.	All facilitated by IPGRI, strong linkages with FAO and	To strengthen national PGR programmes and efforts of NARs regarding PGRFA. PGR management in	Members includes NARS. Part of the public domain Linkages with	Steering committees; secretariats. Major support role by IPGRI (secretariat	State support Clear role to implement the GPA.	Over centralization. Danger of unclear objectives and/or lack of	Activity 16 of the GPA/Article 16 of the IT on networking. Contribute to all aspects, but

[4] A list of acronyms is provided in the background study "A summary and analysis of existing international plant genetic resources networks".

Type of network	*Origins and scope*	*Role of parent institution*	*Objectives and activities*	*Membership and linkages*	*Structure and financing*	*Potential strengths*	*Potential weaknesses*	*Potential contribution to the GPA and IT*
	Many young networks. Good geographic coverage. (Sub)regional basis.	other CG centres.	general. Sometimes showing explicit focus on major regional crops or crop originating in the region. Wide focus on research and training. Usually not policy- and awareness-oriented.	NARS, and regional agricultural R & D fora and networks, as well as with crop-specific networks.	and/or coordination) Member- and donor-funded		focus. Complex functioning May not link well with crop specific, thematic and *in situ*-oriented networks in the region unless they are a sub network of the PGR network.	particularly *Ex situ* conservation and Institutions and Capacity-building
Crop-based networks e.g. SAVERNET, CLAYUCA, REMUFRUT	Networks arise more directly out of a need or opportunity identified by stakeholders. Often older than general PGR networks. Although still in majority regional, a considerable number of global networks have	Regular support from parent organizations involved (usually CG). Involvement of CG dominant for major crops.	• To increase productivity and /or social development • To improve conservation, exchange, research on conservation, research on utilization (in any combination). Focus on exchange and	Can include broad mix of membership from a range of sectors, depending on crop and objectives of the network. Associations with FAO, and CG centres. Links to general PGR networks not always apparent.	Structure of the network tends to be looser, often primarily run by a steering committee. Supports on voluntary basis. Usually donor funded, and/or based on inputs in-kind.	Less institutionalized than general PGR networks. Also, interests more direct.	Coordination by European institutions/ CG over represented. Potential conflicts of interest between different stakeholders Potential lack of continuity due to donor	*Ex situ* conservation Utilization of plant genetic resources (of a particular crop or group of crops).

Type of network	*Origins and scope*	*Role of parent institution*	*Objectives and activities*	*Membership and linkages*	*Structure and financing*	*Potential strengths*	*Potential weaknesses*	*Potential contribution to the GPA and IT*
	evolved.		use. Usually not policy - and awareness-oriented with the exception of under-utilized and medicinal plants.	Sometimes regional networks merge together or collaborate into a global framework network or programme.			funding.	
***In situ*-oriented networks e.g. MAB networks, EMERALD.**	Networks often arise out of efforts to co-ordinate conservation areas and/or policies in a particular region/globally in accordance with international agreements.	Often in the framework of a strong regional or global organization e.g. UNESCO, Council of Europe.	• To coordinate and communicate between sub networks • To standardize good practices • To forge linkages and information dissemination Policy- and awareness-oriented	The official members are usually other networks or the protected areas themselves. Governments (e.g. ministers of environment) usually strongly involved.	Financed by donors/ parent organization Secretariat facilitates communication, development of new sub networks	Public appeal Clear conservation goals in line with the CBD	Lack of linkages with sustainable utilization	*In situ* conservation of PGRFA

Type of network	*Origins and scope*	*Role of parent institution*	*Objectives and activities*	*Membership and linkages*	*Structure and financing*	*Potential strengths*	*Potential weaknesses*	*Potential contribution to the GPA and IT*
Thematic networks e.g. AFNETA, REDBIO.	Usually created by interest groups and stakeholders, often bottom-up initiatives. Some regional, some global networks.	Sometimes connected to a parent institute, may be an NGO	• To promote a particular (development) theme Often strongly policy- and awareness-oriented	Usually public and civil membership. Private sector involvement in some cases, depending on the issue.	Often informal networks with minimal financial resources. Funding often from donor agencies and/or NGOs.	Field level impact. High level of commitment.	General theme of the network may be vague. Often not very visible. In some cases, lack of access to formal expertise	*In situ* conservation of PGRFA Utilization of plant genetic resources Capacity-building.
Problem-Solving Networks	Arise out of recognized common needs to address a problem, such as wheat rusts in the Nile Valley and Red Sea Area.	Often coordinated by an umbrella institution such as CGIAR	• To resolve a specific problem • In the case of a chronic problems, for the coordination of monitoring and control activities	Specific countries and institutions involved	Specific problems may need one-time commitments to resolve them, after which the network may be wound up. Chronic problems requiring regular funds.	Clear tasks and priorities.	Difficult in sustaining long-term funding, if required, particularly in periods of recession of the problem.	Promoting Networking and problem-solving.

Annex 2: Overview of international and regional networks studied[5]

Network category	*Global*	*Sub-Saharan Africa*	*Asia, Pacific and Oceania*	*CWANA*	*Americas*	*Europe*
1. (Sub)regional for a	GFAR	FARA ASARECA SACCAR CORAF	APAARI	AARINENA CAC Forum	FORAGRO PROCIs & SICTA	EFARD ESCORENA
2.Regional PGR networks	FAO International Network of *Ex Situ* Collections WIEWs SINGER	EAPGREN GRENEWECA SPGRC SABONET	EA-PGR RECSEA-PGR SANPGR Pacific PGR network	WANANET CATCN-PGR	NORGEN REMERFI REDARFIT TROPIGEN CAPGERnet RIM	ECP/GR Nordic-Baltic Cooperation on PGR
3. *In situ*-oriented networks	UNESCO's World Network of Biosphere Reserves	AfriMAB	EABRN ASPACO South and Central Asia MAB Network	ArabMAB	IberoMAB	EUROMAB Pan-European Ecological Network (EMERALD & Natura 2000)
4. Thematic networks	IFAP	SABONET	APAN		REDBIO	EFNCP

[5] A list of acronyms is provided in the background study "A summary and analysis of existing international plant genetic resources networks".

Network category	*Global*	*Sub-Saharan Africa*	*Asia, Pacific and Oceania*	*CWANA*	*Americas*	*Europe*
	Honey Bee Network Mountain Forum IPBN	AFNETA IPUF LCA TOFNET African Ethnobotany Network	SEANAFE SEASAKNet		CONDESAN RIMISP REDECO	PEN/GIB
5. Crop networks:						
WheWheat and Maize	International Germplasm Testing Network	ECAMAW MWRINET WECAMAN	TAMNET AMBIONET	SEWANA Durum Wheat Research Network WANADDIN ICARDA NVRSRP networks	PRM-CIMMYT LAMP	ECP/GR Cereals Network
Rice	INGER INTAFOHR URRC RLRRC	WEDEM/IVS ECSARRN ROCAS	ARBN RWC IRRC	MED-rice	CRIDNet GRUMEGA INGER-LAC	
Sorghum and millets	INTSORMIL CRSP	WCASRN WCAMRN SMINET	CLAN		CLAIS	

Network category	*Global*	*Sub-Saharan Africa*	*Asia, Pacific and Oceania*	*CWANA*	*Americas*	*Europe*
		ECARSAM				
Cassava	CBN Cassavanet MOLCAS	SARRNET EARRNET CEWARRNET	ACRAC		CLAYUCA CAROT	
Sweetpotato and Potato		PRAPACE	UPWARD ASPRAD ANSWER SAPPRAD		PRECODEPA PRACIPA PROCIPA REDEPAPA	ECP/GR Industrial Crops and Potato Network
Banana and Plantains	INIBAP PROMUSA	MUSACO BARNESA	ASPNET		MUSALAC	
Common bean & rel. species		PABRA ECABREN SABRN			PROFRIJOL	
Soybean & other legumes	Bean/cowpea CRSP	North African Faba Bean Research Network	CLAN CLVNET			European Cooperative FAO Network on Soybean Research ECP/GR Grain Legumes Network
Sugarbeet, sugarcane	WBN	CIRAD network (West Africa)				
Forages and rangeland crops	International Network on Genetic	AFRNET	SEAFRAD	ICARDA Dryland Pasture and Forage Legume	Himalayan Pasture and Fodder	ECP/GR Forages Network

Network category	*Global*	*Sub-Saharan Africa*	*Asia, Pacific and Oceania*	*CWANA*	*Americas*	*Europe*
	Resources of Tropical Forages LEUCNET LGRN	SAFORGEN Fodder Tree Species Network FAO/AGPC Working Group for East Africa	FAO/AGPC Working groups for SE Asia and Temperate Asia	Network (& Europe; USA; Australia)	Research Network FAO/AGPC Working groups for Chaco & Campos, Patagonia and Cool Temperate Grasslands	ESCORENA Pastures and Fodder Crops Network (also Near East)
Fruits	REMUFRUT DPGN GCGN TFNET	WAFNET SAFORGEN Food Tree Species Network	NeSCRA SAMEO-BIOTROP	MESFIN MECINET	CARIFRUT RIAC/IACNET RELAFRUT	ECP/GR Fruit Network
Vegetables	TCN	SAVERNET	CONVERDS AVNET AARNET CLVNET		REDCAHOR CARIVEG	ECP/GR Vegetables Network
Under-utilized crops networks		SEANUC	UTFANET UTVAPNET	MEDUSA Rocket Network		ECP/GR Minor Crops Network
Medicinal plants	MEDPLANTS	NAPRECA	ANMAP MAPPA			

Network category	*Global*	*Sub-Saharan Africa*	*Asia, Pacific and Oceania*	*CWANA*	*Americas*	*Europe*
Seed	Seed Savers Network	ASN SSSN WASNET	SNAP	WANA Seed Network CFS-NENA	SCF-LAC	FAO Eastern Europe Seed Consultative Forum
Other networks	GNM CactusNet COGENT CIRAD Cotton Networks	CORNET ACRN BAMNET Oilcrops Network for East Africa and the Indian Region CORAF Arachide Network	Safflower Network Asian Network on Oilseed Crops	FAO-CIHEAM Nut Network (also Europe)	PROMECAFE	ESCORENA Networks on Cotton, Flax and Olives