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***Strengthening Partnership in Agricultural Research
for Development in the Context of Globalization***

**WEST ASIA & NORTH AFRICA (WANA)
REGIONAL FORUM***

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Collaboration in Agricultural Research and Technology Development; A key to Regional Food Security and Sustainable Agricultural Development in WANA Region¹

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Introduction

1. Agricultural development in the WANA region is mostly influenced by arid and semi-arid climate which makes it the poorest region in the world in terms of water resources both globally and on inhabitant basis. Although the region occupies about 14% of the total area of the world (18.5 million Km²) and supports about 10% of the world's population (almost 600 million), it possesses only about 2% of the total renewable water resources (Zehni 1998).
2. By 2020, seventeen countries in the region will not have enough water to maintain 1990 level of per capita food production from irrigated agriculture and meet industrial, household and environmental needs (IWMI 1998).
3. Agricultural land resources in the region are both very limited and fragile; the arable land (147 million hectares) occupy only 8% of the total land area from which about 24% (41 million hectares) were under irrigation in 1993. Desert or semi desert covers a staggering 70% of the total area, with 22% under pasture. The irrigated land is projected to increase to about 51 million hectares, an increase of 24%, by year 2020(Sara, J. Scherr 1999).
4. Although the region is rich in indigenous plant genetic resources and is the center of diversity for a number of globally important crops but most of its diversity is threatened by erosion due to increasing agricultural activities including mechanization, urbanization and habitat destruction by overgrazing and deforestation (Zehni 1998).
5. Despite affluence in some parts, poverty and food insecurity persists in the region and some of its poorest countries are also the poorest in the world. Over 80% of the population live in countries with an average per capita GDP of less than US \$ 1.10 per day. More than 70% of the impoverished people live in rural areas and largely depend on agriculture as a source of income.

Present status of Food Security and Poverty in WANA

6. Many countries in the region is increasingly confronted with paramount challenges to achieve food security for the rapid growing population. A net exporter of food less than half a century ago, the WANA has become the largest food importing region in developing countries. In 1995, the region imported 38 million tons of cereals, about 36% of total net imports of developing regions (IFPRI 1999). The cereal import is projected to increase to about 60 million tons in 2020, about 31% of total imports of developing regions.

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In 1997, the value of food which was imported into the region was over US \$ 29 billion, an increase of 30% as compared to 1990 (FAO 1999).

7. It is projected that the average annual growth rate in cereal production for the region will be about 1.8% between 1995 to 2020 (IFPRI 1999) with large portion of the growth rate (about 1.3%) attributed to increase in yield improvement. However, the food grain gap is predicted to be around 60 to 80 million tons in 2020, even with an average annual growth rate of production at about 2% (IFPRI 1999 and Bellagy 1977).
8. FAO has also estimated that only 7% of the achievable increase in food production in WANA region could be obtained from the expansion of current cultivated land, another 21% from more intensive cropping pattern, while major increase of about 72% to be obtained by increasing yield improvement of crops. The big challenge for many countries in the region is to achieve this enormous increase in agricultural productivity while their natural resources have already been threatened by degrading processes of land degradation, desertification, depletion of water resources and erosion of genetic diversities.

Productivity of NARSs in the Region

9. A recent study carried out by AARINENA, ICARDA, FAO and CIHEAM on National Agricultural Research Systems indicated that in many countries of the region, the research capacity required for development and transfer of appropriate environmental friendly technologies to increase agricultural productions have not yet been fully obtained. Agricultural research has been largely concentrated in public agricultural research institutions. Universities are mostly recognized for their role in development of human resources, not active involvement in research activities. The survey illustrated that the share of contribution of faculties of agricultural sciences to research activities in 1996-98 on a regional average was about 23% of the total NARSs. Most of the research activities were carried out by research institutes mainly affiliated to the ministry of agriculture. Private Sector research was very limited in the region (ICARDA 1999).
10. At present most of the countries in the region are not adequately investing in agricultural research. In 1996-98, the investment on agricultural research for the entire WANA was estimated at about 0.42 percent of AGDP for the region with large variations among different countries (ICARDA 1999). This is much less than 1% recommended for developing countries by some international organizations (IFPRI 1995). The review of the NARSs in WANA region also illustrated that in 1996 to 1998 the efficiency of research staff on a regional average was only 36% due to insufficiency of financial resources needed for the operational and capital costs. Therefore, the main thrust for many NARSs in the region is to increase the productivity of the research staff by mobilizing enough operational funds, since a high proportion of their budgets are presently allocated to salaries, wages and allowances.

Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA)

11. The mission of AARINENA which was established in 1985, with co-sponsorship of FAO, ICARDA and ISNAR is to contribute to the enhancement of agricultural and rural development in the region through fostering agricultural research and technology development and by strengthening collaboration within and outside the region in order to achieve greater degree of self reliance in food, and to improve the nutritional well-being and overall welfare of the people of the region, while at the same time sustaining and further improving the productive capacity of the natural resource base.
12. AARINENA region includes 27 countries and is divided into the five sub-regions of Maghreb, Mashreq, Arabian Peninsula, Nile Valley and Red Sea and West Asia. At the present, twenty one institutions from eighteen NARSs of the region as well as three international and regional organizations (AOAD, ACSAD, IPGRI-CWANA) are members of the Association.

A Vision for future

13. AARINENA members believe that the way forward is in bringing together the scientific strength and talents available in the Region to collectively tackle the formidable challenges and tasks ahead.

AARINENA envisions:

1. Effective and efficient national agricultural research systems in WANA by:
 - Mobilizing all partners in technology generation and transfer; public, private sectors, farmers, and farmer's organization, etc.
 - Setting research priorities well attuned to the needs of farmers.
 - Using all opportunities offered by scientific and technological advances, biotechnology, ICT, ... to obtain food security, eradicate poverty and utilize the natural resources in a sustainable manner.
2. Strengthening sub-regional and regional collaboration building on scientific advances and experiences in and outside the countries of the region.

AARINENA achievements in the context of GFAR-2000

14. In the last couple of years, AARINENA has undertaken different initiatives to strengthen the national agricultural research systems and enhance the regional collaborations among different stakeholders of agricultural research and development in the WANA region. The main achievements of the Association in the context of GFAR-2000 are summarized as follows:

A. Establishment of a regional research and technology development network on date-palm based on commodity chain approach.

15. More than 90% of date productions occur in Near East and North Africa. Date-palm is a major commodity crop which is non-mandated by CGIAR. Dates are basically produced by small resource poor farmers throughout the region. Date-palm products and by-products play

an important role in the economy of the rural communities of the region. Date-palm plantations prevent expansion of deserts and land degradation, thus protecting the environment. Date palm has also provided mankind for thousands of years with essential nutrients. It is not looked upon just as a fruit but as a basic food commodity for the poor.

16. AARINENA activities with collaboration of FAO and NARS-Secretariat on the establishment of the Network include:
 - Expert consultation meeting in Karaj/Iran with participation of major date-producing countries in October 13-14, 1999.
 - Preparation of a draft document on the network establishment through consultancy.
 - Presentation of the draft document to General Conference of AARINENA in March 23-24, 2000 for its review and approval.
 - Validation of the document in an expert consultation meeting in May 5-6, 2000 in Beirut, Lebanon.
 - Presentation of the network to GFAR-2000 as an innovative research partnership in May 21-23, 2000, Dresden, Germany.

B. Enhancement of ICT for the WANA Region

17. To facilitate the exchange of scientific information and knowledge among all stakeholders of ARD in the WANA region and between them and out side world, it is highly essential to improve and enhance ICT in the region.
18. Information strategy for the West Asia and Worth Africa has been prepared by AARINENA through consultancy by collaboration of NARS-Sec. and FAO. The draft document was reviewed in an ICT expert consultation meeting held in Beirut, Lebanon from 21-22, 2000. The ICT experts from all the Five sub-regions of AARINENA and major regional and international organizations attended the meeting. The draft document was also presented to General Conference of AARINENA in March 2000 in Beirut, Lebanon, for further elaboration and approval. The final document on information strategy after different stages of reviews and elaborations by collaboration of NARS-Sec. is presented to GFAR-2000.

C. Preparation of successful Cases of Research Partnership in the WANA

19. Several cases of research partnership from the WANA region were chosen to be presented to GFAR 2000. These cooperative sub-regional research projects which were carried out with active involvement of NARSs are as following:
 - Development of wheat cultivars for durable resistance to leaf and stem rust in the Nile Valley. Partners: NARSs, Egypt, Ethiopia, Sudan and Yemen, IARCs, ICARDA and CIMMYT.
 - Development of integrated crop/livestock production systems in the low rainfall areas of the Mashreq/Maghreb Region. Partners: Iraq, Jordan, Lebanon, Syria, Algeria, Libya, Morocco, Tunisia, IARCs: ICARDA and IFPRI.
 - Use of Feed Block in West Asia and North Africa NARSs: WANA, NARSs/ICARDA/IFPRI.

- On Farm Water Husbandry Network For WANA Region, WANA NARS's/ ICARDA.
- Hassian fly management in North Africa WANA-NARSs/ICARDA/CIMMYT.

D. Inter-Regional collaboration with European Region, EIARD/EFARD

20. AARINENA and European Region have recently initiated discussions to strengthen the partnership in agricultural research and technology development. The following meetings have been organized to sketch out the framework of actions and priority areas of collaboration.

- Washington, D.C., During ICW Meeting in October 1999.
- Lisbon, Portugal, on invitation of EIARD in February 2000.
- Beirut, Lebanon, during AARINENA General Conference, in March 2000.

21. AARINENA with close cooperation of NARS-Sec. prepared through consultancy a paper entitled "AARINENA in 2000 and Beyond: A Framework For Action". The draft manuscript was first presented to AARINENA/European Region Meeting in Lisbon/Portugal in February 2000. The document was revised based on the discussions and recommendations of the meeting, then, it was submitted to the General Conference of AARINENA in Beirut, Lebanon in March 2000 for final elaboration and approval. This document is now ready for distribution in GFAR-2000.

22. For efficient and durable inter-regional collaboration between the WANA and European regions, other mechanisms of Financing the cooperative interregional research projects should be explored, in addition to Inco-Dev and Inco-Med mechanisms which already exist.

23. Establishment of a committee consisted of 2-3 scientists from NARSs of each region seems necessary. This committee will act as a focal point and facilitator and follow-up the decisions which have already made by both parties. This committee will also monitor and evaluate the progress and reports to AARINENA and European Forum periodically.

24. With collaboration of the relevant countries in the region, regional and international agricultural research and development institutions, AARINENA will undertake the following activities:

1. Strengthening and integration of the NARS through:
 - Appropriate policies;
 - Well defined objectives;
 - Clearly defined priorities;
 - Qualified research scientists;
 - Sufficient and sustained funding;
 - Coordination among all NARS's components (research institutions, universities, private sector, non-governmental organizations, farmer's associations).
 - Effective monitoring and evaluation mechanism.
 - Strong linkages between research, extension and farmers.
 - Active involvement of farmers in technology development and adoption.

2. Strengthening sub-regional and regional collaborations through:
 - Promotion of the exchange of scientific information and experiences;
 - Transfer of knowledge and technologies within and out side the region;
 - Establishment of Networks on CGIAR non-mandated commodities and subject matters.
 - Implementation of cooperative research projects based on regional priorities and needs.
 - Strengthening cross linkages between national, regional and international centers/organizations assist in the mobilization of financial, institutional and other forms of support to NARSs.

25. The following topics are among the top research priorities for regional and/or inter-regional collaborations:

- ❖ Water management and increasing water use efficiency.
- ❖ Land degradation and measures for its control including soil conversation.
- ❖ Rangeland rehabilitation and management.
- ❖ Crop improvement for wide adaptability and/or tolerance to biotic and abiotic stresses.
- ❖ Management of sustainable uses of salt affected soils.
- ❖ Use of saline and poor quality water for crop production.
- ❖ Sustainable use and management of dry-land areas.
- ❖ Minimizing the input of chemical fertilizers and pesticides.
- ❖ Livestock nutrition.
- ❖ Argo-forestry.
- ❖ Aquaculture.
- ❖ Natural resource management.
- ❖ Biotechnology, bio-safety and intellectual property right.
- ❖ Date palm, citrus, olive and cottton which are not mandated by CGIAR.

26. AARINENA believes that increasing agricultural productivity and sustainable use and management of natural resource are the only way to meet the challenges of rapid population growth, food insecurity, and poverty for many countries in the region for the next decades. This could be achieved through:

1. Effective and efficient NARSs and strong regional collaboration
2. Improved farm practices;
3. More rational use of soils and water resources;
4. Preservation of the environment;
5. More favorable government policies and support.