

7. General Assessment

7.1 ICARDA's Approach to Working with NARS

Among the International Agricultural Research Centres ICARDA is unique to the extent that it has evolved a very productive partnership with the widest range of individuals and institutes, in particular within the countries in CWANA. It has virtually become a Centre without walls working with NARS on a broad range of research activities to address the large variety of agricultural research and development needs of the dry-land areas. Networking has been used effectively; the Mashreq & Maghreb project and projects in the Nile Valley and Red Sea Programme are excellent examples of this. ICARDA has facilitated in a very positive manner the interaction between scientists and countries. A good example is the current strong relationship between cereal and food legume pathologists in North Africa. In Central Asia and the Caucasus it has created new opportunities for researchers of the various countries to exchange ideas and jointly develop research plans that are so badly needed under the current socio-economic conditions. ICARDA has been actively involved in the building of scientific bridges between countries within and outside the region.

Undoubtedly these extensive collaborative efforts put a heavy burden on the management and staff of the Centre to plan the research agenda and to use the available resources most efficiently. It must be ensured that the necessary critical mass is available to carry out the various research responsibilities. To achieve this ICARDA has worked increasingly with national scientists to undertake research activities in the various sub-regions, and has outsourced certain tasks to NARS. Lessons have been drawn from these new approaches to international agricultural research as a basis for the establishment of appropriate collaborative arrangements with the national partners. Thus, the expressions research continuum and partnership that are so frequently referred to in the CGIAR System have become a reality at ICARDA; they are part and parcel of the Centre's day to day operations.

However, in the increasing complex set of joint activities, the changes that have occurred within the international and national agricultural research systems over the last decennium must be given adequate consideration. This, because of the effect they have on the needs and opportunities for collaborative arrangements. These developments include the following.

- There have been very significant changes in the financial environment that have impacted strongly on the planning and implementation of the research agenda. There is less money available for international agricultural research, and more importantly there has been a dramatic reduction in unrestricted core funding. These changes took place from the mid 1990s onwards, and for example in the case of ICARDA, the amount of unrestricted core dropped from close to 80% to less than 40% of the total annual budget. Thus, the research conducted risks to be more determined by specific donor preferences and the availability of funding through special projects, than by the Centre's strategic plan. This is also pushing the research activities more to the applied side. Funding of important new research initiatives with countries from

unrestricted core funds as was regularly done in the past, has become almost impossible.

- In most cases the capacity of the national systems has been strengthened and their needs and interests for collaborative work have changed. For example, as shown in the West Asia and North Africa sub-regions, there is a stronger demand for integrated multi-disciplinary research activities, and for participatory work with farmer communities. The specific conditions of the CAC region require an intensification of policy research, in addition to the more traditional research support. With the development of the national systems it might be concluded that the Centre has become more a learner and less a teacher.
- The number and range of stakeholders has increased significantly, and now include NGOs, farmer organizations, private sector and others. This has increased the complexity of agricultural research by creating different demands; it can be time-consuming and requires increased communication efforts.
- The recent emphasis on poverty reduction through increased income generation requires changes in the traditional research priorities with for example more emphasis on cash crops, post harvest utilization and marketing. Also, there seems to be a gradual change in donor interests, placing less emphasis on quantity of agricultural products and more on quality. Some donors stress that outreach is the problem and the solution.

These new realities need to be faced in a professional manner. ICARDA Management is well aware of these changes and experiences them every day in the tough challenges it faces in its difficult balancing act of maintaining the highly appreciated strong collaborative research agenda, with an annual budget over which it has increasingly less control. However, not all the ICARDA staff may be fully up to date on these developments, and the possible implications for their research activities. For example these changes imply the need for a more multi-disciplinary approach to the ICARDA research agenda. In particular, during the country visits, it became apparent that many collaborators in the national agricultural research systems are also not sufficiently informed about these developments, and this has created misunderstandings on the continued interest of the Centre in collaboration with NARS partners.

7.2 Collaboration between ICARDA Staff and NARS

A questionnaire was sent to ICARDA staff in order to receive feedback on their perception of the importance of collaboration with NARS for the development and implementation of the Centre's research agenda. Staff members were requested to provide information on the number of colleagues they interacted with, the type of interaction, and the benefits derived from these collaborative efforts. They were also asked if the increasing demand from NARS and regional programmes affected the efficiency and quality of their research activities.

Less than 50 per cent of the ICARDA scientists reacted to the questionnaire sent to them. All responded that they were actively involved in joint research activities with NARS. On average each scientist maintains contacts with some 25 colleagues in various countries of CWANA and Latin America, and in some cases also in other

countries. These contacts include a combination of joint research activities, correspondence and planning. Virtually all researchers consider working with NARS essential and beneficial for the planning and implementation of their research activities. Some 75 per cent of them reported that these contacts constitute a relatively heavy demand on their time, and that it reduces, for example, their capacity to carry out innovative research at Headquarters.

After the analysis of the written replies received from the scientists it was considered useful to seek further clarification on a number of matters and this was done through personal interviews. All scientists confirmed that the outreach activities benefit in a significant manner their research activities and a variety of reasons was given for this.

- Special projects are aimed at applied and adaptive research and this is very useful for the overall effectiveness of the research undertaken. In the past many of the developed technologies collapsed under farmer conditions; outreach helps to identify new researchable issues, and this is also beneficial to the NARS.
- Outreach is essential for the job to be done; it stimulates innovative research.
- Some problems can only be studied in certain countries that usually have the necessary expertise, consequently both basic and applied research are benefiting from field projects.
- Outreach projects stimulate collaborative research activities with advanced research institutes.
- Research on development matters is very challenging and useful.
- The active involvement of ICARDA in rural development projects is very beneficial to the Centre; it ensures that research and extension are working closer together. It helps to partly solve the problem of technology transfer.
- The dialogue with NARS colleagues is very important to shape the research agenda, and outreach is essential for the job to be done.
- Outreach activities make it possible to test new working hypotheses; under unrestricted core funding this type of initiatives might not have been undertaken.

However, while the benefits were strongly emphasized by all staff interviewed, a number of issues were raised.

- The sustainability of the outreach activities needs to be increased; a major problem is that after the closure of projects the collaborative arrangements developed with national scientists cannot be maintained in an adequate manner.
- Special projects limit the work to certain regions/countries to the detriment of others; more efforts are needed to reach all potential collaborators.
- There are two kinds of projects (i) those planned and executed by headquarter scientists, and (ii) those executed by regional coordinators. The latter are not sufficiently coordinated with headquarters, and can become a real burden. The first type in particular promotes extensive interactions with a wide range of national staff.

- The outreach activities are very useful to strengthen NARS, but in the meantime ICARDA is moving closer to development activities. Consequently the credibility of ICARDA as a centre of excellence is under pressure.

The time devoted to outreach activities has increased over the last 5-10 years. The sustainability of these activities is considered an issue, which may create a stop and go situation. For example, for some special projects additional capacity had to be established at headquarters for which no funding is available after the closure of the project concerned.

Opinions on the effect of the increase of outreach activities on the time available for innovative research varied considerably. A majority felt that there was no significant negative effect. In general it may be concluded that scientists consider that special projects add value to the research undertaken by ICARDA. But some noted that only some 20-30% of the time was still available for quality research. No doubt, there is always much pressure on research time, for example as a result of frequent meetings. It may make the Centre less attractive for young researchers that have fewer opportunities to develop a scientific career. However, it should also be noted that more of the routine work is now undertaken by NARS. Thus, the overall impression is that the increase in outreach activities has not resulted in a decrease of research outputs, although this varies from scientist to scientist.

Virtually all scientists consider that they have adequate influence on the special projects that have been implemented by the Centre in their area of expertise. Thus, donor preferences do not influence in a significant manner the individual research activities. But, it is of course easier to obtain funding for a certain type of research activities. In that respect it was, for example, mentioned that an adequate balance needs to be maintained between support for traditional plant breeding and biotechnology.

In general scientists expressed some concern about the evolution of the ICARDA research agenda. Matters listed included:

- too many MTP projects that do not promote sufficiently inter-disciplinary research;
- NARS need help to improve/modernize their own organization and international centres are not doing enough in that respect. Marketing aspects and new applied research issues need to be addressed.
- With the lack of resources for attracting new staff ICARDA should make better use of students. The costs currently to be paid by students or their sponsors are considered too high and have been a disincentive for certain students to work at the Centre. ICARDA's training policy should be changed making it more attractive for students to come to ICARDA, keeping in mind that students can increase substantially the overall research capacity. It was also suggested that more efforts could be made to outsource group training and to limit training events to a certain period of the year.
- There is the constant worry about adequate special project money being available. Thus, there is uncertainty about the continuity of the research activities undertaken; not so much about the content of the research agenda.

It is generally felt that the annual planning meeting could be made a more productive event. It is not sufficiently used to update projects in a systematic manner and the participation of regional coordinators is considered very limited. It was generally felt that there is insufficient interaction between scientists at headquarters and regional programmes. There should be discussions between scientists and regional coordinators for in depth analysis of problems and to develop new ideas. The planning meeting needs to be organized in such a manner that it becomes the main joint research planning exercise during the year. All scientists need to be fully involved; projects should be discussed in project working groups and the outcome of the discussions presented to plenary. Considering the experience elsewhere it should become a planning week where all professional staff members interact with each other and contribute to the updating of the projects and the further development of the research agenda.

In the meeting of the CCER Team with the Regional Coordinators it was noted that the interactions between field and headquarters were effectively maintaining a two-way flow of information and dialogue. They consider that this assures congruence of Headquarters and NARS priorities, and that there is good complementarity between the research carried out at Headquarters and in the field. During the country visits national scientists met generally expressed strong appreciation for the various interactions with headquarter staff. However, it was brought to the attention of the Panel that there was a need for more frequent visits by scientists.

Given the interest expressed by the scientists to make better use of students to strengthen their research activities **the Panel recommends that in the light of the new funding realities leading to more limited permanent staff resources, the Centre revises its current training policy to facilitate the employment of students.**

To ensure the effective involvement of all professional staff in the field and at headquarters in the evolution of the Centre's research agenda, and in the development and updating of the project portfolio, there is a need to use the annual planning meeting in a more effective manner.

The Panel recommends that the annual planning meeting is organized in such a manner that it becomes the main joint research planning exercise during the year. All scientists need to be fully involved; projects should be discussed in project working groups and the outcome of the discussions presented to plenary. It should become a planning week where all professional staff members interact with each other and contribute to the updating of the projects and the development of the research agenda.

7.3 Regional coverage

Through the regional programmes ICARDA is well represented in the countries of CWANA. The Centre's mandate crops cover a very large part of the food production interests of the countries. However, as noted in particular during the country visits, there is an increased demand from countries for research support for the production of other crops, in particular fruits and nuts, and medicinal and plants.

All regional programmes cover well defined geographical areas, except the Highlands Regional Programme (HRP). Before 1991, the HRP as designated by ICARDA included Iran, Turkey, Pakistan, Afghanistan, and the Atlas Mountains of North Africa, i.e. areas with an elevation ≥ 900 m. Although high elevation areas differ in many respects, agricultural conditions have similarities that made the HRP an acceptable entity. These similarities include: (i) long, cold winters with little or no vegetative growth, with ≥ 2 months of sub-zero temperatures, (ii) latitude of 25-42°, (iii) rugged topography, (iv) isolation and difficult access, (v) lack of improved technologies, and (vi) general neglect by national and international research and development organizations.

After the involvement of ICARDA in the CAC countries large areas with highlands were added to its mandate region. Consequently, the sub-region was linked to the HRP until 1998, when an ICARDA/CGIAR office was established in Tashkent and the CAC became a full-fledged regional programme. Despite the higher latitude, environmental conditions in the highlands of the CAC region resemble those of the former HRP; yet they are now part of another regional programme. In some other countries like Ethiopia and Yemen, agricultural lands are located at high elevations, but the agro-ecological conditions resemble more those of the lowlands in CWANA. Finally, there are certain continental areas, that have an altitude lower than 900 m, yet they have long and harsh winters, such as in Turkey and Kazakhstan. Thus, in the highlands a wide variety of agricultural production systems are found, but they are all characterized by the dominance of resource poor farmers, who are in urgent need of assistance.

A number of individual projects are currently implemented in the highland regions, however there is currently no Regional Coordinator for the programme, and this limits the development of a more comprehensive set of activities.

The Panel suggests that ICARDA reconsiders the usefulness of maintaining the current Highlands Regional Programme and studies the possibilities to combine it for example with the West Asia Regional Programme.

The projects implemented by ICARDA in the highlands in CWANA are mostly addressing specific problems in individual countries, but they are not part of an overall highlands research initiative. Given the poor state of development in most highland regions and the high degree of poverty, considering the special interest of certain donors in supporting research activities for mountain areas, and noting also the research activities carried out by ICARDA over time in highland areas, **the Panel recommends that ICARDA establishes a highlands research network for the CWANA region to develop and implement a pragmatic agricultural research programme for the highland agro-ecologies.**

7.4 Outsourcing of research

Outsourcing concerns the contracting out of a well defined research activity to one or more institutes, usually within the region, that have the necessary capacity. Outsourcing is done because the work is an essential part of the research agenda, but there is inadequate expertise or essential infrastructure for it at the Centre.

The research landscape is changing, including the relative strength of NARS, type of research to be undertaken etc. ICARDA needs to respond adequately to these shifts. There are a number of examples of outsourcing to NARS, these include: Tunisia, disease resistance screening, Morocco, screening for Hessian fly resistance; Egypt, biotechnology research by the Agricultural Genetic Engineering Institute, the development of a faba bean expert system by the Central Laboratory for Expert Systems, and the development of an internet based weather station network for collecting real-time weather data for use in the Arabian Peninsula, by the Central Laboratory for Agricultural Climate. In each case, a specific contract spelling out the various conditions and obligations of both parties is prepared.

In general it seems that the contractual arrangements have operated in a satisfactory manner. From the feedback received from some of the institutes it is evident that outsourcing offers excellent opportunities to maintain productive links with NARS that have undergone a significant evolution of their research capacity. Consequently, there are ample opportunities for outsourcing certain research activities to advanced NARS in CWANA. For example, countries in North Africa, as well as Iran, emphasized strongly that they have the capacity to undertake a variety of regional research and training activities, and they wish to see this capacity more effectively used by ICARDA. However, in recent years there has been no significant increase in the number of outsourced activities, and the Centre may not have taken full advantage of the existing possibilities. There is no doubt that outsourcing is a popular principle within the CGIAR System, but so far little effort has been made to carefully analyse the costs and benefits of it.

The Panel recommends that Management reviews the available information related to outsourcing to decide if ICARDA should spend more efforts on outsourcing. It is important to first analyse the current experiences in order to determine under which conditions outsourcing will be beneficial to the Centre. Such an analysis should also address the positive effects on the relationships with NARS.

The Panel suggests that on the basis of the conclusions reached the Board of Trustees might develop a policy for institutionalizing outsourcing.