

## EDITORIAL

**The Future of Agricultural Research**

C. Bonte-Friedheim

**Has Agricultural Research Failed?**

Public funds set aside annually for agricultural research have decreased worldwide, in industrialized countries as well as in most developing countries. The issues underlying these reductions are widely discussed. Serious concerns are voiced and many questions are raised. Is agricultural research really no longer necessary? Or has agricultural research failed? A closer look at the need for continuing agricultural research and the roles of the various actors reveals a highly complicated picture.

**Growing diversity and waning public support**

In industrialized countries, private-sector research has expanded significantly in recent decades, becoming a strong competitor to publicly funded research. Massproduced, research-based inputs are now readily available, and are being applied by farmers in plant and animal production. Products of biotechnology and other types of research find easy markets and promise high returns to investments. While inputs are the result of both public and private research, they are produced almost exclusively by private industry.

It is a new phenomena that investment in agricultural research is becoming more and more attractive to private industry and capital. In some countries, the interest and availability of such resources has led publicly funded research organizations to seek supplementary financing from nongovernmental sources, including industry. Copying private initiatives, the public sector is now undertaking contract research and embarking on different forms of collaboration. While some industries move into basic research, nongovernmental organizations (NGOs) are becoming involved in adaptive work in order to provide more relevant services to farmers.

Accompanying this rise in institutional diversity has been a fall in public opinion in many industrialized countries regarding agricultural research. Public opinion highlights and opposes the considerable costs of managing and financing the agricultural surpluses that have resulted from increases in land and labor productivity. Certainly, agricultural research is partly to blame for this negative opinion, not only because of its potential to spur surpluses but also for the lack of understanding by politicians and the general public of the links between research, production, and public policy.

**Research performance in developing countries**

Contrary to the industrialized world, in many developing countries production increases and productivity gains are hardly noticeable. They often even lag behind population growth. More people are hungry than ever before. With better distribution of income and food perhaps they could be fed adequately now, but what about future food requirements? Too little is known about the contributions of agricultural research in developing countries. Such research is often conducted under very difficult conditions and with weak linkages to producers and consumers. For manifold reasons, research performance has not met expectations in much of the Third World.

Location-specific agricultural research, especially food-crop research, has only a brief history. It has worked for very short periods on some of the major problems of developing countries, especially those in the tropics. Many basic production problems, such as soils and their continuing fertility and pests and diseases, are more complex in the tropics, mainly due to climatic conditions.

The transfer of research results among countries in the tropics has proved to be more difficult than was expected based on experiences in temperate zones. Agricultural production in the tropics is much more location specific due to more diverse natural conditions, different crops, and quite specific human preferences.

Agricultural research used to be labor intensive and capital extensive. This has changed in the last 50 years, accompanied by necessary increases in the quality and quantity of specialized researchers and equipment. Today the requirements of first-class agricultural research institutes cannot be afforded by many developing countries.

Experience has shown that a multidisciplinary research approach may have the best chance for success in addressing agricultural problems. However, a critical mass of expertise in the required number of technical fields is very often unavailable in developing countries.

Many developing-country research institutes suffer from persistent brain drain and brain waste. Either their best professionals are attracted to other national or international positions or they are underutilized due to a lack of research funds.

Agricultural research in many countries is isolated. Linkages with clients, stakeholders, and other internal as well as foreign research institutes and professionals are underdeveloped or nonexistent.

The agricultural research agenda is constantly being enlarged as agricultural production is diversified. Many new tasks and challenges are developing for research. To name just a few, new food crops and also new pests and diseases are being introduced; new export commodities are being tested; production is being extended into marginal areas; and natural resources are in danger of being severely degraded, polluted, or lost.

### **What Can Be Done?**

Agricultural research, in order to become effective and efficient and to have an impact, needs a sustainable institutional base. It requires sufficient long-term funding and depends on close linkages with stakeholders, clients, and partners. Concentration on priorities is needed, as well as national and international collaboration, and political support from an informed and educated producer and consumer society.

If in the early years of the next century the rural areas are to contribute to solutions rather than cause many of the problems confronting our shrinking globe, then agricultural research must be challenged with clearly defined tasks. At the same time it must be provided the necessary human and financial resources to fulfill its role. It is the rural areas that will feed the population; safeguard natural resources, especially drinking water; protect the environment and biodiversity; and provide energy and employment for a large share of the population.

If we are to find answers to the problems of the next generations, then agricultural research must start now. Policymakers and the leaders of industry and agriculture, NGOs, and, in many countries, the parties and electorate must be convinced that resources for agricultural development are not a one-time expenditure, but a sustained annual investment in our children's future.

Without massive investments, agricultural research is bound to fail in the face of expectations and in view of ever-increasing problems. However, productive agricultural research is imperative if adequate solutions are to be found to the problems facing this and the next generations. Agricultural research still has a clear role to fulfill. Without sufficient investment, the answer to the opening question will be not that agricultural research has failed but that we have failed. We will have failed in our vision of the future and our willingness to share global resources within and between generations.

C. Bonte-Friedheim  
Director General  
International Service for National Agricultural Research  
(ISNAR)  
P.O. Box 93375  
2509 AJ The Hague  
The Netherlands