

University - Industry cooperation for Technology Development in Agriculture and Food Processing

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1. Introduction

Sub-Saharan Africa's population is increasing at the rate of about 3.0%. It is expected that the region's population would double by 2025. This rate of increase in population is expected to put further severe strain on the already heavily-stretched food supply in the region. For Africa to have food security, the production of food must increase at annual rate exceeding 3.0%. The increase in population is also expected to lead to an increase in competition for available land as more people require land for housing, cash crop farming and other economic activities. Thus, food production can only increase through an increase in productivity and the use of marginal semi-arid land areas. This would require the use of fertilizers especially biofertilizers, new crop varieties which are more productive and disease resistant, new farming technologies and other inputs. All of this will only happen as a result of intensive applied research and extension work.

Universities and agricultural research institutes in the region have carried out considerable research work on various food crops. Some have yielded significant results that should be able to make a difference in the food supply situation. Furthermore the advent of biotechnology has opened up opportunities for the development of new crop varieties and biofertilisers which can considerably change the productivity. Some universities in the region are already involved in field trials of crop varieties, biofertilisers and other techniques.

Improvement in food processing and preservation technologies have also been pursued by researchers in the region. Technologies have been developed to extend the post-harvest life of crops such as cassava, sweet potatoes and plantains.

Unfortunately, the results of the research and those of the field trials are not available to those who could use them. Most of these results have been reported in journals where they have remained.

2. The UNESCO Programme

The issue of non-utilization of scientific research results is something which UNESCO has tried to address. In 1994 the organization launched the university-industry science partnership (UNISPAR) programme in order to facilitate the utilization of research results by the productive sectors of the economy. The UNISPAR programme is based on the philosophy that endogenous technology development can only occur if those who generate knowledge (i.e. universities and research institutes) and those who use the knowledge for the benefit of society (i.e. the industries, farmers, etc.) communicate regularly. Among the many reasons why scientific research results are not utilized are the low degree of awareness, by the potential users, of the existence of the results and the absence

of strong involvement of the user in defining the research agenda. UNESCO, through its UNISPAR programme, is undertaking a series of activities which facilitate the use of research results to develop technology particularly those for agriculture and food processing.

Since 1995, UNESCO has supported twenty one pilot projects which have used different methods for creating awareness and interest in various research results available in African institutions. Among them are regional conferences and individual projects for the dissemination and utilization of specific results. Although the projects covered all aspects of economic production and social service (health, industry, agriculture etc.), the emphasis was tilted considerably towards research on agricultural technologies.

3. UNISPAR-Project Activities

The transfer of research results to industries is usually facilitated by several project activities including the establishment of demonstration/pilot plants, the registration of patents, the development of markets (i.e. sensitization of the public through technology dissemination projects) and the implementation of demand-driven research projects. Since its inception, UNISPAR-Africa has supported projects in all these areas. Below are the descriptions of the objectives of the various activities.

Establishment of Pilot Plants

Demonstration or pilot plants can be used to show that the technology is technically feasible, facilitate the collection of technical and economic data for analysis and to provide data for entrepreneurs to develop business plans. The plant can also be used to make the prototype products for market research.

Registration of Patents

This is a useful strategy to enable researchers to bring their results into the public domain. The UNISPAR-Africa Programme gives financial support for registration of patents. Under the programme, grants are also provided to enable researchers to collect relevant data to fulfil regulations by local standards board.

Popularization of Technology

In order to create awareness of the technology, develop a market for the technology and provide training for potential users of the technology, the UNISPAR-Africa programme awards grants for implementation of activities involving the promotion of new technologies especially those for agriculture and rural areas. Grants would cover the cost of activities such as TV/radio

programmes, video recordings of the technology, national seminars and field demonstration.

Demand-Driven Research

Through this activity, grants are given to researchers for the execution of projects which are likely to produce results of commercial value. This approach to the funding of research enables local industries to play a part in the determination of the research results.

4. Other UNISPAR Activities

The individual project activities mentioned above are intended to assess the effectiveness of various strategies and modes for University-Industry Cooperation. In addition, the UNISPAR programme also organises meetings at the national and regional levels. The national level meetings are intended to bring together all local stakeholders in the development and transfer of technology with a view of formulating national programmes for university industry cooperation.