Sustainable Agricultural Development and the Challenges Facing Agricultural Education in Afghanistan

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Agricultural development in Afghanistan is challenging, with farmers often facing limited access to appropriate technologies as well as weak institutional support. Problems with the organization and management of research, education, and extension systems are significant obstacles confronting development of agriculture. Agriculture in many parts of the country thus remains starkly underdeveloped in the face of major constraints on the utilization of knowledge and innovation for development. While agriculture accounts for a large proportion of gross domestic product, numerous challenges constrain efforts to provide adequate food supplies. Policy makers and donors have thus devoted more attention to the agriculture sector, concluding that its development is essential for national economic regeneration.

Education and training are widely recognized in research as contributors to national economic growth. Agricultural education affects directly agricultural productivity and the performance of ancillary businesses and trade. Progress and advances in the knowledge arena, including knowledge dissemination, are thus among the important factors contributing to productivity growth and the attendant change in the quality of labor. Education and training are especially important for activities requiring adaptation to change.

The discipline of rural development recognizes the crucial links between agriculture, natural resources, human settlement, and biodiversity. Sustainable development clearly requires the cooperation and inputs of sectors other than agriculture, including infrastructure, education, health, and energy. To bring about significant change, reformers of agricultural education systems and institutions will need to fully appreciate the complexity of the environment in which the shift in focus from agriculture to rural development must take place.

Key words: Sustainable, Agriculture, Productivity, Rural Development, Afghanistan

Introduction

A large proportion of the world’s poor live in rural areas. Most are engaged in farming. Agricultural development in these areas is challenging, with farmers often facing limited access to appropriate technologies as well as weak institutional support. In Afghanistan, efforts to develop agriculture confront additional obstacles, including problems with the organization and management of research, education, and extension systems. Agriculture in many parts of Afghanistan thus remains starkly underdeveloped in the face of major constraints on utilization of knowledge and innovation for development.

Despite the obstacles and constraints, however, organizational, technological, institutional, and policy innovations are transforming agriculture and
leading to growth and development in some areas of Afghanistan. Additionally, policy makers and donors are aware of the critical role that agriculture can play in national development. More attention is being devoted to the agriculture sector in recognition of agriculture as the backbone of economic growth in the country. Increases in gross domestic product as a result of agriculture sector growth benefits low-income people more than such increases as a result of the growth in other sectors of the economy (Raouf, 2010).

Advances in the fields of biology and information technology contribute to reductions in the effects of disease and drought on production systems and to increases in the competitiveness of market oriented smallholders.

The environment for institutional and organizational innovation is changing rapidly. The new world of agriculture that is emerging encourages a wider range of participants in innovation—including farmer’s organizations, the private sector, and civil society. Links between technological progress; organizational, institutional, and policy innovations; and markets to effectively engage this expanded range of innovators are important for future growth in productivity. The availability of appropriate knowledge will complement such links and enable agriculture producers to move up the value chain in international agriculture export markets, contributing to further innovation that increases agricultural productivity and alleviates poverty. The application of appropriate knowledge and innovation as well as sound policy will contribute to development. Smallholders and other rural residents will ultimately benefit from policy and research that effectively address the agricultural systems in which they are active, as well as from the application of broadly appropriate knowledge and innovation for development.

Johnson and Ruttan (1994) noted that most of the world’s poor are engaged in farming, implying that the focus of development policy should be increasing farmer income. Taking a global view and considering the limits on the availability of farmland, it can be seen that increasing agricultural productivity is essential for poverty alleviation as well as for development of sectors other than agriculture.

Worldwide, agricultural productivity is improving, and poverty alleviation and the growth of non-farm sectors may be seen as complementary developments. In Afghanistan, however, the agriculture sector is not performing well, with productivity declining and the level of poverty still high. Public resources thus need to focus on agricultural development in an appropriate policy framework in order to increase farmer income and determine whether such policy effectively supports movement toward economic diversity.

Agricultural Education

Agricultural education affects directly agricultural productivity and the performance of ancillary businesses and trade (Mason and Osborne, 2008). It can support a knowledge-driven economic growth strategy and poverty alleviation. Farmers in Afghanistan, however, have access to only primary education, which limits their productivity. Afghan farmers as well as farmers in other low-income countries thus require extension and advisory services that provide information about appropriate approaches—such as field days—and farmer field schools to complement formal agricultural schools. Farmers and others distant from schools and isolated by poor transport infrastructure should be able to take advantage of information and communications technologies and distance learning methodologies when electricity and facilities are available. Farmers with such access can increase their knowledge, skills, and productivity.

The quality of agricultural education is critical because it is a major determinant of the level of knowledge and expertise in most aspects of agriculture and associated industries among graduates who become farmers, scientists, professionals, teachers, and leaders. Education can contribute to increases in farm productivity by providing skilled farm managers and laborers, and by enhancing farmers’ capability to adjust appropriately to disequilibria and successfully adopt innovations. Education is thought to be most important to agricultural performance when technology or the economic environment is changing rapidly (Shultz, 1964).

Since farming methods in Afghanistan are largely traditional, there may appear to be little economic justification for farm households to invest in education. However, new varieties of higher-yield crops are available in some areas, and in many
areas there are farmers who have adopted some modern inputs—primarily chemical fertilizers. As technological innovations are disseminated more widely in Afghanistan, the importance of agricultural education will increase. What is the likely impact of increased levels of agricultural education on farmers and the farming business?

Education and training are widely reported and acknowledged by researchers as contributing to national economic growth. In countries where incomes and education levels are high, human capital as a result of formal education and informal on-the-job training is a major factor in determining differences in productivity and income between countries (Razzak and Timmins 2010). This implies that advances in the knowledge arena, including knowledge dissemination, are among the most important factors contributing to productivity growth and the attendant change in the quality of labor.

Education and training is especially important for activities requiring adaptation to change (Chapman and Stemp, 1992). Because the need for innovation in agriculture is widely recognized, and innovation requires the capacity to adapt in order to change agricultural education and training is a necessity for growth in agricultural productivity in Afghanistan and worldwide. Afghanistan is suffering from malnutrition and inadequate food intake. Education can help increase agricultural productivity and reduce malnutrition through its impact on the behavior and decision making, and hence outcomes, of farmers—improvements in farmers' capacity to process information can enhance input and allocation decisions, for example.

Huffman (1974) found that education can improve the outcome of decisions. This implies that correct, timely decisions influence productivity and improve responsiveness and adaptability, altering values and attitudes away from the conventional. Changes in attitudes pave the way for development. Changes in the values and attitudes of Afghan farmers could thus increase farm profitability and push farmers toward development or at least toward operations adequate for subsistence. Agricultural education in Afghanistan has thus reached a point where demands for change from outside the educational institutions are numerous and powerful. The need for decisions that respond appropriately to demands for change is critical.

This conference (AG-ESD 2010) provides an opportunity to examine agricultural education in Afghanistan with the aim of better understanding the problems, imperatives, solutions, and challenges.

By international standards, institutions for agricultural education in Afghanistan are of recent origin, except those in Kabul. Much has been achieved in a short time by these institutions, but increased enrollment and declining budgets are threatening their influence on the higher education of Afghan youth. They currently stand at a pivotal point of crisis in their development. Their mandates at independence and subsequent policy for higher education require reassessment in light of changes in the universities, Afghanistan, and the world. Such reassessment needs to address several issues:

1. Enrollments that often exceed capacity,
2. Expenditure patterns for higher education that is unsustainable,
3. Education quality that is in decline,
4. Relevance to national needs that is diminishing,
5. Teaching and research staff in exodus to areas of higher pay and better conditions, and
6. Inadequate links with the employers of graduates.

Worldwide, agriculture has exhibited amazing success. Despite serious droughts in parts of Africa, Australia, and the Americas; floods and storms; the ravages of pests; and an exploding population, the production of food has never been better. Success has been assured by scientists, teachers, and extension workers who discover, transmit, and disseminate vital findings to the farming community. Nonetheless, the pressure on universities and other education and training institutions to adjust to new changes and realities is unending.

As with so many aspects of development, agricultural education in Afghanistan (and elsewhere) faces rapid and often perplexing changes in the environment in which it operates. These are creating a variety of challenges and dilemmas, as well as opportunities and possibilities.

Problems and constraints

Some of primary problems and constraints con-
Fronting agricultural education in Afghanistan alongside of security as main source of problems are as follows:

1. Agricultural universities' isolation from other parts of the university system;
2. The weak links between agricultural universities and other parts of the agricultural education system, vocational schools, and farmer training networks;
3. The inbreeding of teaching and research staff—who are frequently graduates of the same university or college—which impedes the entry of new ideas from the wider world of academia and research;
4. Inadequate availability of practical skills;
5. Decreased funding as urbanization gathers strength;
6. Failure to attract the best quality students from secondary schools;
7. Lack of communication between agricultural universities, and employers and the market; and
8. High unemployment of university graduates, often due to the curriculum's lack of relevance.

Taken together, these problems present a formidable obstacle to effective education. Further, if the agricultural education system does not produce employable graduates, it risks becoming irrelevant as an educational institution. The effect of high levels of unemployment among graduates—especially those from agricultural universities—may already be seen in declining enrollment and the lower quality of students and trainees at entry. Measures to reduce unemployment among graduates should not only include strengthened alliances with future employers, but also stronger alliances with other educational institutions. It is not uncommon to see private sector jobs in agriculture and agribusiness filled not by agricultural education graduates, but by graduates of other disciplines with better skills in the social aspects of rural development. The agricultural research system is a good example of this change. Scientists working in agricultural research now come from a wide range of disciplines, rather than from agricultural education as was traditional in the past.

It is common knowledge that, in the private sector, failure to recognize market needs is likely to result in loss of customers and profits, and indeed, business closure. Circumstances are different in the public sector. “Public sector institutions are not subject to the kind of market forces that govern the life of a firm”. This fact is particularly true of agricultural universities, most of which are public institutions.

Food security remains a critical issue in Afghanistan. Food production will thus continue to be a major focus of universities and other agricultural education institutions for some time to come despite the shift in focus from agriculture production to rural development. The delivery of quality agricultural education and training, as we have seen, remains a major challenge in view of higher student intake, decreasing levels of funding, and the loss of key teaching and research staff with vital experience.

Additionally, active awareness is required of other factors that have a significant impact on agricultural education and present further challenges, including the powerful forces of urbanization and globalization, and the rapid advances in biotechnology and information technology.

**Rural Development**

One of the challenges to agricultural education in Afghanistan is the need to broaden its scope to incorporate education and training in rural development. Clearly the traditional curriculum concentrating on agriculture production cannot produce professionals with the skills needed to deal with the wider problems of rural development.

The threat of food shortages has eased in many parts of the world as a result of the green revolution and the introduction of high input-high output farming with its high yields. The focus of development has turned from agriculture development to rural development in recognition that conventional farming can produce undesirable side effects, such as erosion, water pollution, and—with irrigation—salinization.

The shift from agricultural development to rural development entails explicit recognition of the links between agriculture, natural resources, human settlement, and biodiversity. Sustainable development clearly requires the cooperation and inputs of sectors other than agriculture, including infrastructure, education, health, and energy. It is now
evident, for example, that sustainable development of most rural areas depends on employment in more sectors than just agriculture. In order to bring about significant change, reformers of agricultural education systems and institutions will need to fully appreciate the complexity of the environment in which the shift in focus from agriculture development to rural development is taking place.

Conclusions

Agricultural education and rural development have to be the focus of Afghan government. Because, a large proportion of Afghan society lives in rural areas and is engaged in agriculture as its main source of income, the transmission of appropriate knowledge to farmers through local institutions for agricultural education is vital.

Agricultural education has a direct effect on agricultural productivity and the performance of ancillary businesses and trade. Education and training are widely reported and acknowledged as contributors to national economic growth as well as to rural development and improvement in the quality of rural life. The current economical and food situation of Afghanistan by considering this country as an agricultural country seems to have captured the world’s attention, especially when it comes to production and food supply of agriculture sector of this country to its population. Despite the fact that the most of the population of this country is busy with agricultural occupations, still this country is suffering from the shortening of the food. This low productivity is getting source from lack of professional knowledge beside of other factors. Thus, Afghan Agricultural sector required for more skilled human resource, improving agricultural education and extension services could help this agricultural country to feed its habitants. In the long run by improving the productivity of agriculture in Afghanistan the income of the majority of afghan people which are living in rural areas will improve and will prevent from their migration to cities and neighboring countries as well the social unrest which suffers Afghans.

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