

RURAL DEVELOPMENT

Zhang Ming, *Institute of Geography, Chinese Academy of Sciences, Beijing, P. R. China*

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1. Introduction

With the rapid growth of the world's economy, people have begun to pay more and more attention to rural development. In a sense, rural growth is widely shared, with private and competitive agriculture and agribusiness as the main engine of growth. On a smaller scale, family farms and non-farm enterprises provide abundant remunerative employment opportunities to people. Moreover, people living in rural areas manage the soils, water, forests, grasslands, and fisheries in a sustainable manner, and are closely linked to well-functioning markets for products, inputs, and finance. This is one of the reasons rural development now plays such an important role in world economic growth.

Rural communities have access to medical care, clean water and sanitation, educational opportunities, and sufficient nutritious foods. Essential legal frameworks, public investment, productive and social services are provided and financed in a decentralized and participatory manner. Therefore, in general, rural development is regarded as one of the main anthropogenic causes of global environmental change.

To go from vision to action, some key directions to revitalize rural development should be taken into account:

- A broad focus, moving away from narrow sector approaches of the past, will be essential for promoting rural growth. Agriculture, forestry and livestock production should not be viewed separately, but rather in the context of supporting sustainable production system development. Projects on irrigation and drainage for example, will in the future need to look more at water resource allocation and comprehensive water resources management.
- Tackling long-ignored issues including politically charged ones such as land reform, and morally inadequate commitment to food and nutrition consumption policy. Gender will be an important factor in many of these issues. For many partner countries, land reform and better land policies would provide the incentives for the investment and growth needed to raise food output and rural incomes. With appropriate policies, all citizens could benefit.

Looking at old issues in new ways. Promising approaches to be piloted and monitored include:

- Revitalizing rural development at local and community levels

- Involving stakeholders in the development and execution of projects through all stages
- Delivering rural financial services to the poor using new approaches
- Involving the private sector in delivering infrastructure and other services wherever possible
- Promoting sustainable resource use through community-based management.

At the international level, a set of complementary rural actions should be defined:

- Further worldwide liberalization of agricultural trade—a necessary condition for ensuring that countries can rely on international markets—rather than self-sufficiency policies for their food security
- Collaboration with other international, national and private institutions to help low income food-deficit countries cope with the recent sharp rise in world cereal prices
- Coordination with others to discourage major exporters and importers from adopting inappropriate policies, which could worsen the situation
- Enhanced Non-Lending Services

Macroeconomic and sector policies are stable. The foreign exchange, trade, and taxation regimes do not discriminate against agriculture, but are very similar for the rural and urban sectors.

The growth of private agriculture should be encouraged by minimizing distortions among input and output markets and by market development for agriculture and agro-industrial products, both at home and abroad.

Public investment and expenditure programs for economic and social infrastructure, health, nutrition and education should not discriminate against rural populations or the rural poor.

Large farms and large agro-industrial firms should not receive special privileges and are not able to reduce competition in output, input, land or credit markets.

The agrarian structure should be dominated by efficient and technologically sophisticated family-operators who rely primarily on their own family's labor. The rights and needs of women farmers and wage-laborers should be explicitly recognized.

Access to and security of land and water rights should be actively promoted. Restricting land rentals hurts the poor. Where land distribution is highly unequal, land reform is needed. Decentralized, participatory, and market-assisted approaches to land reform can achieve much faster results than expropriation.

Private and public sectors complement each other in generating and disseminating

knowledge, and technologies. Public sector financing is particularly important for areas of limited interest to the private sector, such as strategic research, extensions for small landholders, and diffusion of sustainable production systems and techniques.

2. Rural Poverty

2.1 State of Rural Poverty

Although the world economy has experienced great improvement, poverty and hunger still remain pervasive. According to a report by FAO/WHO in 1992, there are over 1.3 billion people who are compelled to live on less than one dollar a day. More than 800 million of them are hungry. Many more are at risk from micronutrient deficiencies (vitamin A, iodine, and iron). The global population of underweight children below five years of age is expected to grow from 193 million today to 200 million by 2020, with most of the deterioration in Africa.

Despite urbanization, in most parts of the world poverty is more prevalent in rural areas than in cities. For example, in Indonesia 91% of the poor live in the countryside. In India the proportion is 79%, in the Philippines 67%, and in Peru 52%.

Approximately 70% of the total population in South Asia, Africa, East Asia and the Pacific live in rural areas, with about 50% in the Middle East and North Africa, 30% in Europe, Central Asia, Latin America and the Caribbean. Among them, poverty is pervasive and persistent. Access to basic human needs—education, potable water, health care, and sanitation—are far less available in rural areas. The problems of malnutrition, low life expectancy, and high infant-mortality rates are more severe in rural areas.

Despite poverty, many farmers and their families want to remain in rural regions, but due to a lack of adequate income and services they are forced to leave, often ending up in urban slums. The deep and prevalent poverty in rural areas is thus a major contributor to poverty in the cities, as the rural poor flee to the urban peripheries.

Ensuring adequate growth of the world's food supplies is therefore not enough. It matters where agricultural production takes place and who receives the associated income. Only if an increasing share of agricultural growth takes place in countries with impoverished rural populations, can rural farm and non-farm incomes rise sufficiently to enable the rural poor to afford more and better food. And only if the many millions of men and women small landholders participate in agricultural growth will rural poverty be reduced and wages for unskilled labor rise in rural and urban areas. It is for this reason that many big scientific organizations call for concentrating development activities on the small landholder economy.

2.2. Food Needs in Developing Countries Could Nearly Double

Everyone agrees that the world's population will exceed 8 billion people by 2025, an increase of 2.5 billion in the next 30 years. Much, but not all, of the increase will occur in developing country cities where urban populations will more than triple. Most agree that given moderate income growth, food needs in developing countries could nearly double. The challenge to world agriculture is enormous.

Future increases in food supplies must come primarily from rising biological yields, rather than from area expansion and large-scale irrigation expansion. Why? Because land and water are becoming increasingly scarce. Most new lands brought under cultivation are marginal and ecologically fragile and cannot make up for the land being removed from cultivation each year due to urbanization and land degradation. The sources of water that can be developed cost-effectively for large-scale irrigation are nearly exhausted, and irrigation water will increasingly need to be reallocated for municipal and industrial use. Therefore, yields on existing land will need to nearly double.

2.3. Growth of World Population

The challenge is worldwide, and both technological and political in nature. The technological challenge is enormous, requiring the development of new, highly productive and environmentally sustainable production systems. It is not more of the same. Private firms must be induced to develop and apply much of the new technology required. However, there are large areas of technology development which are of little interest to the private sector, including subsistence crops, or truly public goods, such as some aspects of natural resource management. It is here that public sector finance is critical—at international, national, and local levels. Yet, in many countries, research capacity and funding are stagnating or even declining.

The political challenge has received much less attention: all major regions of the world need to contribute to cost-effective and sustainable food supply growth, including Eastern and Central Europe, Africa, and Latin America. The challenge can be met only if international and domestic policies, institutional frameworks, and public expenditure patterns are conducive to cost-effective and sustainable agricultural development. Otherwise the required technologies will not be developed and adopted, the supportive infrastructure will not be built and maintained, land and water will not be allocated to their highest-valued uses, and farmers will not have incentives to maintain and improve the natural resources on which their livelihoods depend.

2.4. Environmental Degradation Must Be Reversed

Food insecurity and rural poverty are very much connected to environmental problems

of a global magnitude. With world population growing at over 1.6% per year, agricultural activities pose major threats of widespread soil degradation, resource depletion, and pollution.

This is no small issue. Agricultural activities, including pasturelands, dominate about 37% of the world's land area. Croplands occupy approximately 1.4 billion hectares, and extensive grazing, fallows, forestry, and hunting-and-gathering utilize another 7.4 billion hectares. Collectively, these constitute an enormous environmental influence—one that can either contribute to or frustrate prospects for sustainable protection of forests, watersheds, rangelands, and sites prone to erosion, desertification, salinization and other environmental problems.

As natural habitats diminish and as water scarcity in other sectors grows, observers (including agriculturists) are becoming increasingly troubled over environmental concerns such as:

Water. Agriculture's appropriation of water for irrigation has been a major source of the increase in food production in the past half-century. For example, more than 60% of the value of Asia's food production now comes from irrigated agriculture. Globally, about 70% of presently developed water supplies are used by the agricultural sector, while 23% is utilized by industry and the remainder by households. In developing countries, however, more than 80% of water resources is appropriated for irrigation.

In many parts of the world—particularly the Middle East and North Africa, but also in parts of Asia—growing competition for water from cities and industries is already forcing the agricultural sector to adopt new growth strategies and new water management practices. Booming urban populations are demanding more and more water for drinking and for water-borne waste treatment facilities. Corporations are utilizing an ever greater share of water resources as the level of industrialization rises.

To provide for the added population will require the same amount of water that would be needed to irrigate 25 million hectares—around 15% of the total irrigated land area in developing countries. While demand continues to rise, so too do the costs of developing new water supplies. By and large, the cheapest, most reliable and most environmentally resilient sources of water have already been developed; the costs of developing new water supplies are considerably higher than sources that are already tapped.

Pest management. Although developed countries increasingly employ selective pesticides that are effective at low application rates, many of the older, cheaper, less sophisticated, broad-spectrum formulations are in widespread use in developing countries. These materials include persistent organochlorine insecticides. The developing and formerly socialist countries applied approximately 70 000 to 80 000 tons of these compounds in 1995 (including public health and veterinary uses). The

older and more toxic organophosphate and carbamate insecticides and herbicides also have very significant sales in developing countries. Furthermore, such products are sold there with relatively little technical support and are employed with few safeguards, little caution, and barely any regard for the consequences beyond the farm boundary.

Soil Degradation. In much of the developing world, poor soil management is the real problem underlying food security. In sub-Saharan Africa the problem is particularly severe. Major causes of soil degradation are mismanagement, overgrazing and deforestation. The problem will grow worse unless significant changes are introduced into the way farming is practiced. But poor farmers do not have sufficient land, water or other factors of production to follow soil fertility-enhancing practices such as crop rotation and fallows. Instead they are forced to mine their lands, depriving themselves and future generations of this critical productive base.

Forests. Deforestation and the degradation of forest lands remains a critical issue for sustainable natural resource management. Indiscriminate felling of trees for fuel, timber and fodder, combined with increased grazing pressure on open-access land is increasing soil erosion, reducing water retention, destroying biodiversity, reducing carbon retention and wasting potential income from forest products.

2.5. Untapped Opportunities to Eliminate Rural Poverty

Of course there are many areas of research which offer promise of reducing rural poverty and raising agricultural productivity, while minimizing damage to the environment. Below are just a few broad areas that are not being adequately addressed at this time.

2.5.1. Improving Household Health and Nutrition by Working with Women

People who think of farming as a man's occupation may be surprised to learn that women account for more than half the labor required to produce the food consumed in the developing world and about three-fourths in Sub-Saharan Africa. African women perform about 90% of the work of preparing food for consumption and providing household water and fuel wood, 80% of the work of food storage and transport, 90% of the work of hoeing and weeding and 60% of the work of harvesting and marketing. While it is commonly believed that Asian agriculture relies more on male labor, women contribute between 10 and 50% of labor for various crops.

Women achieve this importance in tropical agriculture even though they often cannot own or inherit the land on which they work. Women often have difficulty obtaining improved seeds or fertilizer or technical information. Thus in many countries women small landholder farmers are the under-performers in agricultural production. However, studies have shown that, given equal access to resources and expertise, they often

achieve much higher yields than do men. Since women often use their additional resources to invest in family welfare, this has potentially greater immediate and long-term impact on poverty and hunger than increased incomes for men.

2.5.2. Tapping Unused Local Knowledge

Subsistence farmers living in hundreds of ecological zones have acquired invaluable knowledge of genetic stock, cultivating techniques, and natural resource management that can contribute to developing sustainable farming systems of the future, but little of this heritage of learning and insight is ever recorded.

Diversification of crops to minimize risk of loss, hand weeding—which minimizes tillage and helps improve soils—and use of natural predators and indigenous crop varieties for pest control are just a few of the traditional practices that are benefiting modern agricultural science. The key to further advances lies in building institutional bridges between farmers and research and extension services.

2.5.3. Giving Small Landowners Access to Services, Knowledge, and Technology

Because they are isolated, rural communities often do not receive technical information generated at the national and international levels. Connecting rural people to knowledge networks is key to developing sustainable farming systems. The information technology revolution provides opportunities to reach farmers much more cost-effectively than in the past. Education is especially valuable for blending indigenous knowledge with new technologies.

2.5.4. Better Management of Common-Property Resources

Common property resources such as water, pastures, rangelands, forests, and fisheries, are being overused and degraded in many countries because they are treated as open-access resources with few restrictions on who may use them. However, many communities are designing and implementing effective community-based systems for managing these resources.

2.5.5. Giving Rural People a Voice

Several important opportunities are missed in the quest for rural growth unless we listen to and learn from the poor. Only when partners have a say in determining how programs and projects can work for them can real development occur. A bottom-up approach in which communities are actively involved in designing, implementing, and monitoring projects may be slower and more difficult, but often works better and leads to more sustainable projects.

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Biographical Sketch

Zhang Ming is an assistant Professor with the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences, Beijing, China. He earned his PhD in Physical Geography, Institute of Geography, Chinese Academy of Sciences in July 1998. He obtained his B.S. and M.S. degrees in Regional Geography, Shaanxi Normal University, Xi'an City of China in 1992 and 1995 respectively.

During his research career, Dr. Zhang has contributed to a variety of projects, including the *Project Study on the Land-use & Land-Cover Changes in and Around Bohai Regions*, *A Study on the Eco-geographic Regional System of China and its Application in Global Change*, *Modeling Land-Use & Land-Cover Changes in Europe and Northern Asia* (in cooperation with the International Institute for Applied Systems Analysis, Austria, and Institute of Geography, CAS), and was responsible for the case study of the Yulin Prefecture. In June-August, 1997, as a Young Scientist of Summer Programme at the International Institute for Applied Systems Analysis in Austria, he worked on statistical analysis of the driving forces of Land-Use and Cover Changes (LUCC). In 2000, the Shanghai Scientific and Technical Publishing House published Dr. Zhang's scientific book *The Surface of Earth—Home of Human Beings*. In addition, he has published 15 papers on land use and land cover change, landscape ecology and land planning.