



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

e J A D E

electronic Journal of Agricultural and Development Economics

Agricultural Development Economics Division (ESA) FAO

available online at www.fao.org/es/esa/eJADE

Vol. 4, No. 1, 2007, pp. 47-65

Transformations in agriculture and their implications for rural development

Peter Hazell

Visiting Professor

Centre for Environmental Policy, Imperial College London, Wye Campus

e-mail: p.hazell@imperial.ac.uk

Abstract: *The paper reviews the implications for rural development of current transformations in agriculture. It first identifies some of the driving forces - in addition to the impact of rising incomes in some but not all developing countries - behind the transformation process: changing market chains, shifts in public policy, OECD agricultural policies and HIV/AIDS. It then discusses some strategic issues for assisting the rural sector and small farms in developing countries: increasing the productivity of food staples, diversification into higher value products, organizing small farmer for marketing, agricultural services, non-farm opportunities and migration and targeting the vulnerable. It emphasizes the need for integrated interventions if small farm development is to offer a viable pro-poor option for agricultural development.*

Key Words: *rural development, poverty reduction, agricultural transformation, small farm development.*

JEL: *O10, O13, O18, Q10, Q18.*

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever of the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Introduction

Historically, agriculture has played a key role in kick-starting economic growth and reducing poverty and hunger in many developing countries. Moreover, most of the countries that have failed to launch an agricultural revolution remain trapped in poverty, hunger, and economic stagnation. But the conventional conclusion that developing countries should continue to invest in their agricultural development, and particularly in food staples and small farms, is being challenged. In an era of globalization, trade liberalization, changing market structures and demand, and ample world food supplies, a new breed of agricultural skeptics argue that poor countries should now downplay the importance of food staples and small farms and focus instead on commercial farms, higher-value agriculture, and rural income diversification through migration and nonagricultural development (e.g. Maxwell et al., 2001; Ellis and Harris, 2004). Some even advocate that poor countries take advantage of the global glut in food staples to leap frog agricultural development altogether. Yet others note that rapid growth in urban–rural linkages and rural income diversification are making agriculture largely irrelevant for the rural poor. These arguments have merit, but they can also trigger simplistic and generalized conclusions that overlook the diverse needs and opportunities facing developing countries today. Not only are there still many viable opportunities for small farms, but the kinds of state withdrawal from agriculture being promoted by some could lead to a massive and premature exodus of small farms that could overwhelm the capacity of many developing countries to cope.

Background

It is well established that agriculture's role changes with the economic transformation of a country, particularly as per capita incomes rise. This transformation has several important implications for agriculture and the rural economy:

- Agriculture's shares in national income and employment fall as countries grow richer and diversify, even though agricultural output and employment typically keep growing until quite late in the development process. This means that agriculture becomes progressively less important for national economic growth.

- As per capita incomes rise, labor becomes more expensive relative to land and capital and small farms begin to get squeezed out by larger and more capitalized farms. This also leads to an exodus of agricultural workers.
- As per capita incomes rise, consumers diversify their diets and demand higher value livestock products, fruits and vegetables and relatively less food staples. They also demand higher quality products, and more processed and pre-cooked foods. Urbanization accentuates these patterns, and also places a high premium on market access, especially for perishable products.

As a result of these changes, farms become larger, more commercial and more specialized in higher value products. Many small farms disappear, while others adapt either by specializing in high value niches in which they can compete, or by becoming part time farmers. Fortunately, opportunities for small farms and agricultural workers to leave agriculture also increase with economic growth.

These changes are a normal part of the economic transformation and are not new. However, part of the global change we are seeing today arises because this transformation is happening on an unprecedented scale. Today there are over 3 billion people, mostly in Asia, living in developing countries whose national incomes are growing at 5-10% per year. This is leading to unprecedented pressure for tens of millions of small farms to adapt and/or find exit strategies. Europe is still struggling to solve the remnants of its own small farm problem after several decades of highly expensive interventions, yet the scale of Europe's total problem was tiny compared to what countries like China and India face today.

But this is only part of the change that we are seeing today. New driving forces, particularly globalization, seismic shifts in development policy paradigms, and HIV/AIDS, are fundamentally changing the economic landscape within which the agricultural transformation must take place in developing countries. We are now seeing a situation in which small farms in all kinds of countries are threatened, even in countries where the normal economic transformation is not very advanced. Even larger and more commercialized farms must become nimble and well informed

entrepreneurs if they are to remain competitive in today's changing and fickle markets. Today we face the prospect of a mass exodus of workers from agriculture in all kinds of countries.

Driving forces

The impact of rising incomes on agriculture is only an issue in countries that are actually growing in per capita terms. While many developing countries in Asia and Latin America fall into this category many other countries do not, including most African countries. So the normal development pressure for agriculture to adapt to higher value farming and larger farms is not universally shared. On the other hand, other important drivers of change are impacting on nearly all countries, regardless of their stage of development or their economic performance. These drivers are discussed below.

Changing market chains. Marketing chains are changing in all types of countries with trade liberalization and globalization. Developing country farmers are increasingly being asked to compete in export and domestic markets that are much more demanding in terms of quality and food safety, more concentrated and integrated, and much more open to international competition. Supermarkets, for example, are playing a more dominant role in controlling access to retail markets (Reardon et al., 2003) and direct links to exporters or importers are often essential for accessing high value export markets. As farmers struggle to diversify into higher value products, they must increasingly meet the requirements of these demanding markets, both at home and overseas. These changes offer new opportunities to farmers who can successfully access and compete in these transformed markets, but they are also a serious threat to those who cannot. Unfortunately, most small farms are likely to be excluded if markets are left to themselves.

Shifts in public policy. Fundamental shifts in the internationally accepted development paradigm have transformed public sector policies in ways that have left many farmers without adequate access to markets and key inputs and services, including farm credit. As part of the structural adjustment programs, state agencies have been removed from providing many direct marketing and service functions to farmers, leaving a vacuum that the private sector has yet to fill in many countries (Kherallah et al., 2002). The removal of subsidies has also made some key inputs (e.g. fertilizer) prohibitively expensive for many farms, and the removal of price stabilization programs has exposed farmers to much more

downside risk in farm gate prices. These problems are especially difficult for small farms living in more remote regions with poor infrastructure and market access. While this change in paradigm may well work for many high value markets, there are typically too many failures in food staples markets during the early stages of economic development to ensure efficient outcomes (Dorward et al, 1998).

OECD agricultural policies. Despite the enthusiastic support by rich countries for policy reforms and market liberalization in developing countries, their own protectionist agricultural policies are reaching new heights in creating unfair competition for farmers in developing countries. Developing country farmers not only have limited access to rich country agricultural markets, but they also face unfair competition in their own domestic markets from subsidized imports. The size of these distortions is immense. In 2000, the producer subsidy equivalent of these policies in the OECD countries was US\$330 billion (World Bank, 2002); equal to Africa's entire annual GDP that year. These policies are particularly damaging to small farmers in poor countries because they limit their opportunities to produce more of the products in which they have comparative advantage. This is not just a matter of developing country farmers being squeezed out of export markets for tropical crops like cotton, sugar and tobacco, but they are even pressured in their own domestic and regional markets for staple foods like cereals and livestock products.

HIV/AIDS is taking a severe and increasing toll among small farms in many developing countries, reducing the number of able adult workers and leaving many children as orphans with limited knowledge about how to farm. Many small farms will eventually disappear as a result of HIV/AIDS, but only after a difficult transition period during which local communities must find ways to cope with the human tragedies involved.

These driving forces are particularly challenging for Africa and South Asia, where small farms account for over 80% of total farms and 40% or more of total agricultural output. Left to market forces alone, the major beneficiaries of the new high value and liberalized agriculture will mostly be the larger and commercially oriented farms, and farms that are well connected to roads and markets. Many small farmers and agricultural workers will need to leave the industry unless there

is a shift back towards more supportive policies. However, it is not at all clear where they are all supposed to go. Some will find employment on successful farms and some in agriculture related industries. But most will need to look outside agriculture, either for part time or full time jobs. Opportunities for exiting agriculture are much more promising in countries that are growing fast but are much more limited in stagnant economies. The scale of the problem is potentially immense. The number of small farms is still increasing in most developing countries, including in fast growing countries like India and China. There is a potential crisis as powerful demographic forces collide with powerful market forces. We do not seem to have an adequate handle on the scale of this problem, and do not know how many people must exit agriculture and when or where they will all go. We do not know what will happen to poverty levels and urban ghettos as the exodus occurs.

Implications for rural development strategy

If this crisis is to be averted there is need for a concerted effort by governments, NGOs and the private sector to create a more equitable and enabling economic environment for rural and small farm development. But the right interventions must be context specific. There are huge differences, for example, between what is needed today in Africa and Asia. Asia's dynamic and growing national economies offer small farmers many more opportunities to diversify into high value products and nonfarm sources of income, and to exit farming into higher paying occupations. But in Africa's poorer and slower growing economies, such opportunities are much more limited and many smallholders are trapped in subsistence modes of farming supplemented with low paying off farm activities. It is also crucial to craft different strategies for small farms with viable commercial futures compared to those who do not, with greater emphasis on safety nets and exit strategies for the latter. Clearly a one size fits all" approach will not work across all situations.

I turn now to some of the more important strategic issues for assisting the rural sector and small farms in developing countries in the contemporary situation.

Increasing productivity of food staples

While much of the attention today is on high value market chains and the challenges of linking farmers to those chains, we should not overlook the importance of food staples markets and their

own particular support needs. Given a global glut of food staples and historically low prices, and low growth rates in demand for food staples in many successfully developing countries, it is tempting to conclude that countries can neglect their food staples sector and rely more on food imports while focusing their efforts on producing higher value products. This would also be consistent with the notion that few small farmers are going to get rich growing food staples at current prices.

In reality, market opportunities are more nuanced than this, and food staples (cereals, roots and tubers and traditional livestock products) actually offer more important growth opportunities for small farmers in many low-income countries. For example, in Africa the consumption of food staples still accounts for about 70% of agricultural output (Table 1) and regional demand is projected to double by 2020 (Rosegrant et al., 2005). This will add another \$50 billion per year to demand in 1996-2000 prices, a growth of approximately 4% per year. Moreover, with increasing commercialization and urbanization, much of this additional demand will translate into market transactions and not just additional on-farm consumption. There are no other agricultural markets that offer this kind of growth potential in Africa, and unlike many higher value products, food staples also have relatively low credence attributes making them much easier products for small farmers to sell in today's markets.

Table 1. Size of Africa's Agricultural Trade And Markets

Market	Value (\$ billion)
Traditional exports to non-Sub-Saharan Africa	8.6
Nontraditional exports to non-Sub-Saharan Africa	6.0
Other exports to non-Sub-Saharan Africa	1.9
Intra-Sub-Saharan Africa trade	1.9
Domestic markets for food staples	50.0

Note: All figures are averages for 1996–2000, except the data for domestic which are 1997 figures.
Source: Diao and Hazell (2004)

Simulations with economy-wide models for several African countries also show that food staples offer more realistic pathways for achieving growth and poverty reduction within the time frame of the MDGs (Diao et al., 2006). This strategy is not only more feasible for achieving higher agricultural growth rates, but also leads to faster rates of poverty reduction than a strategy built primarily around increasing production of high value products.

It is not only important to recognize that food staples still have a key role to play in many developing countries, but also to recognize that the markets for food staples are inherently different from markets for many high value products and need greater public attention. Many producer markets for high value products have been successfully privatized and this is in part because of their higher profit margins and greater integration into export and retail markets. However, hardly any credible evidence exists to suggest that the private sector can successfully take over the producer market chains for staple foods during the early stages of agricultural development. As farmers struggle with low productivity and high subsistence needs, low input use, low incomes, poor infrastructure, high risks, and the like, the amount of profit to be made in market chains for food staples remains low and unattractive for much private investment. There is also a growing body of studies showing that important institutional and market failures are to be expected at that level of development (Dorward, et al. 1998).

The Asia experience also supports this argument. There the public sector played a key role in food staple market chains during the early years of the Green Revolution. This role went far beyond the kind of facilitating role envisaged today and actually provided most key services itself, including research and development, extension, improved seeds, fertilizer, credit, storage, and marketing. Moreover, governments intervened to stabilize prices for producers and consumers alike, and provided subsidies for many key inputs to encourage their uptake.

Recent research on India shows these interventions played a key role in launching the Green Revolution (Dorward et al. 2004, chapter 3). They also helped ensure that small farmers were able to participate, and that contributed greatly to the levels of poverty reduction achieved. The IFPRI calculations show that most of these policies and interventions had favorable benefit-cost ratios in the early years, but the ratios worsened over time once the interventions had served their primary purposes. Unfortunately, once institutionalized, removing the interventions has proved very difficult, and as input use increased the costs to the governments soared. Today, for example, India spends about \$10 billion per year on agriculturally related subsidies that are basically unproductive.

The international development community seems sufficiently concerned with Asia's post-Green Revolution problems that it is asking Africa to launch its own agricultural revolution without these kinds of public interventions. Africa is being asked to rely almost exclusively on the private sector and producer organizations, even though there are no successful examples of this approach working for food staples markets in the early stages of economic development. The international development community may well be asking for the impossible.

This is not to advocate a return to costly and inefficient parastatals or to hefty and poorly targeted subsidies. Nor is it an argument against a strong role for the private sector where this can work, as in many high-value market chains or even in food staples markets in countries that have progressed to higher levels of development. But what is really needed is a much better understanding of those aspects of public intervention that really worked in Asia and why (e.g., Dorward et al., 1998; Dorward et al. 2004). Then we can draw the right lessons for developing

new institutional innovations to bring those essential ingredients to Africa. Even most Asian countries still remain cautious about moving too rapidly towards fully privatized markets for food staples.

Diversification into higher value products

Small farms with a commercial orientation can benefit enormously from diversification into higher value foods (fruits, vegetables, oils, fish, livestock products, etc.) and processed and pre-cooked foods. Demands for these types of food are growing rapidly with rising incomes and urbanization in many successfully growing countries, offering robust domestic markets. In India, for example, nontraditional high value agriculture now accounts for more than half the total value of agricultural output and is growing at double digit rates, mostly for the domestic market. Trade liberalization is also opening new export opportunities for some of these commodities, providing new opportunities even in countries that have weak domestic markets. In Africa, countries such as South Africa, Kenya, Ghana and Uganda have been successful in increasing their exports of flowers, fruits and vegetables, and for Africa as a whole high value exports now amount to nearly \$6 billion per year (Table 1).

A challenge for this “new” high value agriculture is to make it more pro-poor. Left to market forces alone, the major beneficiaries of the new high value agriculture will mostly be the larger and commercially oriented farms, and farms that are well connected to roads and markets. Many small farms are likely to get left behind unless marketing arrangements can be developed that link them to the new market chains.

Organizing small farmers for marketing

Small farms have always been at a disadvantage in the market place. They only trade in small volumes, often have variable and sub-standard quality products to sell, lack market information and have few links with buyers in the marketing chain. These inefficiencies can all too easily offset the efficiency advantages of small farms as producers. The problem has been exacerbated by market liberalization and globalization. Not only has the state been removed from providing many direct marketing and service functions to small farms, leaving a vacuum that the private sector has yet to fill in many countries, but small farmers must now also compete in ever more

integrated and consumer driven markets where quality and price are everything. Small farmers will need to organize themselves to overcome these problems and to exploit the new opportunities that these market changes offer; otherwise they risk losing market access.

The private sector is emerging as a key player in linking larger-scale commercial farmers with markets (e.g. contract farming and supermarkets), but they have less interest and ability to deal with small-scale farmers on an individual basis. Voluntary producer organizations of various types will have important roles to play in filling this void and in linking small farmers to food processors, manufacturers, traders, supermarkets and other food outlets (Kindness and Gordon, 2002). Such organizations can help serve businesses by providing an efficient conduit to reach small-scale producers (e.g. by negotiating contract arrangements on behalf of a producer group), and help improve the quality and timeliness of small farmers' production and their access to agricultural research and extension, input supplies and agricultural credit.

Agricultural services

Small volumes and high transactions costs mean that small farmers are also disadvantaged in obtaining key inputs such as fertilizers, improved seeds, farm credit, veterinary services and extension advice. Although privatization policies in many countries have opened up new opportunities for the private sector and increased the efficiency of these input markets, they have inadvertently left many small farmers without adequate levels of support, particularly in Africa. Public investments to improve rural infrastructure and transport systems are an important part of the longer term solution to this problem. Formation of effective producer organizations for marketing purposes can also help give small farmers the buying power they need to obtain key inputs at competitive prices.

But as with markets for food staples, market failures often require direct state interventions in the early stages of development (Dorward, et al., 1998). Agricultural research and extension is a prime example. Although the private sector has become a more important provider of new technologies and information, its activities are biased towards the needs of larger-scale commercial farmers, high value commodities and technologies over which it can assert proprietary rights (e.g. hybrid crop varieties). Much of the agricultural R&D needed to help small

farmers increase the productivity of their food staples and to improve natural resource management must either be undertaken or funded by the public sector. Similarly, left to the private sector alone, there will be insufficient investment in the control of contagious animal and plant diseases.

In many developing countries, the financial sector reforms undertaken as part of structural adjustment programs have also left a vacuum in the supply of seasonal credit for small farms. Private banks now service the needs of large commercial farms, and micro finance institutions have mushroomed to cater for the financial needs of the poor. But the seasonal nature of farm credit needs and the highly covariate nature of most agricultural production and marketing risks, undermine the viability of borrowing groups for farm credit purposes. With the demise of publicly funded agricultural development banks, most small farmers now have to rely on self- or family financing, using livestock and other assets, as well as remittances from family members in non-farm employment. Although a return to the inefficient and highly subsidized agricultural development banks is not to be recommended, there is a clear need for some form of public intervention to help fill this void. New types of institutional innovations are badly needed.

Small farmers face a range of weather, disease, pest and market related risks that discourage them from investing more in major land improvements and from adopting more profitable technologies and crop and livestock activities. In order to cope with these risks, farmers and rural societies have developed a range of risk management measures (Walker and Jodha, 1986) but these measures offer only limited protection against catastrophic weather events like droughts or market collapses. Governments can help by providing safety net programs, and by facilitating the development of credit and insurance arrangements that provide cash in times of need. Such interventions need to be designed to assist farmers better manage risk and improve their productivity and incomes, but without creating incentives that lead to inappropriate land uses and environmental degradation. The experience with crop insurance has had mixed results. While it has sometimes helped farmers protect their incomes and food security and repay debt in drought years, the heavy subsidies that are invariably included has led to negative impacts on the way resources are managed (e.g. by encouraging farmers to grow crops in areas for which they are not suitable) (Hazell *et al.*, 1986; Hazell, 1992). Better alternatives for catastrophic risk management

are area-based rainfall insurance sold in small denominations so as to be affordable to small farmers and the development of more accurate and accessible drought forecasting information (Hazell, 1992; Skees *et al.*, 1999). This kind of insurance could be sold by the private sector without the need for heavy subsidies.

Commodity futures markets also offer new possibilities for providing forward price contracts to small farms. Rather than expecting small farmers to trade in these markets on their own account, market intermediaries, such as large traders, processors or exporters, might be induced to offer farmers forward price contracts, and then to hedge the assumed price risk on their own account in the futures market. For this to happen, government must establish mechanisms for ensuring that contracts are enforced and, where appropriate, establish domestic futures markets for key commodities.

Nonfarm opportunities and migration

Rural nonfarm income, such as nonfarm wage or self employment earnings, is already an important component of the livelihood strategies of rural people, sometimes accounting for more than half their income. Its importance is also growing with urbanization and greater spatial integration of markets (Ellis and Harris, 2004). But opportunities for farmers and agricultural workers to reduce their dependence on agriculture are constrained by the paucity of their human, financial and physical assets and the economic context of the region and country in which they live.

Lack of human and financial assets constrains many of the poor to low-productivity, low-growth market segments from which there are few pathways out of poverty, simply a means of bare survival. In this environment, the policy challenge becomes one of equipping poor households to move from these “refuge” nonfarm jobs to more remunerative ones. To do so, they require a variety of private assets such as education and start-up funds, and public assets such as roads and electricity and information about how to access dynamic market segments. Gender, caste and social status can restrict access by the poor to the most lucrative nonfarm activities in some settings. In the same way that child-rearing obligations may limit women’s mobility and force them into home-based, highly labor-intensive pursuits such as weaving, silk rearing and basketry,

caste and social restrictions may force specific poor household groups into traditionally reserved low-productivity rural nonfarm activities. Evidence from many areas indeed demonstrates a correlation between asset poverty, ethnic minorities and gender. Discrimination, weak asset base, and restrictions on geographic and occupational mobility all conspire to limit access by key disadvantaged social groups to more remunerative rural nonfarm activities.

But supply side interventions alone are rarely enough to promote nonfarm activity. This is because much nonfarm activity produces goods and services that are consumed almost entirely within the region in which they are produced (e.g. many retailing and personal services, highly perishable agricultural products, and the processing of local agricultural outputs). Expansion of these activities is constrained by growth in local demand, which in turn depends on growth in regional income and in the volume of goods produced that need to be processed and traded. Without local agricultural growth or access to new markets (e.g. from tourism, mining or government jobs), incomes and the demand for non-farm goods and services remain low, and rapid expansion of non-farm activity can quickly depress local prices and wages, making them more a refuge occupation than a productive alternative to agriculture. Opportunities to migrate to productive jobs in urban areas are also conditioned by the state of the national economy. In short, diversification is demand driven and follows rising per capita incomes; it is not a primary engine of growth in its own right.

The major engines of economic growth in low-income countries are tradables—agriculture, tradable services (like tourism and IT), manufacturing, and overseas migration (remittances)—which can be sold, usually abroad, into deep markets. These contrast with nontradables, such as services that cater largely to national markets whose size and capacity to grow depend critically on local income levels, which in turn depend on tradables output. When one or more tradable engines of growth are doing their job, the income increases they generate lead to rapid growth in demand for local nontradables, with important spillover opportunities for rural income diversification (see, for example, Haggblade, Hammer, and Hazell, 1991). In this context, rural-urban migration and rural income diversification are indicators of economic growth and structural transformation and a sign that workers are typically being “pulled” out of agriculture into higher-paying occupations. But when the major engines of growth are stalled, as in much of Africa,

migration and income diversification are more typically distress phenomena, with workers seeking to augment already low and declining per capita incomes by increasing production of low-productivity nontradables for sale into saturated local markets. In this case, migration is a “push” phenomenon that “depresses wage-rates; denudes rural areas of innovators; and hence, while it may briefly relieve extreme need, seldom cuts chronic poverty” (Lipton 2004, p. 16). National economic context is therefore very important in thinking about how to grow rural livelihoods.

Targeting the vulnerable

Agricultural growth, particularly if centered on small farms, can make deep inroads into poverty and hunger in many poor countries. But even if successful this would not be enough to eliminate poverty and vulnerability to production and market shocks. There is also need for effective safety net programs in times of crisis and for helping afflicted households and communities cope with chronic disease problems like HIV/AIDS. There have been real advances in recent years in targeting and delivering assistance more effectively, often by involving local communities in the design and implementation of targeted programs, which leads to programs that are primarily demand-driven and hence reflect local needs and constraints.

But safety net programs should not be seen as a substitute for policy support for agricultural development. While this is conceivably a viable strategy in countries with important sources of mineral or manufacturing income (e.g. Mexico) that can pay for extensive safety net programs, most developing countries cannot afford large welfare programs. The neglect of agricultural development in Africa in recent years is a case in point. Donor funds are now so heavily tied to relief and safety programs in some of Africa’s poorest countries (e.g. Ethiopia) that few resources are left to help these countries grow out of poverty. This is an unsustainable situation and one that can only worsen as rural populations grow and donors eventually seek to stabilize or cut back on their emergency assistance.

Need for integrated assistance

A profound challenge facing those who would intervene to support agriculture and small farms is how to integrate various needs and approaches into holistic packages of intervention. For example, if small farms are to exploit growth opportunities in food staples, then they not only need access to markets but also access to key inputs and technologies to increase their productivity and to meet required quality standards. Interventions that seek to help farm households as farmers also need to be integrated with interventions that seek to enhance their nonfarm employment opportunities or to protect them in emergency situations. Different interventions can have positive cross-impacts on each other. For example, safety net programs that enhance a farmer's assets or ability to manage or cope with risk could enhance their opportunities as farmers as well as consumers. On the negative side, safety net programs might crowd out more market based alternatives (e.g. drought relief vs. insurance).

Many past government-led attempts to assemble integrated packages to assist small farms (e.g. the integrated rural development projects (IRDPs) of the 1970s and 1980s) did not fare well. Key lessons are that they were top down approaches that over reached in terms of coordinating many different agents and over simplified in the face of considerable diversity in local agroclimatic and socio-economic conditions. They also gave too little attention to the problems of the poor and the inherent weaknesses of many public institutions.

There have since been important changes in the kinds of agents contributing to the development of agriculture and small farms, with the restructuring and decentralizing of government agencies and the emergence of civil society (including non-governmental organizations (NGOs) and community and voluntary producer based organizations (CBOs)) and large private firms (e.g. agro-processing firms, supermarkets, and tourism promoters) as important players. This has opened up new opportunities for more participatory, multi-agency, decentralized and market oriented approaches that build on local knowledge of needs, opportunities and constraints that are far more relevant for coping with diversity and changing economic conditions. The challenge for rural development experts is how to build on this new landscape and create new kinds of approaches towards the agricultural and rural sector.

Conclusions

In many poor countries, small farm development offers a viable and pro-poor option for agricultural development. However, small farms are seriously challenged today in ways that make their future precarious. International trade and rising per capita incomes in many countries are changing the nature and composition of demand for agricultural products. At the same time, marketing chains are changing and are becoming more integrated and more demanding of quality and food safety. This is creating new opportunities for higher value production for farmers who can compete and link to these markets, but for many other small farms the risk is that they will simply be left behind. In developing countries, small farmers also face unfair competition from rich country farmers in many of their export and domestic markets, and they no longer have adequate support in terms of basic services and farm inputs. And the spread of HIV/AIDS is further eroding the number of productive farm family workers, and leaving many children as orphans with limited knowledge about how to farm. Left to themselves, these forces will curtail opportunities for small farms, overly favor large farms, and lead to a premature and rapid exit of many small farms.

If most small farmers are to have a viable future, then there is need for a concerted effort by governments, NGOs and the private sector to create a more equitable and enabling economic environment for their development. This must include assistance in forming effective marketing organizations, targeted agricultural research and extension, revamping financial systems to meet small farm credit needs, improved risk management policies, better education and training for nonfarm jobs and where all else fails, targeted safety net programs. These interventions are possible and could unleash significant benefits in the form of pro-poor agricultural growth. Many of the associated public investments could also more than pay for themselves in terms of their economic and social returns (Fan et al., 2000, 2004).

The alternative is a dramatic increase in rural poverty and waves of migrants to urban areas that could overwhelm available job opportunities, urban infrastructure and support services.

References

- Diao, X., and P. Hazell. 2004. *Exploring Market Opportunities for African Smallholders*. 2020 Africa Conference Brief No. 6, International Food Policy Research Institute, Washington, D.C.
- Diao, X., P. Hazell, D. Resnick and J. Thurlow. 2006. *The Role of Agriculture in Development; Implications for Sub-Saharan Africa*. Discussion Paper No. 29, Development Strategy and Governance Division, International Food Policy Research Institute, Washington D.C.
- Dorward, A., S. Fan, J. Kydd, H. Lofgren, J. Morrison, C. Poulton, N. Rao, L. Smith, H. Tchale, S. Thorat, I. Urey, and P. Wobst. 2004. "Institutions and Economic Policies for Pro-poor Agricultural Growth." Discussion Paper No. 15, Development Strategy and Governance Division, International Food Policy Research Institute, Washington D.C.
- Dorward, A., J. Kydd, and C. Poulton. 1998. *Smallholder Cash Crop Production under Market Liberalization: A New Institutional Economics Perspective*. Wallingford and New York: CAB International.
- Ellis, F., and N. Harris. 2004. "New Thinking about Urban and Rural Development." Keynote paper prepared for the U.K. Department for International Development Sustainable Development Retreat.
- Fan, Shenggen, Peter Hazell And Sukhadeo Thorat. 2000. Government Spending, Growth and Poverty in Rural India. *American Journal of Agricultural Economics*, 82(4): 1038-1051.
- Fan, S., Zhang, X., and Rao, N. 2004. "Public Expenditure, Growth and Poverty Reduction in Rural Uganda." Development Strategy and Governance Discussion Paper No.4, IFPRI: Washington, DC.
- Haggblade, S., J. Hammer, and P. Hazell. 1991. "Modeling Agricultural Growth Multipliers." *American Journal of Agricultural Economics* 73 (2): 361–74.
- Hazell, P. B. R. (1992). "The Appropriate Role of Agricultural Insurance in Developing Countries." *Journal of International Development* 4: 567-581.

- Hazell, P. B. R., C. Pomareda and A. Valdes. (1986). *Crop Insurance for Agricultural Development: Issues and Experience*. Baltimore: The Johns Hopkins University Press.
- Hazell, P. and X. Diao. 2005. The Role of Agriculture and Small Farms in Economic Development. Paper presented at
- Kherallah, M., C. Delgado, E. Gabre-Madhin, N. Minot, and M. Johnson. 2002. *Reforming Agricultural Markets in Africa*. Baltimore: Johns Hopkins University Press.
- Kindness, H. and A. Gordon (2002) "Agricultural Marketing in Developing Countries: The Role of NGOs and CBOs". *Policy series No.13*, Social and Economic Development Department, Natural Resources Institute. University of Greenwich, London, UK.
- Lipton, M. 2004. "Crop Science, Poverty, and the Family in a Globalising World." Plenary Session, Brisbane International Crop Science Conference.
- Maxwell, S., I. Urey, and C. Ashley. 2001. "Emerging Issues in Rural Development: An Issues Paper." Overseas Development Institute, London.
- Rosegrant, M., S. Cline, L. Weibo, B. Sulser, and R. Valmonte-Santos. 2005. Africa Facing Alternative Futures: Prospects for and Paths to Food Security in Africa, 2020 Africa Conference Brief 17, IFPRI, Washington DC.
- Reardon, T., C.P. Timmer, C. Barrett, and J. Berdegue. 2003. "The Rise of Supermarkets in Africa, Asia, and Latin America." *American Journal of Agricultural Economics* 85 (5): 1140-46.
- Skees, J., P. Hazell, and M. Miranda. (1999). "New Approaches to Crop-Yield Insurance in Developing Countries." EPTD Discussion Paper 55, IFPRI, Washington DC.
- Walker, T., and N. S. Jodha. 1986. "How small farm households adapt to risk". In Hazell, P., Pomareda, C., and Valdes, A. (eds.), *Crop Insurance for Agricultural Development: Issues and Experience*. Baltimore: The Johns Hopkins University Press.
- World Bank. 2002. World Development Report 2002. Washington DC.