



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.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

RESHAPING AGRICULTURE'S CONTRIBUTIONS TO SOCIETY

630.1

I57

2003

Rea

PROCEEDINGS OF THE TWENTY-FIFTH INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

*Held at Durban, South Africa
16-22 August, 2003*

Edited by
David Colman, University of Manchester,
England
and
Nick Vink, University of Stellenbosch,
South Africa

Waite Library
Dept. of Applied Economics
University of Minnesota
1994 Buford Ave - 232 ClaOff
St. Paul, MN 55108-6040 USA

2005



**Blackwell
Publishing**

Is there a future for small farms?

Peter B. R. Hazell*

Abstract

Small farms are seriously challenged today in ways that make their future precarious. Marketing chains are changing and becoming more integrated and more demanding of quality and food safety. This is creating new opportunities for farmers who can compete and link to these markets, but threatens to leave many others behind. In developing countries, small farmers also face unfair competition from rich country farmers in many of their export and domestic markets. The viability of many is further undermined by the continuing shrinkage of their average farm size. 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, adding to already serious problems of rural poverty and urban ghettos. If small farmers are to have a viable future, then there is a need for a concerted effort by governments, NGOs, and the private sector to create a more enabling economic environment for their development. Appropriate interventions could unleash significant benefits in the form of pro-poor agricultural growth in many developing countries and more than pay for themselves in terms of their economic and social return. But they do not seem very likely at the moment and current trends are moving in the opposite direction.

JEL classification: Q12, Q13, Q17, Q18

Keywords: small farms; market liberalization; agricultural trade; farm size transformation

1. Introduction

Small farms still dominate the agricultural sector in much of the developing world and they are still significant players in the rural life of many rich countries. As part of the economic transformation process, rising labor costs drive most small farms out of business, and only part-time farmers and a few small specialized producers of higher-value products survive. Historically, this process has usually taken several generations to unfold, but the process may prove much faster in the future. New driver variables are quickening the pace, including the miniaturization of small farms under continuing rural population growth in poorer countries, the trade-distorting agricultural policies of most Organization for Economic Cooperation and Development (OECD) countries, a shift toward increasingly integrated and consumer-driven markets as part of market liberalization and globalization, and the demographic

impact of the spread of HIV/AIDS. The viability of small family farms is threatened today in all kinds of countries in historically unprecedented ways. Yet there are good reasons why policy makers should want to keep small farms around, and this will require deliberate policies to provide them with viable development pathways in an increasingly hostile world. This paper reviews the problem and discusses appropriate policy interventions.

2. The lure of small family farms

Why should we care about the future of small family farms? What is it that makes them important in the policy debate in rich and poor countries alike? Why does almost every rich country distort its agricultural markets and spend large amounts of public funds supposedly¹ to support its small farms, and why do many

* *Development Strategy and Governance Division, International Food Policy Research Institute, Washington, DC, USA.*

¹ Although OECD countries cite small farms as the intended beneficiaries of their agricultural policies, in reality large farms seem to capture most of the benefits (World Bank, 2003).

developing countries attempt land reforms or constrain land market transactions in order to create and retain more small farms?

For poorer countries, the attraction lies in their economic efficiency relative to larger farms, and the fact that they can create large amounts of productive employment, reduce rural poverty and food insecurity, support a more vibrant rural nonfarm economy (including rural towns), and help to contain rural-urban migration.

The efficiency of smaller farms is demonstrated by an impressive body of empirical studies showing an inverse relationship between farm size and land productivity (see Heltberg, 1998 for a recent review). Moreover, small farms often achieve their higher productivity with lower capital intensities than large farms. These are important efficiency advantages in countries where land and capital are scarce relative to labor.

The greater efficiency of small farms stems from their greater abundance of family labor per hectare farmed. Family workers are typically more motivated than hired workers and provide higher quality and self-supervising labor. They also tend to think in terms of whole jobs or livelihoods rather than hours worked, and are less driven by wage rates at the margin than hired workers. Small farms exploit labor using technologies that increase yields (hence land productivity) and they use labor-intensive methods rather than capital-intensive machines. As a result, their labor productivity is typically lower than that of large farms. This is a strength in labor-surplus economies, but it becomes a weakness for the long-term viability of small farms as countries get richer and labor becomes more expensive.

In poor, labor-abundant economies, not only are small farms more efficient, but because they also account for large shares of the rural and total poor, small farm development can be win-win for growth and poverty reduction. Asia's green revolution, for example, demonstrates how agricultural growth that reaches large numbers of small farms can transform rural economies and raise enormous numbers of people out of poverty (Rosegrant and Hazell, 2000). Recent studies also show that a more egalitarian distribution of land not only leads to higher economic growth but also helps ensure that the growth that is achieved is more beneficial to the poor (e.g. Deininger and Squire, 1998; Ravallion and Datt, 2002). Small farms also contribute to greater food security, particularly in subsistence

agriculture and in backward areas where locally produced foods avoid the high transport and marketing costs associated with many purchased foods.

Small-farm households also have more favorable expenditure patterns for promoting growth of the local nonfarm economy, including rural towns. They spend higher shares of incremental income on rural nontradables than large farms (Mellor, 1976; Hazell and Roell, 1983), thereby creating additional demand for the many labor-intensive goods and services that are produced in local villages and towns. These demand-driven growth linkages provide greater income-earning opportunities for small farms and landless workers among others.

For rich countries, the potential efficiency gains of small farms are much less important and may not even exist, except for some specialty and labor-intensive products like horticulture. Small farms are attractive because they are key to maintaining a vibrant rural economy. They are important consumers of the services and products of rural towns, they help to maintain critical levels of rural population density needed to sustain key rural services and institutions, and they also have an important electoral voice. Small family farms are also still perceived as an attractive, wholesome, and stable way of life, perhaps because there are still many urban people around who grew up on farms or in rural areas.

But not all see small family farms as desirable. Some have seen them as technologically backward, a form of colonial exploitation, and even a form of self-exploitation (e.g. Karl Marx). A naive belief that large-scale mechanized farming necessarily means greater efficiency and productivity has led some policy makers to seek to consolidate holdings, often through compulsory means or land seizures. These range from large state farms in some post-Independence African countries, large settler farms in colonies or new territories, to cooperatives and state collectives in communist regimes.

3. The farm size transition

Having accepted that small farms have several attractive features, just how small should a small farm be and how many should a country have?

There are no easy answers to these questions. Size depends on the ability to create viable household

livelihoods, and this varies enormously with the type of farming that is possible at any location, and the possibilities of combining farm with nonfarm sources of income. A “viable” small cereal farm, for example, might vary from just a couple of hectares in parts of Asia or Africa to 100 times as large in parts of Europe to 1,000 times as large in North America. But it can be much smaller if cereal farming is combined with a nonfarm source of income, as with many small, part-time rice farmers in Japan.

An important driver of the size distribution of farms is the stage of economic development of a country. Gross Domestic Product (GDP) per capita correlates closely with the relative costs of land and labor. In the early stages of development, small farms typically account for the lion’s share of the farming population. Because farm labor is abundant but land is expensive, small farming is economically efficient. As per capita income rises, economies diversify and workers leave agriculture, rural wages go up, and capital becomes relatively cheaper. It then becomes more efficient to have progressively larger farms. There is a natural economic transition to larger farms over the development process, but one that depends critically on the rate of rural–urban migration, and hence on growth in the nonagricultural sector.

Small farms survive longer into the transformation process if they can adapt to the changing economic environment. Key adjustments include buying or renting additional land, diversifying into higher value production activities (e.g., fruits and vegetables, and niche markets like organics), and expanding into nonfarm sources of income or employment. Fortunately, opportunities to diversify into a broader range of farm and nonfarm activities also grow as countries become richer. This is because the demand for more diverse and higher-value foods increases with per capita incomes and urbanization, and the nonfarm economy grows more quickly than agriculture.

Few countries handle this farm size transition well. Many countries have successfully developed their economies, but farm consolidation and rural–urban migration have lagged behind economic growth, leaving a situation with too many small farms whose incomes fall below the national average. This leads to pressures for government support, and hence the kind of farm policies found in many OECD countries. In much of Southeast Asia the number of small farms is still

increasing despite rapid growth in per capita GDP (Rosegrant and Hazell, 2000). Unless these farms can successfully diversify into nonfarm sources of income, it is likely they too will be headed toward protectionist policies (indeed this is already happening in South Korea and China).

Other countries attempt the transition too soon. An early concentration of land among large farms can occur through colonization (e.g., South Africa, Zimbabwe, and many Latin American countries), creation of large state farms (e.g., Syria and Tanzania), or collectivization of agriculture (USSR, Eastern Europe, and China). Many of these interventions have been costly failures, and have led to lost opportunities for more efficient growth and employment creation in agriculture, and have contributed to impoverishment of neglected small farms and excessive rural–urban migration in relation to available jobs (Eastwood et al., 2003). This has contributed to the kinds of dualistic patterns of development with high rural poverty found in many Latin American countries.

4. New challenges

Government policies have an important bearing on the timing and success of the farm size transition, especially policies and investments that affect the rate of rural–urban migration. The complexity of the transition problem is also changing in some important ways, raising concerns about the future viability of small farms in all types of countries. Four driving forces in particular deserve mention.

First, in many of the poorer countries, continuing rural population growth on a fixed land base is creating a situation where the subdivision of small farms has or is approaching the point where many farms may now be too small to be efficient or to survive. In Ethiopia, for example, large numbers of small farms are now too small to provide a subsistence living even in years with reasonable rainfall, and nonfarm income and employment opportunities are far too limited to provide an adequate compensating source of livelihood. As a result, many farmers have little choice but to practice unsustainable farming methods, and this is undermining current and future land productivity. It is hard to see how the inverse relationship between farm size and land productivity can be sustained under these conditions, or how livelihoods can be sustained without

a growing dependence on food aid and other welfare transfers.² Some land consolidation seems essential for reversing these problems, but it cannot be undertaken on the required scale until viable pathways for rural-urban migration can be found. This, in turn, requires much faster rates of nonagricultural growth than many poor countries are achieving. In Africa, there is also new evidence to suggest that not only are small farms becoming smaller, but land is also becoming more concentrated among larger farms (Jayne et al., 2003). This implies a worrying expansion in the number of landless and near-landless workers in rural Africa, and a possible rapid exodus from the countryside despite insufficient urban employment opportunities.

Second, marketing chains are changing dramatically in all types of countries with trade liberalization and globalization. The small farmer is increasingly being asked to compete in markets that are much more demanding in terms of quality and food safety, and which are much more concentrated and integrated. Supermarkets, for example, are playing a much more dominant role in controlling access to retail markets (Reardon et al., 2003). As small farms struggle to diversify into higher-value products, they must increasingly meet the requirements of these demanding markets. These changes offer new opportunities to small farmers who can successfully access and compete in these transformed markets, but they are also a serious threat to those who cannot.

Third, the protectionist agricultural policies of many rich countries are reaching new heights in creating unfair competition for small farmers in developing countries. Farmers in developing countries not only have limited access to agricultural markets in richer countries, 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; worth about eight times the value of all official development assistance to developing countries in that year (World Bank, 2003). 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

farmers in developing countries 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.

Fourth, 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 problem 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 dominate the landscape and account for the lion's share of the agricultural sector output (Narayanan and Gulati, 2003). If agricultural growth is to play a key role in reducing rural poverty in these countries, then developing viable strategies for small farms is probably one of the most fundamental problems that policy makers will need to resolve.

5. Policy interventions

What kinds of policies are needed to help ensure that small farmers have a viable future? In rich countries, where small farm households account for just a tiny share of the population, the policy tool kit can include targeted subsidies, though these will eventually have to be delinked from production if the Doha round of the World Trade Organization (WTO) trade negotiations succeeds. Given the preponderance of small farms in most developing countries, widespread subsidies are not a viable financial option. Rather, small farms must find viable development pathways that enable them to play a key role in national economic growth and poverty reduction. This requires public policies and investments that create an enabling environment for small farm development. Some of the more important interventions appropriate for developing countries are discussed below.

5.1. Organizing small farmers for marketing

Small farms have always been at a disadvantage in the market place. They only trade in small volumes,

² Carter and Wiebe (1990) have provided evidence from Kenya showing that profits per hectare decline when farms get too small.

often have variable and substandard 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 (Kherallah et al., 2002), but small farmers must now also compete in ever more integrated and consumer-driven markets where quality and price are everything (Narayanan and Gulati, 2003). 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, and help improve the quality and timeliness of small farmers' production and their access to agricultural research and extension, input supplies, and agricultural credit.

Unlike former state cooperatives that are widely discredited because of their poor performance and high cost, key design principles are organizations that are voluntary, economically viable, self-sustaining, self-governed, transparent, and responsive to their members. Supporting these kinds of organizations will require government and donor support, engaging with businesses and civil society groups. Producer-based organizations will need help in developing business and management skills, establishing information systems and connections to domestic and global markets, creating good governance practices, and creating the infrastructure to connect small farmers to finance and input supply systems.

Public policy can help ensure improved market access for small farmers by putting in place institutions to deliver finance, reduce risks, build social capital

of producers and traders, transmit market information, grade and certify goods, and enforce contracts (Gebre-Madhin, 2001). Infrastructure investments are also crucial; the farmers least likely to benefit from globalizing markets are those who are more distant from roads and markets (Narayanan and Gulati, 2003).

5.2. Agricultural research and extension

Small farmers need improved technologies appropriate to their needs if they are to survive in today's marketplace. This typically means utilizing more labor-intensive technologies than large farms, though as small farms get smaller and/or labor becomes relatively more expensive, it becomes increasingly important to develop technologies that increase total factor productivity. Farmers not only need to produce more output and income per unit of land, but also to do this in ways that increase their labor productivity. Otherwise, they will simply be working harder to try and achieve, perhaps unsuccessfully, the same level of per capita income.

Smallholder farms also need to diversify into higher-value products to maintain their incomes, given diminishing land/labor ratios. Such diversification is already happening in many countries, especially in Asia and Latin America. The opportunities for income-enhancing diversification are much more constrained in countries with low and stagnant per capita incomes, as in much of Africa. In these cases, attention needs to be given to developing cash crops for export. Agricultural research for higher-value crops and livestock, and for post-harvest handling, is under-funded in many developing countries.

Publicly-funded research and extension still has a crucial role to play in meeting the technology needs of small farms. Private agricultural research and seed firms are less attracted to the problems of small farms because of the higher transactions costs incurred and lower volumes of business. Producer organizations can help bridge this gap.

Women now manage many small farms and research and extension systems need to cater to their specific needs. Targeted research is also needed for farm households impacted by HIV/AIDS. They typically need technologies for producing foods that use relatively little labor, but without the expense of mechanization (e.g., low tillage methods and choice of crops that require less labor).

the nonagricultural sector. In stagnant countries with low per capita incomes, productive nonfarm opportunities are limited, and government needs to be careful not to encourage too rapid a rate of migration to urban areas. Appropriate macroeconomic policies and public investments are also needed to stimulate economic growth.

5.7. Targeting the vulnerable

Agricultural growth centered on small farms can make deep inroads into poverty and hunger in many poor countries. But 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. 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.

6. Conclusions

Small farms are seriously challenged today in ways that make their future precarious. 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. The danger for many small farms is that they are not yet positioned to compete and access these markets and many will simply be left behind. In developing countries, small farmers also face unfair competition from farmers in richer countries in many of their export and domestic markets. The viability of many is further undermined by the continuing shrinkage of their average size. 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.

If most small farmers are to have a viable future, then there is need for a concerted effort by governments, nongovernmental organizations (NGOs), and the private sector to create a more 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, tenure security and efficient land markets, and when all else fails, targeted safety net programs. In addition, the public sector needs to invest in the provision of basic infrastructure, health, education, and other human capital to improve market access and to increase the range of nonfarm opportunities available to small farm households, including permanent migration to urban areas. These interventions are possible and could unleash significant benefits in the form of pro-poor agricultural growth. But they do not seem very likely at the moment and current trends are moving in the opposite direction. For example, research and extension for small farms is declining, credit for small farms has virtually disappeared, and donor and government investment in crucial rural infrastructure is stagnant at best. The question remains: Is there a future for small farms?

References

- Arndt, C., P. Hazell, and S. Robinson, "Economic Value of Climate Forecasts for Agricultural Systems in Africa," in M. V. K. Sivakumar, ed., *Climate Prediction and Agriculture* (World Meteorological Organization, International START Secretariat: Washington, DC, 2000).
- Carter, M. R., and D. Wiebe Keith, "Access and Capital as Impact on Agrarian Structure and Productivity in Kenya," *American Journal of Agricultural Economics* 72, no. 5 (1990), 1146-1150.
- Deininger, K., and L. Squire, "New Ways of Looking at Old Issues: Inequality and Growth," *Journal of Development Economics* 57 (1998), 59-287.
- Eastwood, R., J. Kirsten, and M. Lipton, "Premature Deagrification?" in *Land Inequality and Rural Dependency in Limpopo Province, South Africa*, Draft paper (2003).
- Gabre-Madhin, E. Z., *Market Institutions, Transaction Costs, and Social Capital in the Ethiopian Grain Market*, Research Report No. 124 (International Food Policy Research Institute (IFPRI): Washington, DC, 2001).
- Hazell, P. B. R., "The Appropriate Role of Agricultural Insurance in Developing Countries," *Journal of International Development* 4, no. 6 (1992), 567-581.
- Hazell, P., C. Pomareda, and A. Valdés, eds., *Crop Insurance for Agricultural Development Issues and Experience* (Johns Hopkins University Press: Baltimore, 1986).
- Hazell, P., and A. Roell, *Rural Growth Linkages: Household Expenditure Patterns in Malaysia and Nigeria*, Research Report No. 41 (International Food Policy Research Institute: Washington, DC, 1983).
- Heltberg, R., "Rural Market Imperfections and the Farm Size-Productivity Relationship: Evidence from Pakistan," *World Development* 26, no. 10 (1998), 1807-1826.

- Jayne, T. S., T. Yamano, M. T. Weber, D. Tschirley, R. Benfica, A. Chapoto, and B. Zulu, "Smallholder Income and Land Distribution in Africa: Implications for Poverty Reduction Strategies," *Food Policy* 28 (2003), 253–275.
- Kherallah, M., C. Delgado, E. Gabre-Madhin, N. Minot, and M. Johnson, *Reforming Agricultural Markets in Africa* (Johns Hopkins University Press: Baltimore, 2002).
- Kindness, H., and A. Gordon, *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, 2002).
- Knox, A., R. Meinzen-Dick, and P. Hazell, "Property Rights, Collective Action and Technologies for Natural Resource Management: A Conceptual Framework," in *Innovation in Natural Resource Management: The Role of Property Rights and Collective Action in Developing Countries*, R. Meinzen-Dick, A. Knox, F. Place, and B. Swallow (Johns Hopkins University Press: Baltimore, 2002).
- Mearns, R., *Access to Land in Rural India*, Policy Research Working Paper No. 2123 (The World Bank, South Asia Region, Rural Development Sector Unit: Washington DC, 1999).
- Mellor, J. W., *The New Economics of Growth: A Strategy for India and the Developing World* (Cornell University Press: Ithaca, NY, 1976).
- Narayanan, S., and A. Gulati, *Globalization and the Smallholders: A Review of Issues, Approaches and Implications*, Discussion Paper No. 50 (Markets and Structural Studies Division, International Food Policy Research Institute: Washington, DC, 2003).
- Otsuka, K., and F. Place, eds., *Land Tenure and Natural Resource Management: A Comparative Study of Agrarian Communities in Asia and Africa* (Johns Hopkins University Press: Baltimore and London, 2002).
- Ravallion, M., and G. Datt, "Why Has Economic Growth Been More Pro-Poor in Some States of India Than Others?" *Journal of Development Economics* 68 (2002), 381–400.
- Reardon, T., K. Stamoulis, A. Balisacan, M. E. Cruz, J. Berdegue, and B. Banks, "Rural Nonfarm Income in Developing Countries," Special Chapter in *The State of Food and Agriculture, 1998*. Rome, Food and Agricultural Organization of the United Nations (1998), pp. 283–356.
- Reardon, T., C. P. Timmer, C. Barrett, and J. Berdegue, "The Rise of Supermarkets in Africa, Asia, and Latin America," *American Journal of Agricultural Economics* 85, no. 5 (2003), 1140–1146.
- Rosegrant, M., and P. Hazell, *Transforming the Rural Asian Economy: The Unfinished Revolution* (Oxford University Press: Hong Kong, 2000).
- Skees, J., P. Hazell, and M. Miranda, *New Approaches to Crop Yield Insurance in Developing Countries*, EPTD Discussion Paper No. 55. (Environment and Production Technology Division, International Food Policy Research Institute (IFPRI): Washington, DC, 1999).
- Van Zyl, J., J. Kirsten, and H. P. Binswanger, *Agricultural Land Reform in South Africa: Policies, Markets, and Mechanisms* (Oxford University Press: Cape Town, 1996).
- Walker, T. S., and J. G. Ryan, *Village and Household Economies in India's Semi-Arid Tropics* (Johns Hopkins University Press: Baltimore, 1990).
- World Bank, *Global Economic Prospects: Realizing the Development Promise of the Doha Agenda in 2004* (World Bank: Washington, DC, 2003).