Nordiska Afrikainstitutet
The Nordic Africa Institute

Policy Notes 2010/7

Why is agriculture so important to reducing poverty?

By Mats Hårsmar

Over the last few years, there has been both talk about and action regarding the long-term neglect of agriculture in development. An agricultural revival has occurred, with African governments committing themselves to spending at least 10 per cent of their budgets on agriculture. Donors such as the World Bank and many bilateral organizations are refocusing on the sector. This is partly due to the prevalence of rural poverty in sub-Saharan Africa as well as in South Asia.

Despite this, the debate on the appropriate role of agriculture in economic growth lingers on among academics and policymakers. In particular, agriculture's contribution to broader economic growth is questioned. Should growth be driven by agriculture or by something else?

Recent empirical studies and earlier theoretical work demonstrate that growth in the agricultural sector has contributed more to poverty reduction than growth in non-agricultural sectors. This paper discusses this issue and highlights some of the preconditions for the achievement of this outcome.

In resource-poor low-income countries, growth in agriculture is more than five times more effective in reducing poverty among the poorest sectors of the population than growth in other sectors. In sub-Saharan Africa, agriculture may be up to eleven times more effective in reducing poverty among the poorest. However, these effects recede as people and countries grow richer: growth in non-agricultural sectors then becomes more important to reducing poverty among the slightly less poor. The poverty-reducing effects from growth in agriculture decline sharply in middle-income, as well as in more unequal countries (Christiaensen et al. 2010). These are some of the findings from an empirical study of 80 countries over the period 1980 to 2002, and they confirm the results of earlier studies using cross-country regressions (Ravallion and Datt 1996; Timmer 1997; Dorward et al. 2002; Haggblade et al. 2007; Ligon and Sadoulet 2007).

In short, agricultural growth has the greatest impact on poverty reduction in the poorest countries, and where distribution is fairly equal. In particular, it is growth in small-scale agriculture that matters most. Thus, anyone focusing on poverty reduction in low-income countries should make agriculture growth a central concern. Total aid flows to this sector have increased in recent years. However, according to OECD statistics, Nordic countries, and Sweden in particular, have not followed this course.[1]

It is well-known that most of the poor people of the world, especially those in sub-Saharan Africa, live in rural areas, and are preoccupied with agriculture, often subsistence agriculture. According to recent estimates, about 76 per cent of the world's poor live in rural areas – at a time when half the world's population lives in cities. In sub-Saharan Africa, 70 per cent of the poor live in the rural areas. Moreover, some 80 per cent of all reductions in poverty come from reduced rural poverty (Ravaillon et al. 2007). However, even though poor people may be concentrated in one economic sector, it is not evident that poverty reduction will always be achieved through growth

1. http://stats.oecd.org/Index.aspx?DatasetCode=CRSNEW, accessed 2010-09-14.

ISSN 1654-6695
ISBN 978-91-7106-676-3

This issue in the Policy Notes series was initiated by the NAI-research cluster on Globalization, Trade and Regional Integration. The purpose of the Policy Notes series is to engage in a public debate and a policy dialogue on current African issues informed by research taking place at the Nordic Africa Institute. For more information or comments on this issue contact Fantu.Cheru@nai.uu.se or the series editor Birgitta.Hellmark-Lindgren@nai.uu.se

in that sector. And while most poverty reduction has been achieved in rural areas, this does not prove that growth in agriculture is the causal factor. Furthermore, over the years much development theory has treated agriculture as a backward sector. Consistent with this view, labour and capital should rather be shifted out of this sector and put to more productive use (Lewis 1954; Collier and Dercon 2009). How, therefore, can agriculture still be seen as so important to poverty reduction?

The discussion about the role of agriculture in economic growth and development is multifaceted. It has been going on for many years and it still continues (Thorner et al. 1966; Nurkse 1952; Lewis 1954; Johnston and Mellor 1961; Schultz 1964; Collier and Dercon 2009, Christiaensen et al. 2010, Haggblade et al. 2007). The focus here is on how agricultural growth affects poverty rather than overall economic growth. From a theoretical perspective, there are four aspects to agricultural growth's role in reducing poverty:

a) the direct effect of agricultural growth leading to reductions in poverty;

b) an indirect effect, where growth in agriculture leads to growth in other economic sectors;

c) the relative size of agriculture in the total economy;

d) the share of poor people who are active in agriculture.

The direct effect of agricultural growth on poverty reduction occurs when those active in agriculture secure higher incomes and increase their consumption. This link is not obvious. Statistics from 1960- 2003 show that, globally, agriculture has grown slower (2.3 per cent per year) than the non-agricultural sectors (3.9 per cent per year). This is true throughout this period and for all the different continents (Christiaensen et al. 2010, table 1). Despite this, and contrary to a widely held view, labour productivity has actually been growing faster in the agricultural sector than in other sectors, with the exception of South Asia. In sub-Saharan Africa, labour productivity in agriculture has admittedly been growing very slowly. However, non-agricultural productivity growth on this continent has even been negative (Ibid., table2).

When incomes rise, demand for food increases at a slower rate than demand for non-agricultural products and services. This implies that growth in the agricultural sector has been, and will continue to be, slower than growth in other sectors. However, as indicated above, labour productivity in agriculture may increase through changes in techniques and farming systems. Hence, a direct contribution by agriculture to poverty reduction is possible. These possibilities should theoretically be greater in sub-Saharan Africa and South Asia, since labour productivity is much lower there than elsewhere in the world.

However, agricultural growth chiefly reduces poverty through its effect on growth in other economic sectors, the indirect effects (b) above). There is growing consensus that investments in agriculture might result in faster overall economic growth, even though agriculture itself grows more slowly than other economic sectors (Christiaensen et al. 2010, 8; Shepherd 2010, 3). Agricultural growth multipliers act through different linkages (Haggblade et al. 2007, 143):

- Production linkages, which include increased demand for agricultural inputs and increased processing of agricultural products ("backward and forward linkages");
- Consumption linkages, which arise when farmers spend increased incomes on locally produced goods and services such as milk, fruit and vegetables, as well as healthcare and education;
- Factor market linkages, which occur when labour moves between agricultural and non-farm sectors;
- Productivity linkages, which occur when increased productivity in agriculture leads to lower food prices, which in turn increases the productivity of poor manual labourers in other sectors, who, for instance, can afford more and healthier food.

In other words, most of the poverty reducing effect of agriculture stems from the rural non-farm sector, which is very labour intensive, and where wages subsequently increase. The strategy to follow has been described as "walking on two legs" – agriculture and the rural non-farm sector (Shepherd 2010). When farmers' incomes increase, poor farmers spend about 80 per cent of the increase on local products and services (Mellor 1999). Richer farmers tend to spend lower shares of their incomes than the poor do, and not as much on local products and services. This is part of the reason agricultural growth is less poverty-reducing where initial inequality is greater.

Time lags

One reason we know that the indirect effects drive most of the poverty reduction is the existence of time lags. In a study of India, Datt and Ravallion (1998) found the poverty reducing effect of agriculture to be five times as great in the long run (three years and more) as in the short run (one year). They also found time lags in the effect of agricultural growth on rural wage rates. Similar time lags also appear in the study by Christiaensen et al. (2010), in which three-year averages for growth are used. The largest reduction in poverty does not follow immediately on wage increases in agriculture, but later, when the peasants increase their consumption of local goods and services. This leads to increased wages in these economic activities (Mellor 1999, 14). As well, some researchers point to gradual, possibly inter-generational processes of accumulation as essential to the agricultural pathway out of poverty (Shepherd 2010, 6).

For many poor people, agriculture is their main economic activity – the participation effect mentioned above (d). This effect in itself contributes to higher reductions in poverty, not just because the poor happen to be farmers, but rather because poor farmers often have difficulty in benefiting from growth elsewhere in the economy. Labour- and product markets often fail in rural areas, leading to the exclusion of poor farmers (Christiaensen 2010, 15).

It is also unlikely that profits and income generated in other economic sectors will be redistributed to agriculture. Rather, in many developing countries, there has been a bias against agriculture and rural areas.

The general picture is that growth in agriculture reduces poverty much more efficiently than growth in other economic sectors. However, there are differences among countries. Agricultural growth has a greater poverty-reducing effect in resource-poor countries, where wealth is fairly equally distributed. Land-locked countries with few natural resources, such as Ethiopia, Burkina Faso or Niger, fall into this category. Further, agricultural growth is most effective for the poorest groups – those living below 1 USD/day. For those living below the 2 USD/day, growth in the non-agricultural sectors is more important to poverty reduction. In general, those who are slightly less poor have access to other income sources outside agriculture.

Even In middle-income countries, agricultural growth is slightly better at reducing poverty among the poorest. However, the poverty-reducing effect of agriculture gradually diminishes with rising incomes, as people begin to consume things other than food and locally produced products. As this happens, the important indirect effects of agriculture on poverty weaken. Furthermore, in both low- and middle-income countries, inequality is unhelpful to poverty reduction. In countries with unequal distributions of wealth, or possessing natural resources such as minerals or oil, the poverty-reducing effects of both agricultural and non-agricultural growth weaken (Christiaensen 2010, 15). The reason for this is that the effects of growth then accrue mainly to those who own and control productive resources such as land.

There is an argument that coastal countries in sub-Saharan Africa, such as Ghana, Côte d'Ivoire or Kenya, should take advantage of the opportunities that globalization offers, rather than focus on agriculture. The argument goes that they should invest in skills, engage in manufacturing and providing services and make full use of the trading opportunities (Dercon 2009, 12f). However, even in these countries, agricultural growth may still be highly relevant in the inland areas and for poorer groups.

Pro-poor growth

The poverty-reducing effects of agricultural growth would be greatly enhanced if other conditions for pro-poor growth are also present. Research into these broader aspects shows that properly functioning institutions, expanded opportunities and functioning markets are important (Besley et al. 2006). With respect to institutions, functional rights, if not full property rights, to productive assets such as land are essential if poor people are to be able to participate in the economy. As well, institutions are central to governance. There are indications that free and critical mass media may increase the prospects for good governance, which includes macroeconomic stability and predictability. Poor people also need expanded opportunities to take part actively in the economy. For instance, such opportunities arise from widespread access to education as well as to credit markets. In particular, education of girls has been found to reduce poverty effectively (Ravallion and Datt 1996). The functioning of markets is a third area of importance to pro-poor growth. Intrusive regulation and malfunctioning market institutions may be obstacles to this (Besley et al. 2006).

Where such broader prerequisites are at hand, poverty reduction can be enhanced. However, these factors may also be prerequisites before growth in agriculture can occur.

Within the fields of agriculture and economic growth there are a number of issues that are not fully agreed among researchers. One is the question of what scale is more efficient in agriculture – should smallholder agriculture or larger estates be promoted? Those claiming that smallholders are more efficient use the "inverse productivity" argument (Thorner et al. 1966, referring to Chayanov), which implies that yields per hectare are higher on smaller farms than on larger ones. Part of the explanation for this may be that labour supervision costs increase when labour outside the family is used. However, others claim there are important economies of scale that are not fully utilized in many settings. Larger farms have potential advantages when it comes to innovation, finance and ithe organization of markets. Where these advantages are fully realized, inverse productivity will disappear (Collier and Dercon 2009, 4ff).

Impacts from globalization

Another issue not finally settled is whether the effects of agricultural growth on poverty reduction are valid for both closed and open economies. Much of the empirical data stems from a period when economies were less open. Increasing globalization may very well have resulted in agricultural growth becoming more difficult, given competition from international trade. More importantly, where there is free international trade, the effects of growth in separate economic sectors will even out (Eswaran and Kotwal 1992, 245f). However, poorly developed rural roads and infrastructure, together with weak international markets for many food products, imply that many markets may still be regarded as domestic, so that the closed economy models can still be seen as the most relevant for analytical purposes.

In this context, it can be noted that in many Asian countries agricultural growth has benefited from schemes aimed at protecting poor people from the sharp and sudden shifts in food crop prices caused by the small size of international markets (Timmer 1996). Since world markets are thin, price fluctuations tend to be high. This uncertainty about future prices is detrimental to the growth of agriculture, especially where small farmers with their small margins are involved.

A third contentious issue is the source of growth in the agricultural sector. Is it from technological changes in the sector itself, or is it driven by increasing demand for agricultural products stemming from growth in other economic sectors (Collier and Dercon 2009, 8)? Probably, it is from some combination of the two (Christiaensen et al. 2010, 6). Linked to this debate is the question of the role of the state and the private sector in promoting agricultural growth. Even here, the usual answer is a combination of the two, but with the role of the state being the subject of continued debate.

SUMMARY

Regardless of these controversies, we may conclude that, generally, economic growth stemming from the agricultural sector is more effective in reducing poverty than growth in other sectors. This is especially the case for the poorest groups in resource-poor countries. By contrast, growth in non-agricultural sectors is more effective in improving the situation of the slightly less poor. Agriculture's largest contribution to poverty reduction comes from its indirect effects on growth in other rural sectors, where labour intensity is high. Hence, poverty should be reduced by walking on both these legs – agriculture and the rural non-farm sector – simultaneously. This is the most important policy lesson for donors as well as policymakers in developing countries.

The poverty-reducing effects of growth in agriculture gradually disappear as countries grow richer. In middle-income countries, non-agricultural growth may be of equal or even greater importance. Initial inequality seems to hinder poverty-reduction initiatives, regardless of their source.

REFERENCES

Besley, T., R. Burgess and D.Donaldson, 2006: "Confronting Global Poverty: The Role of Institutions, Expanding Opportunities and Market Liberalization", EGDI Studies, Ministry for Foreign Affairs, Stockholm.

Christiaensen, L., L. Demery and J. Kuhl, 2010: "The (Evolving) Role of Agriculture in Poverty Reduction – An Empirical Perspective", *Working Paper No 2010/36,* UNU-Wider, Helsinki.

Collier, P. and S. Dercon, 2009: "African Agriculture in 50 Years – Smallholders in a Rapidly Changing World?". Paper presented to the Expert Meeting on How to Feed the World in 2050, FAO, 24-26 June, 2009, Rome.

Datt, G. and M. Ravllion, 1998: "Farm Productivity and Rural Poverty in India", *Journal of Development Studies,* 34:4, 68-85.

Dercon, S., 2009: "Rural Poverty: Old Challenges in New Contexts", *World Bank Research Observer,* Advance Access, Washington D.C.

Dorward, A., J. Kydd, J. Morrison and I. Urey, 2002: "A Policy Agenda for Pro-Poor Agricultural Growth", Working Paper, Imperial College at Wye, Ashford.

Eswaran, M. and A. Kotwal, 1993: "A theory of real wage growth in LDCs", *Journal of Development Economics,* 42:243-69.

Haggblade, S., P.B.R. Hazell and P.A. Dorosh, 2007: "Sectoral Growth Linkage between Agriculture and the Rural Nonfarm Economy", in S. Haggblade, P.B.R. Hazell and T. Reardon (eds), *Transforming the Rural Nonfarm Economy,* Johns Hopkins University Press, Baltimore.

Johnston, B. and J. Mellor, 1961: "The Role of Agriculture in Economic Development", *American Economic Review,* 4:566-93.

Lewis, W.A., 1954: "Economic Development with Unlimited Supplies of Labour", *Manchester School of Economic and Social Studies,* 22:139-91

Ligon, E. and E. Sadoulet, 2007: "Estimating the Effects of Aggregate Agricultural Growth on the Distribution of Expenditures". Background paper for the *World Development Report 2008*, World Bank, Washington D.C.

Mellor, J.W., 1999: "Pro-Poor Growth – The Relation between Growth in Agriculture and Poverty Reduction", USAID, Washington D.C.

Nurkse, R., 1952: "Growth in Underdeveloped Countries. Some International Aspects of the Problem of Economic Development", *American Economic Review,* 42:2, 571-83.

Ravallion, M. and G. Datt, 1996: "How Important to India's Poor is the Sectoral Composition of Economic Growth?", *World Bank Economic Review,* 10:1.

Ravaillion, M., S. Chen and P. Sangraula, 2007: "New Evidence on the Urbanization of Global Poverty", *World Bank Policy Research Paper 4199,* World Bank, Washington D.C.

Schultz, T.W., 1964: "Transforming Traditional Agriculture", Yale University Press, New Haven.

Shepherd, A., 2010: "Agriculture and Escaping Rural Poverty: An Analysis of Movements and Markets". Paper for CPRC Conference, 8-10 Sept 2010, Manchester.

Thorner, D., B. Kerblay and R.E.F. Smith (eds), 1966: *A.V. Chayanov on The Theory of Peasant Economy,* Richard D Irvin Inc, Homewood, IL.

Timmer, C.P., 1997: "How Well do the Poor Connect to the Growth Process?", *CAER Discussion Paper No 178,* Harvard Institute for International Development, Cambridge, MA.

http://stats.oecd.org/Index.aspx?DatasetCode=CRSNEW

Mats Hårsmar *is senior research associate at the Nordic Africa Institute. Previously, he served as chief analyst in development policies at the Swedish Ministry for Foreign Affairs. His research interests are agricultural development, including technological change, and poverty dynamics.*

THE NORDIC AFRICA INSTITUTE
P.O. Box 1703 • SE-751 47 Uppsala • Sweden
+46 18 56 22 00 • info@nai.uu.se • www.nai.uu.se

October 2010