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# Rural Poverty: Old Challenges in New Contexts

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*Poverty is still a predominantly rural phenomenon. However, the context of rural poverty has been changing across the world, with high growth in some economies and stagnation in others. Furthermore, increased openness in many economies has affected the specific role of agricultural growth for rural poverty reduction. This paper revisits an 'old' question: how does growth and poverty reduction come about if most of the poor live in rural areas and are dependent on agriculture? What is the role of agricultural and rural development in this respect? Focusing on Sub-Saharan Africa, and using economic theory and the available evidence, the author comes to the conclusion that changing contexts has meant that agricultural growth is only crucial as an engine for growth in particular settings, more specifically in landlocked, resource-poor countries, which are often also characterized by relatively low potential for agriculture. However, extensive market failures in key factor markets and likely spatial effects give a remaining crucial role for rural development policies, including focusing on agriculture, to assist the inclusion of the rural poor in growth and development. How to overcome these market failures remains a key issue for further research. JEL codes: O41, Q10, O55*

Even though poverty has been reducing in some parts of the world in recent years, not least in East Asia and China, and more recently in South Asia, its persistence in large parts of Africa and elsewhere keeps it high on the agenda. Poverty persistence is to a large extent related to a poor growth performance in national economies. Furthermore, in large parts of the world, poverty also remains in terms of sheer numbers a mainly rural and agricultural phenomenon, in that most of the poor depend on the rural sector for their livelihood.

In this paper I will revisit some well-rehearsed but nevertheless relevant questions. What is the place of rural development and agricultural growth in growth and poverty reduction? What are the main rural constraints on growth and

poverty? Has more recent economic theory and empirical research given more guidance as to what can be done? These issues will be discussed, keeping in mind some of the poorest parts of the world, most notably Sub-Saharan Africa. I will use some recent theoretical models, including building on Lewis (1954), as my guide to structure the discussion, including that of the empirical evidence, even though this is incomplete, to corroborate my conclusions.

These questions are well rehearsed and feature prominently in many general discussions on development. Textbooks typically engage with issues at various levels, for example Ray (1998) and Bardhan and Udry (1999). Longer treatments can be found in Timmer (2002) or de Janvry and others (2002). What is different in this paper is that I want to revisit some of the theory and evidence specifically with Sub-Saharan Africa in mind; as a result it is highly selective. Overall, the experience with agricultural growth, growth in general, and poverty reduction over the last decades has been disheartening in this region. It has provided the context for renewed calls for a strong focus on agriculture in Africa as a necessary condition for growth and poverty reduction. For example, Sachs has been most vocal in calling for a ‘green revolution’ in Africa as an essential part of its development strategy (Sachs 2005). More nuanced analyses, such as the recent *World Development Report 2008* on agriculture for development, emphasize the crucial role of agriculture as being “vital for stimulating growth in other parts of the economy” (World Bank 2007, p. xiii) in Sub-Saharan Africa, requiring strong productivity increases in smallholder agriculture.

In the context of the substantial heterogeneity in circumstances and opportunities across Sub-Saharan Africa, the next section will first briefly summarize the current evidence on the evolution of rural poverty, contrasting the African experience with other parts of the world. The evidence is consistent with a classic view that a move out of agriculture is correlated with overall poverty reduction. In the African context, neither a large scale poverty reduction nor a move out of the rural sector is occurring. Of course, this does not prove a causal link. Nor does it prove that a focus on agricultural growth is not warranted. I will ask how theory as well as the available evidence can inform us on what role agricultural and rural development has to play in both growth and poverty reduction in Africa.

In the next section I offer a discussion of the relevance of a macroview on the role of agriculture in growth and poverty reduction. This will require us to revisit some of the old and seemingly unfashionable questions related to sectoral and urban–rural linkages to understand better the role of the relevance of agricultural and rural development in the Africa setting. One of the key problems in this review is the relatively sparse evidence, so I rely largely on a simple but suggestive model of rural–urban linkages to make sense of this evidence. Combining this with recent approaches to the question of the scope for growth in Africa, emphasizing its heterogeneity in opportunities (Ndulu and others 2008), allows us to

identify those specific settings in which agricultural development is likely to be essential in stimulating growth and poverty reduction, as well as the nature and role of rural development in other settings. In particular, I will argue that the role of agriculture is likely to be very different in different settings, depending on whether a country can take advantage of manufacturing opportunities, whether it is dependent on others for its natural resources, or whether it is landlocked and with few natural resources of its own. I will argue that, especially in the latter case, a focus on agricultural growth may be an essential, if difficult, route out of poverty.

In the final section, the strong assumptions regarding the nature of markets implied in the macroview will be complemented by a microview which emphasizes different market failures and the possibility of poverty traps. I will focus on three examples of serious market failures—those related to credit, to risk, and to spatial effects—and I will review their theoretical impacts and the available evidence for them. These market failures, especially in circumstances where they may lead to poverty traps, bring rural and agricultural policies back to the fore, leading to suggestive policy conclusions on the role of agriculture and rural development.

## Rural Poverty Patterns

Poverty is still predominantly a rural phenomenon. Pick a random poor person in the world and the odds are that this person will be living and working in the rural areas as a farmer or agricultural worker. Even though the data are not without problems, the most recent estimates suggest that about 76 percent of the poor in the world live in rural areas, well above the overall population share living in rural areas, which is 58 percent (Ravallion and others 2007).<sup>1</sup> Sub-Saharan Africa is no exception: while it has the highest poverty rate overall, rural poverty is about a quarter higher than urban poverty, with 65 percent of the population and 70 percent of the poor living in rural areas. At current patterns of growth, poverty reduction, and population growth, poverty is likely to remain a predominantly rural phenomenon for the next few decades (Ravallion and others 2007).

Is this changing? The figures in Ravallion and others (2007) also offer a suggestive insight into the recent patterns of urbanization of poverty over the period 1993 to 2002. Even though the urban poverty rate has marginally decreased in the world, the urban share of poverty has been increasing (from about 19 to 24 percent) as the urban population has grown faster than the rural population, largely due to in-migration.<sup>2</sup> There is considerable variation in this pattern as well. In Sub-Saharan Africa, a very marginal decrease in rural poverty and stagnating urban poverty rates, with a growing share of the urban population in the

**Table 1.** Growth of GDP and Agricultural GDP

	<i>Growth GDP 1990–2000</i>	<i>Growth GDP 2000–04</i>	<i>Growth Agricultural GDP 1990–2000</i>	<i>Growth GDP Agricultural 2000–04</i>
Low income	4.7	5.5	3.1	2.7
Middle income	3.8	4.7	2.0	3.4
East Asia & Pacific	8.5	8.1	3.4	3.4
South Asia	5.6	5.8	3.1	1.9
Sub-Saharan Africa	2.5	3.9	3.3	3.6

*Source:* World Development Indicators, World Bank.

total population, is responsible for a more substantial urbanization of poverty and little change in total poverty. The global overall urbanization of poverty in the context of relatively substantial poverty reduction, and with the larger part of the ‘stock’ of the poor living in rural areas, also implies that rural poverty has contributed most to overall declines in poverty: using a simple decomposition, Ravallion and others (2007) calculate that about 80 percent of aggregate poverty declines stem from rural poverty declines. But this obviously does not prove any causality between, say, urbanization and poverty, or indeed that what happens in the rural or agricultural economy is in itself the cause of poverty declines.

In particular, these patterns have to be seen in the broader context of the economy. ‘Growth in GDP per capita and poverty reduction are well known to be coinciding with a gradual decrease of the share of GDP from agriculture as well as the share of the population engaged in agriculture. For example, across all low-income countries, growth stood at about 5 percent a year, with the share of agriculture declining from 32 to 23 percent of GDP between 1990 and 2004 (World Bank 2005b). Contrasting the experience in the 1990s of Sub-Saharan Africa with the relatively fast growing regions in East Asia and Pacific (including China) and South Asia, where substantial poverty reduction is taking place, is instructive (table 1). We observe growth of overall GDP far outpacing agricultural GDP growth in both East Asia and South Asia, but not so in Sub-Saharan Africa, where overall growth and growth in agricultural GDP were more similar at 2.5 and 3.3 percent a year respectively.<sup>3</sup> With population growth still at about 2.3 percent per year in Sub-Saharan Africa, much higher than in these other regions, per capita growth has been minimal. In other words, there is little sign of a structural transformation in Sub-Saharan Africa, despite signs of some urbanization of poverty, compared to the patterns observed in more successful regions.

For some, agricultural growth is seen as the key engine of growth (Timmer 2007). The higher recent growth rate in African agriculture is, then, a sign of hope, even if at current rates they can hardly be viewed as evidence of rapid agricultural transformation. In such a view, the key is to raise agricultural

productivity to allow growth to take off. A standard conceptualization of this process focuses on the existence of linkages in inputs and outputs between agriculture and other sectors (Johnston and Mellor 1961). Showing sympathy with this view, in the *World Development Report 2008* it is argued that, in currently agriculture-based economies, high growth in agriculture may well be the road to economic take off.<sup>4</sup> Even though the historical evidence on the role of agriculture in allowing the Industrial Revolution to start in Europe is suggestive, and that agricultural growth was also a significant element in the growth success of East Asia and China, it is much harder to argue that agricultural growth is *essential* to allow growth to take off, and the evidence for this is not clear-cut and is hard to come by.

Historians are still debating vigorously whether an agricultural revolution, in terms of a period of rapid increases in productivity during the 18th and 19th centuries, with its seeds earlier, was a key cause of the Industrial Revolution and subsequent growth, first in England and then elsewhere in Europe (Crafts 1985; Allen 1999). The timing of the growth in labor productivity is disputed, some dating it much earlier than commonly suggested (Allen 1999), while some even dispute that there was any significant productivity increase in agriculture in England in the period 1560 to 1850, so that its role as a precursor for overall growth increases is even more minimal (Clark 2002). Productivity increases in agriculture may have been a consequence of the Industrial Revolution, linked to competition over labor, rather than a precursor (Gantham 1989). Furthermore, recent comparisons of European agricultural productivity with levels in the Yangtze Delta in the 17th to early 19th centuries suggest that Chinese land and labor productivity in agriculture were close to the best performers in Europe in that period (England and the Low Countries), undermining the view that agricultural circumstances allowed industrialization to take off in these countries and not elsewhere. More recently, while the important role of policy changes leading to agricultural growth in the growth success of China is not disputed, this does not necessarily extend to other Asian success stories. For example, Korea appears not to have invested in agricultural productivity in the period leading up to its rapid industrialization (Amsden 1989).<sup>5</sup>

Growth linkages from agriculture in currently developing countries, including Africa, are commonly suggested to be considerable (for a review, see Staatz and Dembele 2007). While possible, the evidence is hard to compile and subject to considerable methodological problems. Simultaneity difficulties affect the econometric evidence from time series for particular countries, while panel data analysis produces ambiguous results (World Bank 2007). Most analysis depends on simulation models (such as that based on computed general equilibrium models or on input–output models), which inevitably have to impose strong and untested behavioral assumptions to derive results (Dorosh and Haggblade 2003).

There is stronger evidence in favor of the view that agricultural growth helps growth to be more pro-poor, albeit possibly dependent on context. For example, in China, it is estimated that growth from agricultural growth contributed up to four times more to poverty reduction than growth from industry or the service sector (Ravallion and Chen 2007). However, the rather favorable land distribution there may well have played a key role in this, a factor contributing to similar evidence in other East Asian settings, such as Vietnam. Evidence from India suggests a more subtle message: the impact of the growth in agriculture is matched by growth in services in terms of their poverty-reducing effects, although these effects, from non-farm growth, are larger in states with higher initial farm productivity (Ravallion and Datt 1996, 2002). Furthermore, evidence from Foster and Rosenzweig (2004) suggests that areas in India with the slowest growth in agricultural productivity had the largest growth in the rural non-farm tradable sector.

This discussion of patterns and change in rural poverty helps to motivate our further analysis on Africa. It is clear that poverty is highest in rural areas, but is that sufficient reason to focus on rural areas and agriculture? Successful poverty reduction is not simply equated with relatively high growth in agriculture. At best, during periods of rapid poverty reduction correlated with growth, rural growth is likely to be important for poverty reduction, but successful growth is associated with growth in the non-agricultural sector fast outpacing agricultural growth.

In any case, this implies that understanding rural poverty changes cannot naively focus only on what happens in the rural sector or in agriculture. Analysis will have to be done in the context of overall growth and changes, taking into account rural–urban linkages. Arguably, the first systematic treatment of these issues are in the Lewis model (Lewis 1954). This model is effectively part of a *theory of urban and rural interactions*, albeit with particular assumptions about the functioning of markets in urban settings and, especially, the nature of incentives and decisionmaking. Much work has refined this type of analysis: a shared underlying research question is how does growth and poverty reduction come about if much activity and labor is initially in the agricultural or rural sector?<sup>6</sup> These questions have somewhat been forgotten in much recent research.

However, the context of the rural sector has also rather dramatically changed in the developing world, when compared say to the 1970s and 1980s. In most of the developing world, not least in Sub-Saharan Africa, market-based reforms (“getting the prices right”) has moved forward dramatically. In Africa, the context of farming and agricultural markets has substantially changed, and virtually everywhere important liberalization, mostly domestic but also increasingly of international trade, has been taking place. Globalization and increased openness, as well as investment in commercial agriculture and marketing, are changing the context slowly but in an irreversible way. High commodity prices, including for

cereals, provides new opportunities for agriculture. All these factors provide a different context to ask (again): Can and should agriculture be the engine for growth? Can and should it be an engine for poverty reduction in the context of growth?

## A Role for Rural and Agricultural Growth in Growth and Poverty Reduction in Africa?

Much basic analysis of the importance of agricultural growth for poverty reduction is based on simplistic premises. For example, it tends to be stated that since the poor are employed in agriculture, agriculture must be the basis of poverty reduction efforts. Against this is one of the basic insights from most data on poverty: that a systematic increase in prosperity tends to be linked to having fewer people dependent on agriculture for their livelihoods. The key question in this respect is how to get them out of the agricultural sector in a sustainable way.

As it is one of the clearest analyses of this issue, I will build on the work by Eswaran and Kotwal (1993a, 1993b, 1994, 2002), which, though containing excellent economic theoretical insights, is bereft of even a single equation. The relevance of their work lies mainly in the clarity of the questions asked and answered; most of the points have been made by others, but rarely as crisply and convincingly. In this section, I will briefly summarize the key points they make and give a flavor of their analysis, which is done with India in mind. Then I will discuss how applicable these insights are for other parts of the world, most notably for Africa.

Eswaran and Kotwal's analysis can be thought of as a Lewis model within a proper general equilibrium framework. It also drops some of the most difficult assumptions underlying Lewis's original analysis, but which have remained present in many of the subsequent contributions. To put it bluntly, there is no assumption that rural labor markets work in a way equivalent to agricultural workers spending too much time sitting under trees (surplus labor that can be freely extracted). Furthermore, industrial workers do not choose to eat shirts during a critical phase of the growth process (that is, when total output in agriculture is going down, they are willing to shift to consuming less food and more manufacturing goods).<sup>7</sup>

### *Theoretical Framework*

The Eswaran and Kotwal model assumes a two-sector economy, industry, and agriculture. There are two goods: shirts and food. Production in both sectors is

characterized by (different) constant returns to scale production technology, using labor as well as land in agriculture. There are landowners and workers in the rural economy, and workers in the industrial sector. A crucial assumption is that preferences are lexicographic: people will first need to have enough food before they will buy shirts. It captures an Engel effect that richer people will spend less on basic essentials, but, by making it more extreme, its relevance comes out more directly. An alternative way of looking at this is to state that there is no circumstance in which, for very poor people, lower prices for manufactured goods cannot induce them to cut back on essential basic commodities. Even though in reality it may not be as clear-cut, this view takes seriously that poverty is related to deprivation in essential food intake. As EW show, relaxing the assumptions does not fundamentally change the result, but it does make the dichotomy in implications under different processes of technological and other development marginally less striking. There is also an initial inequality in this economy. Some (the rich) have assets such as land; the poor only have labor. At first, the poor only eat food, since they do not have enough to satisfy their basic needs; once satiated with food, they do not eat more. So there is a maximum level of spending on food, and a poor person is someone who only spends on food.

It is further assumed that there are clearing and integrated labor markets across rural and urban areas.<sup>8</sup> This means that people are indifferent as to whether they work in agriculture or industry: contrary to Lewis, these markets are not perfectly segmented, but integrated.<sup>9</sup> Clearing product markets are those where demand equals supply in each. All these assumptions about markets imply that poverty will go down if labor demand increases, resulting in an increase of real wages. In other words, real wage increases for the initially poor determine whether poverty declines. But how does this work? Using the assumptions, a generic model can be developed that can be used to contrast a number of alternative strategies to achieve this. Understanding the context and situation in which these different strategies are effective ways of reducing poverty will also help us to understand how important it is to focus on agricultural and rural development.

First, in a closed economy, the policy to be considered is (neutral) industrial progress via total factor productivity (TFP) growth. Under these assumptions, Eswaran and Kotwal show that this implies that more shirts are being produced for the same amount of labor. Prices for shirts will go down, but crucially the poor do not care for these cheaper shirts, since they still do not have enough food. The result is that there is no incentive for anyone to move out of agriculture, since total food supply would go down and demand for food would go up. In the end, the TFP growth only benefits the rich, who have enough food and are already consuming shirts, which they can consume more of. The marginal product of labor in industry goes up, but the price of shirts goes down. Employment is unchanged, and nominal wages, food prices, and therefore real



wages for the poor are the same as before. Poverty is simply unchanged, despite TFP growth in the industrial sector.

Next, consider again a closed economy and a policy of (neutral) technological progress in agriculture. More food is being produced for the same labor. This is obviously of interest to all the workers: there is more food for the same amount of work. Once there is more food consumed, some may cross the threshold and be satiated with food, and become interested in buying shirts. The result is that shirt prices are being pushed up. This creates incentives for firms to expand production and attract more labor to deliver this increased production. Higher demand for labor will require increasing nominal wages. Rural wages will move up as well, while food prices will go down somewhat, due to the higher production and shift to shirts by some previously poor consumers. In equilibrium, labor will have moved out of agriculture into shirt production, and higher equilibrium real wages will imply a reduction in poverty.

The contrasting results are striking and lead to the conclusion that, in a closed economy, growth in agriculture may well be essential for poverty reduction, while industrial progress has no impact. The presence of demand linkages is the key factor, but, for poverty reduction, the relevant linkages are only via commodities consumed by the poor. Mellor has long emphasized this process as well (1999). But there is a difference here: the issue is not just growth linkages but also the link with poverty. Agriculture is then the central engine for poverty-reducing growth.

The results are nevertheless strongly affected by the assumptions about openness. In an open economy, the central demand and supply constraints do not matter anymore for traded commodities. Basic food staples can typically be imported, while shirts can be exported. Therefore, assume that both goods are tradable goods, so that only world prices matter.

We can now revisit both cases. First, consider the impact of industrial progress. More shirts are being produced for the same labor input, but prices of shirts remain the same, as world prices are not affected. Firms have an incentive to expand production, so the demand for labor and nominal wages will increase. Even though food supply goes down, in this case workers can move since food imports can go up. So the marginal product of labor goes up in agriculture as well, allowing rural and urban wages to increase in nominal and real terms. Food imports with higher real wages will mean that more food is being consumed and that some workers will start consuming shirts. The result is that poverty declines. Second, the impact of agricultural technological progress is now very similar to industrial progress. The demand linkages are not crucial anymore for the link between real wages and output, and real wages increase with more people buying shirts than before.

To put it simply, poverty reduction can then be achieved by any source of increased domestic competitiveness relative to the rest of the world, a

fundamentally different result to the case of a closed economy. It also creates other vulnerabilities: one's trading partner's productivity growth and any loss of relative competitiveness ("dynamic comparative advantage") could have negative implications in terms of poverty (that is, it has the effects of industrial or agricultural decline). Keeping up, or more generally being able to grow faster in productivity terms than your trading partners, is essential. Eswaran and Kotwal, writing near the time of the first moves towards openness in the early 1990s, argue strongly that the evidence is supportive of much potential for India in this respect, especially in growth via technological progress in industry, and that an open trade model could assist poverty reduction, even if direct progress in agriculture and the rural sector remained limited. At the same time, technological progress in agriculture has a useful role to play.

Even though the analysis may seem relatively simple, it helps to illustrate some central insights. First, in any scenario, the defining feature of poverty alleviation appears to be linked to the gradual absorption of labor by the non-agricultural sector. There is nothing specific about rural poverty, beyond that it is typically a sign of slow growth. But it goes beyond this: it may also be a sign of the "wrong" growth forces. Second, to understand the role of the agricultural sector in poverty alleviation, it is important to take into account openness. If the economy is closed, the pattern of growth is crucially important for poverty alleviation. In particular, agricultural growth can then deliver poverty reduction and, given demand linkages, more straightforwardly than industrial progress. In an open economy this is not necessarily the case. Indeed, the emerging context of globalization changes the dynamic of our understanding of the role of agriculture: it offers more opportunities even though its pitfalls and risks will also need to be properly understood.<sup>10</sup> Third, introducing more heterogeneity in labor, production technology, and sectors does not change the underlying logic (Eswaran and Kotwal 1993a). However, if technological progress is not "neutral" or labor intensive, but instead is less labor intensive, then the model would predict a far lower impact on poverty reduction, since labor demand and real wage increases would be more limited. Eswaran and Kotwal (2002) extended the model further with the introduction of a service sector and non-tradable goods—the interactions are more subtle but not undermining the main insights.

What does this imply for the importance of agricultural growth? In general, it could play a useful role: in many contexts it may be a most suitable mechanism for poverty reduction. However, one should be careful. Technological progress in agriculture can be thought of as involving the discrete adoption of new inputs, such as new varieties, fertilizers, or pesticides. It involves some unpleasant arithmetic: much progress in agriculture itself is a "once and for all" change. For example, fertilizer adoption may well add about 20 percent higher returns to particular crops, but this does not in itself lead to a persistent year-on-year growth in

yields. Any growth effect will largely depend on the presence of very substantial linkages. Some have argued that these linkages are very large in developing countries (for example Mellor 1999), although, as has been argued before, this is largely based on evidence from particular countries using particular methodologies, such as computable general equilibrium models, which are dependent on strong behavioral assumptions.

The available evidence on India is nevertheless illuminating in this respect, though without being conclusive. Datt and Ravallion (1998, 2002) and Ravallion and Datt (1996, 2002) discussed the growth and poverty alleviation experience of India, based on state-level averages, using data up to 1994, that is largely before the gradual opening of the Indian economy, even though overall growth had picked up during the second half of the 1980s. In other words, India could be thought of as a relatively closed economy. A first key finding from this work is that, based on studying the sectoral composition of growth and poverty, agricultural growth appears to have been able to deliver substantial poverty reduction, while manufacturing growth did not do so in itself. Clearly, this is a result directly predicted by the earlier model. Unpacking this evidence showed that yield increases in agriculture had indeed a strong impact on poverty.

A second finding is that poverty decreases were strongly influenced by particular (state-specific) "initial conditions." One way of interpreting this is in terms of linkages: a higher level of a particular characteristic, such as the state of technological progress, delivers, other things being equal, higher year-on-year growth when its impact works itself through the economy in a self-reinforcing way. The evidence suggests that the key initial conditions were higher health and education (presumably correlated with underlying productivity of the workers) and better initial conditions in rural areas (including less landlessness and higher initial yields, reflecting better technology). This evidence is clearly consistent with the higher poverty impact from factors increasing the productivity of workers in general, but with a clear role for channeling these growth factors through the rural sector. This is consistent with what was predicted in a closed economy, without necessarily proving that the model is a fully correct representation of the situation.

The opening of the Indian economy and its reasonable success in terms of engaging in the world economy has removed the fundamental demand linkage constraint suggested in the Eswaran and Kotwal model. The sectoral location of productivity growth is becoming less relevant for poverty reduction, provided it is labor intensive or neutral. The substantial investment in technological progress in other sectors in recent years has opened opportunities for poverty reduction, even though it is likely that the main poverty reducing effects from some of these high-tech service industry investments is likely to have to come from growth linkages toward more low-skill sectors such as construction.

## *Relevance for Africa?*

Are these results relevant for Sub-Saharan Africa? In the Eswaran and Kotwal model, if growth is driven by agricultural growth that is technologically neutral or labor intensive, then the scope for poverty reduction will be larger. Land is typically not highly unequally distributed in most African countries, where there is relatively low landlessness and where, in some countries, such as Ethiopia, there is a remarkably equal land distribution. Productivity increases will reward the poorer farmers as well, so that growth may have substantial poverty impacts. The changing circumstances in African agriculture, in terms of allowing many factor and product markets to work more freely, especially in terms of removing much of the urban bias, has improved the opportunities for this process to materialize. A “green revolution for Africa” may have substantial returns.

However, the *necessity* of agricultural growth to deliver both growth and poverty reduction is not so clear-cut. As in the model, opening up the economy has removed the crucial dependence on progress in agriculture for delivering poverty reduction as the crucial demand linkage with agriculture is removed: growth in other sectors, provided it is labor intensive, can similarly promote poverty reduction.<sup>12</sup> To assess the case for the crucial role of agricultural growth, the growth opportunities for Africa have to be considered.

Recent work by Ndulu and others (2008) provides the foundation for a suggestive three-way description of the growth opportunities of Sub-African countries; a similar description is used in Collier (2007). These researchers make distinctions in terms of growth opportunities: first, there are resource-rich economies; second, there are coastal and other well-located countries; third, there are land-locked economies without natural resources. Each of these groups has very different problems at their core when trying to boost growth and to reduce poverty.

For resource-rich economies, the key issue is to manage wealth: how to translate the underlying wealth controlled by the nation into the basis for sustainable and shared prosperity. The key problems they tend to face are Dutch disease and governance problems, and they are more likely to be ravaged by violent conflict—think Nigeria, Angola, or Congo.

For coastal and other well-located countries the challenge is very different. They have no natural resources, and so no immediate source of wealth. Wealth needs to be generated. They have two production factors they can put to good use: they have people and they have their location to their advantage. Much of coastal Africa, not least Ghana, Côte d’Ivoire, Kenya, and South Africa, springs to mind. Their main challenge is how to take advantage of the opportunities offered by their location. They are countries that in principle should be able to take advantage of world trade opportunities, so their priorities are likely to have to include building up trade infrastructure, managing market institutions and

regulation, investing in skills, and supporting the formation of well-working labor markets. These are very different challenges, but globalization offers serious opportunities for them. Without working on their constraints, they are bound to be left behind; but the potential is there.

This leaves the landlocked, resource-poor economies without natural resources. They are suffering most from the agglomeration effects: they have little to offer, and they totally depend on their neighbors to overcome these effects. Matters are made worse if their better located or better endowed neighbors are mishandling their economies, or indeed if they are in conflict with these states. All these factors are creating further negative externalities. Examples are Burundi, Burkina Faso, and Ethiopia.

So when is agricultural growth essential? How does agricultural growth fit into this framework? First, take the resource-rich countries. Agriculture is unlikely to be an essential source of growth. Nevertheless, such an economy needs to find ways of diversifying and building up its productive capacity, and agriculture could play a role in this. In this context, the burden of agricultural growth to drive overall growth is not present, so that efforts for intensification or diversification can have a much more pro-poor bias. This could involve a focus on smallholder agriculture, for example by supporting new technologies and activities with higher labor productivity. But clearly, there are a variety of ways to encourage the distribution of the wealth of such a country, and it would be hard to argue that stimulating agricultural growth is essential. Moreover, investing in rural areas, including in basic services such as health, education, and infrastructure, could be an effective alternative form of redistribution, and it may have higher long-term returns in terms of transforming the economy than a narrow focus on agriculture. For example, there would be less of a burden to ensure that these investments were largely in high potential areas.

Second, consider the well-located economies, who are best placed to take advantage of world economic opportunities. Managing their comparative advantage, via labor markets, skills, regulation, and investment climate, is most essential. The role of agriculture is similar to the Eswaran and Kotwal model in an open economy: “industrial” progress is most likely the best route and a vehicle to take advantage of trade opportunities. The role of agriculture is then more subsidiary: it makes sense to encourage progress in agriculture as well, if only as a means of managing an exit from agriculture when trade-based growth takes off.<sup>11</sup> Skill creation via better health and education, also in the rural sector, is then most helpful as well, if only since it will facilitate the development of better skilled labor that can in due course be absorbed. The experience of Indonesia in the late 1970s and 1980s is rather reminiscent of this, with active rural policies but which ultimately led to more absorption in the urban economy. For African economies, the key challenge is to overcome their relative marginalization in the world

economy, as latecomers are put at a disadvantage when competing with countries that have already an established industrial base, such as many Asian economies. This may require specific support for manufacturing industrial development for this potential to materialize (Collier and Venables 2007), but this is still the best route for growth.

The landlocked, resource-poor countries are a rather different problem. In many cases—think of Ethiopia or Burkina Faso—the agricultural base is at best highly vulnerable. But their risk of total marginalization relative to the world economy is also highest. They are mainly dependent on the ability of their better located neighbors to pull them into trade-oriented opportunities, often involving migrant labor. In terms of active policies, the opportunities are limited: infrastructure and skill creation are sensible, but as locations for investment they are likely to remain down the pecking order for a long time, not least because many of their better located neighbors are still only barely integrating with the world economy at present. As a consequence, the best way to think of these economies is as if they were effectively closed economies, irrespective of active trade liberalization. As the model predicted, agricultural growth is then essential for both growth and poverty reduction—but don't expect any miracles.

Technological progress in agriculture has to be actively pursued, as well as other measures to raise rural productivities as the main way of delivering growth that also has clear poverty-reducing impacts. Rural and agricultural development is likely to be hardest here, as they are often agriculturally more vulnerable areas, but it is here where it has to be attempted with most vigor. In order to achieve poverty reduction, there are also likely to be important trade-offs between stimulating agriculture in the high potential areas (as likely to be required for growth) and promoting it in more marginal areas where poverty may be highest. With commodity prices high, as in recent years, this tension between growth and poverty is even more present, as promoting overall agricultural output becomes even more crucial.

The contrast between, say Ethiopia and India, is striking here. Ethiopia may have been trying to open up in recent years, but its neighbors that are better located have not been taking advantage of trade opportunities, and in general its relations with them are at best frosty (such as is the case with Somalia and Eritrea). This limits its options dramatically. At best it can create a basic infrastructure and create skills, but growth is likely to have to come via agriculture to encourage any systematic and persistent decline in rural poverty. Its population cannot take advantage of growth opportunities in neighboring countries for the purposes of trade or even of migration.

India has pockets and even states that face similar constraints on local natural resources, and other problems, as does Ethiopia (for example, Bihar). But its economy is broadly integrated, and with some states taking advantage of its

increased openness and location, growth externalities and employment opportunities provide options for these lagging states to at least take partial advantage of the overall change, with some beneficial impacts on local poverty reduction.

But even so, Ethiopia cannot expect miracles from a strategy of focusing on agriculture alone. Its relatively landlocked nature as well as its dependence on rainfall implies that some (unexpectedly) good harvests can push down temporarily food prices received by farmers to extremely low levels as export parity prices (the world price minus transactions costs to supply the world market from the farm) are bound to be low. In 2001/02 for example, after a brief period of yield increases and area expansion, good weather contributed to a bumper harvest for maize, but prices were pushed to levels at which farmers found it not profitable to harvest. Such events undermine agricultural transformation, making it imperative that demand growth takes place to avoid prices to collapse occasionally in such landlocked economies with high transactions costs.

## Market Failures and Poverty Traps?

The previous section focused on a macro- or general equilibrium narrative on the role of agricultural and rural development in growth and poverty reduction. Changing contexts, not least that of increased openness of developing countries and the move toward more market-based economies, changes the role of agriculture and rural development in growth and poverty reduction, one reason being that urban–rural and sectoral interactions have to be properly integrated in the analysis. However, this analysis was conducted using the assumption of well-functioning factor and product markets. As much of the rural development research in recent decades has highlighted, market failures are prevalent, even despite the removal of many policy-induced market imperfections, such as in agricultural product markets.<sup>12</sup> Resources are then not allocated efficiently until marginal returns to different factors of production are equalized. Factor markets, including those for labor, serve different people differently, resulting in heterogeneity in the extent to which people with different initial circumstances can take advantage of opportunities, such as those offered by growth. Rural non-market institutions may have developed partially to substitute or compensate for market failures, but not completely. This has important implications, not just for the extent of growth that can be achieved, but most importantly, for our purposes, for the extent to which the poor can partake in growth. While the underlying taxonomy of general growth opportunities in different parts of Sub-Saharan Africa, which was developed in the previous section, is unlikely to be fundamentally affected, the ability of these growth narratives, to deliver poverty reduction and broad inclusion in the growth process, definitely is.

In this section, I will try to put some of the key lessons from the extensive microlevel research on rural households and institutions from the last few decades into the broader context of poverty reduction and growth. The key question is: What do we know about the key constraints of the rural poor to participate in or contribute to growth? Much of the recent academic literature on rural issues has explored many of these market failures in factor markets, such as land, labor, credit, and insurance. This typically forms the core of much of the teaching offered in graduate schools in the microeconomics of development.<sup>13</sup> However, the key issue for our purposes is to explore how microlevel issues can be put into the bigger picture of growth and poverty reduction.

Following this I will consider the question of what would cause some poor people to remain locked in rural poverty, even in those countries that manage to start growth processes that are intensive in terms of labor. Furthermore, for countries that are absolutely dependent on rural development efforts for poverty reduction via growth, such as landlocked, resource-poor countries with “poor” neighbors, the need to unlock rural potential means that we should be especially careful when examining what may cause growth in particular rural areas to lag behind. I will focus on three instances that illustrate a more general principle and finding in recent theoretical work, one suggested by empirical evidence: that initial poverty and market failures conspire to keep some poor people persistently poor or even in a poverty trap. In addition, I will focus on three problems linked to market failures which may induce the following processes: access to capital (credit market failure); risk (insurance market failure); and spatial externalities (the curse of geography).

### *Credit Market Failure and Poverty Traps*

The most obviously observable market failure is that of credit markets to conform to the assumptions of perfectly competitive markets. Under perfect and complete markets, anyone with a profitable project should be able to get a loan at the current interest rate. If markets were perfect and efficient, no bank would ask for collateral to secure the loan.<sup>14</sup> In practice, without collateral, one typically would not get the loan. Collateral requirements can be understood as an important means by which credit markets handle the central problems that bedevil these markets: asymmetric information, such as moral hazard and adverse selection, and enforcement problems. Since imperfect information means that borrowers may not be able to know which projects are more risky among many risky projects, or whether lenders will implement other actions than initially committed to after the loans have been granted, collateral may be asked for to secure the loans. Collateral may also help to enforce the repayment of loans.



Starting from initial asset poverty for some, it is obvious that this may be a market failure that is particularly hurtful for the poor, by excluding them from profitable opportunities. A number of careful, suggestive models, most notably Eswaran and Kotwal (1986), show the key implications of this: the rich do not just earn more income because they have more assets, but they can also use assets more efficiently. Market failures force some of the poor to be inefficient, and they exacerbate any initial inequality—some of the poor may stay behind. There is much suggestive evidence that similar processes are common in agricultural settings, where they are often linked to credit market failures. A key prediction of this model is that the marginal return to bringing more land into production by the poor outweighs that of the rich, and that average output per hectare is larger for the poor than for the rich. This negative correlation between cultivated land area and output per hectare is commonly observed in developing countries. Binswanger and others (1995) provided a comprehensive overview of the evidence and looked into different explanations. Land quality heterogeneity is certainly part of the story, but factor market failures, including those related to credit, are likely to be relevant as well.

The model described is effectively a static model—but its potential dynamic implications are intuitively appealing. Starting from some inequality in assets, those with more wealth earn higher returns and plausibly can accumulate at a high rate, while the poor enter into technology or activity portfolios with lower returns and may not be able to start accumulating any wealth. This intuition is at the basis of a number of growth models leading to poverty traps for some and accumulation for others. Banerjee and Newman (1993) showed the adverse impact of asset inequality on growth, linked to credit market failures. When threshold levels of assets are needed to enter into different activities, then entry into profitable activities is closed off for those with limited assets, and they are trapped in poverty, while others can climb the occupational ladder. A poverty trap is an equilibrium outcome and a situation from which one cannot emerge without outside help, for example via a positive windfall to this group, such as by redistribution or aid, or via a fundamental change in the functioning of markets. Much other work suggests poverty traps and overall efficiency and growth losses, due to poverty and inequality combined with credit market failure, where some people are unable to exploit growth-promoting opportunities for investment (for example Galor and Zeira 1993; Bénabou 1996; Aghion and Bolton 1997). This model of credit market failure is also a central part of the narrative underlying the 2006 *World Development Report* (World Bank 2005a); it discusses also some suggestive evidence of its implications.

If poverty traps induced by the credit market are present in rural areas, or more generally, underinvestment is present, limiting growth. Furthermore, if growth picks up but access to profitable opportunities requires some minimal

investment (for example being able to invest in the migration of some household members, or sunk costs for a newly profitable activity), then credit market failures may result in the exclusion of some of the poor from the benefits of growth. Proving the existence of credit-induced poverty traps is difficult, but there is definitely evidence in rural Africa of entry costs (in particular activities) and assets (in the presence of limited access to investment capital) leading to poorer households holding less profitable portfolios (Dercon 1998; Barrett and others 2005).

What to do about them is less clear. Credit market interventions have long been a favored intervention, in recent times mainly via microfinance schemes, although other interventions may well be better and more useful for resolving credit market failures (Besley 1994). It is not altogether clear that the poorest are benefiting most from microfinance (Amendatriz de Aghion and Morduch 2005); more needs to be learned from careful evaluations of specific products that could have the highest impact (Karlan and Goldberg 2006). For Africa, the key question is also whether microcredit is not overrated as a means to fostering inclusion of the rural poor in the economy: often, if applied to rural settings, it is seen as a means of helping to get the rural poor into off-farm business activities, usually with restrictions on the eligible activities, via the support offered by the microfinance institution. Even though credit market restrictions may exclude them from certain profitable opportunities, it is unlikely to be the case that large scale poverty reduction is going to be achieved by making more and more people dependent on entrepreneurial activities. In most economies, the transformation toward a higher income and low poverty economy has been achieved by an increase in wage employment, via higher labor demand, with farmers becoming employees in industry and the service sector. It is likely that in the long run, the highest returns are to be obtained from health, education, and skills, not least in African economies that are resource rich or whose potential is in manufacturing exports. Of course, the transition is likely to be helped by allowing some people to take advantage of entrepreneurial opportunities in agriculture and the non-farm sector, but it is unlikely to be a large-scale successful route.

There is a dilemma here as well: as long as growth is not taking off, the poor are likely to be helped more by encouraging entrepreneurial activities, as labor demand is not picking up. In most African contexts, returns to education are convex: low for primary and, possibly, high for higher levels of education (Söderbom and others 2006), so that investing in education under the circumstances of the 1980s and 1990s, with low wage-labor demand, is unlikely to offer rapid routes out of poverty; though if growth were to pick up in a sustained way, this could change. Failing that, microcredit schemes could offer a solution for many of the poor, but without growth it does not offer real scope for large-scale poverty reduction. In any case, and at best, microcredit schemes with more flexibility, that do not try to tie people to particular entrepreneurial activities, but that

respond to the general financing needs of families, may be more effective (Karlan and Mullainathan 2007).

### *Insurance Market Failures and Risk-induced Poverty Traps*

Another serious market failure impacting disproportionately on the poor is the lack of insurance and protection of the poor in the face of risk. The existence of complete insurance markets (or, to be technically more accurate, complete state-contingent markets) is another assumption for perfect markets that tends to be violated in practice. Problems with asymmetric information and enforcement issues, not dissimilar to those causing credit market failures, are again typically responsible for the limited spread of insurance mechanisms in developing countries. Even if they wanted to, the poor could not get any insurance for most of the risks they face.

Uninsured risk causes considerable hardship to the poor. Developing countries are still characterized by a high incidence of natural disasters, drought, conflict, and insecurity, as well as economic shocks, such as commodity price shocks and currency shocks. Health problems are widespread, as are pests in agriculture. It is commonplace to view these as “transitory” problems, requiring temporary solutions, such as some form of safety net, after which one should get back to the bigger issues of development. For the policymaker it also often means that it is just a social issue that should not distract the key (macroeconomic) policymakers from the bigger issue of how to stimulate growth in the economy and alleviate widespread poverty. However, this is misleading. There is increasing evidence that risk and shocks are a cause of lower growth, which results especially in the lower growth of the incomes of the poor and possibly in poverty traps. Focusing attention on the poor could then again be contributing to both growth and equity; in any case, it could be instrumental in ensuring that the poor can benefit from emerging growth.

Households in developing countries have developed sophisticated mechanisms to cope with risk. Typically, one could consider two types of responses: risk-management strategies and risk-coping strategies. Risk-management strategies involve trying to shape the risks faced by entering into activity portfolios that are more favorable in terms of risks. For example, entering into low risk activities or diversifying into portfolios of activities with differing risk profiles—growing more drought resistant crops, entering into petty trading or firewood collection, seasonal migration, and so on. Risk-coping strategies involve activities for coping with consequences of risk in income. Two types are commonly observed: self-insurance using savings, often in the form of cattle or small ruminants, to be sold off when the need arises; and informal mutual support mechanisms, where members of group or community provide transfers to each other in times of need, typically on a reciprocal basis (Fafchamps 1992).

These strategies are not without cost: income risk-management strategies result in a reduction in mean income and a variability in income, while adjusting asset portfolios to cope with risk typically involves investing in liquid assets with lower returns, rather than in productive illiquid investment. This affects their long-term income and their ability to move out of poverty. Indeed, there is growing evidence that these strategies imply substantial efficiency loss for the poor, which the rich—typically better protected via insurance, asset, and credit—do not have to endure (Dercon 2002). Morduch (1995) documented how more profitable technologies are not adopted because they are too risky in a particular setting in India. The same farmers have been found to hold livestock as a precaution against risk even when more productive investment opportunities exist (Rosenzweig and Wolpin 1993). Rosenzweig and Binswanger (1993) found that the loss in efficiency between the richest and poorest quintiles in their sample from India was more than 25 percent, attributable to portfolio adjustments in assets and activities due to risk exposure. In Ethiopia, Dercon and Christiaensen (2007) have found that modern input adoption is lowered due to the downside risk related to input loans, whose repayment is strictly enforced, even when rains and harvests fail. Over time, this results in substantial efficiency losses, which affect the poor disproportionately.

These risk-management strategies may trap the poor in poverty: to avoid further destitution, they are forced to forgo profitable but risky opportunities, and with it the opportunity to move out of poverty.<sup>15</sup> Even so, they cannot fully protect themselves: there is much evidence that although the strategies contribute to less variability in consumption and nutritional levels, they are still not able to cope with some serious, repeated shocks, not least those affecting whole communities, regions, or countries (Morduch 1999; Dercon 2002). These uninsured shocks typically wipe out assets, pushing the households down the asset distribution. They could be pushed below some critical threshold, trapping them into poverty from then on, for example due to the risk strategies they then need to follow to avoid further destitution, or due to other processes.

There is growing evidence that these processes are an important cause of poverty persistence and possibly permanent traps in developing countries. Jalan and Ravallion (2003) investigated the presence of poverty traps using data from China, and, although they did not find a pure poverty trap, they found that households took several years to recover from a single income shock, and that the recovery was much slower for the poor. There is also related evidence from Africa. Dercon (2004), using panel data from rural Ethiopia, found signs of poverty persistence linked to uninsured shocks, with the impact of rainfall for up to the previous four years affecting current growth rates, and the extent to which households had suffered in the famine of 1984–85 still an explanatory factor in growth rates in the 1990s. Furthermore, it took on average 10 years for livestock

holdings, a key form of savings in rural Ethiopia, to recover to the levels seen before the 1984–85 famine. In a careful study, Elbers and others (2007) use simulation-based econometric methods to calibrate a growth model that explicitly accounts for risk and risk responses applied to panel data from rural Zimbabwe. They found that risk substantially reduces growth, reducing the capital stock (in the steady state) by more than 40 percent. Two-thirds of this loss is due to *ex ante* strategies by which households try to minimize the impact of risk. Barrett (2005) has found suggestive evidence on poverty traps by looking at the livestock holdings of pastoralists in Kenya.

There is also increasing evidence of the long-term implications of uninsured shocks, focusing on health and education. For example, the permanent impact of drought on children is well documented—lower adult height, poor education outcomes, and therefore lower lifetime earnings. For example, the impact of drought and war in rural Zimbabwe in the early 1980s on a particularly vulnerable cohort of children was estimated at 7–12 percent of lifetime earnings or more (on this and other evidence, see Dercon and Hoddinott 2003).

All this evidence points to the important consequences of lack of insurance and protection in rural settings in developing countries, particularly as they affect the poor. Given that the root cause is again a market failure, exacerbated by poverty, there is a clear case for interventions that are potentially both poverty reducing and stimulating of efficiency and growth; in any case, they could ensure that the poor can more effectively take part in growth processes. In industrialized countries, not least in Europe, the failings of the insurance markets are largely resolved via some form of universal social insurance and substantial direct means-tested transfers. For developing countries, this is not likely to be cost-effective, involving high administrative costs and high informational requirements. To put it simply, the means for such systems are unlikely to be available.

Many responses can be considered, such as reducing the risks faced by rural households (for example by preventative health services, or better water management for agriculture), strengthening existing responses (such as investing in a better provision of savings products, or better functioning assets markets, such as that for live animals), and improving forms of insurance and broader social protection in the form of safety nets. While each have their problems and advantages, in recent years a number of specifically interesting initiatives have been taken with respect to insurance, even if their potential benefits are not quite substantiated yet.<sup>16</sup>

### *Spatial Effects*

Another common cause for market failure is the presence of spatial externalities. Externalities are said to be present if economic or other interactions create social

gains or costs beyond those taken into account by those involved in the interaction. The standard example is environmental damage from production involving pollution not accounted for by the buyers and sellers of the commodity produced. A more general phenomenon in developing countries, that can be best understood in terms of externalities, involves geographically defined areas that appear to stay behind—poor neighborhoods, or even poor regions or countries. If one looks at the performance of the developing world, it has been striking over recent decades that some countries—largely in Africa—appear to have become increasingly marginalized, with low economic growth, persistent population growth, and, generally, persistent poverty. Less studied but at least as important is that even in countries where growth is high, there appears to be areas that systematically stay behind and do not benefit from the overall economic growth in terms of income growth and poverty reduction. Certain regions in China and India may well fit this bill. Much less documented but no less true, the geographical disparity in growth and poverty-reduction performance within African countries is similarly present.<sup>17</sup>

Such disparity may well be explained in terms of theories emphasizing agglomeration or location effects, predicting that firms will exploit increasing returns resulting from the presence of externalities to locating in the same geographical areas, implying that firms would locate in clusters (Fujita and others 1999). The corollary is that some less attractive locations may have missed the boat: not only would they not get the required investment, any capital present may well move out to capture the higher returns elsewhere. For those areas that missed the boat, there is a negative externality from the success of other areas. Clearly, this is a form of poverty trap: although initially these areas may not have been very different, once they missed the boat they can only escape by a serious exogenous shock or massive effort. They face a substantial threshold that they need to overcome to attract or retain capital for accumulation.

Other explanations similarly emphasize externalities related to the specific local context, for example low local endowments in terms of public goods, common property resources, and private asset holdings. If growth processes require a certain threshold of local endowments to take off, then poorly endowed areas may well find it hard to escape poverty. Proving this is difficult. There is some evidence for China and a few other countries.<sup>18</sup> For Africa, the role and effects of remoteness on growth and poverty in Africa are well discussed in Christiaensen and others (2005), with evidence from a number of countries.

Recall that these externalities are again market failures that specifically affect those at the lower end of the asset distribution—this time with assets broadly defined to include public and environmental goods. Given that poverty traps are identified, this empirical evidence would justify “poor areas” programs—massive investment programs in particular deprived areas to build up locational and community capital.

However, these empirical studies lack sufficient detail and a clear narrative about how these externalities come about. More evidence would be needed to guide and prioritize the type of interventions that would be most beneficial.

For example, most rural “poor areas” typically are characterized by remoteness—often linked to the lack of roads and communications infrastructure. One of the most common donor-policy responses is to build roads into poor areas. While undoubtedly bringing some benefits to remote communities, it is not necessarily the case that this is what is needed to unlock the growth potential of an area. In some countries, there is evidence that this may well be an appropriate response.<sup>19</sup> Still, historically much road building in developing countries has been in response to local economic growth or at least in recognition of some growth potential (such as cash crops or mining), and it was not the main cause of growth. Alternatives, such as irrigation, health, or educational schemes may be more important for unlocking their potential.

In any case, just doing a little is not going to help—in order for such areas to catch up, substantial levels of investment would be needed to lift them over the threshold. It may well be the case that creating opportunities for migration is a superior policy. This, however, also involves costs, and so may be difficult too. If these thresholds are substantial, then growth opportunities elsewhere may simply bypass many rural poor. But it is nevertheless the prime example of a potential rural poverty trap for which solutions have to be firmly considered in the context of rural–urban and other linkages, and a narrow focus on rural areas may be ineffective.

## Conclusions

Contrary to most of the rest of the developing world, poverty levels have remained stagnant in Sub-Saharan Africa in the last few decades, in a context of slow growth. As most of the poor are living in rural areas, it may be concluded that agricultural growth and rural development policies have to be at the core of growth and poverty-reduction policies.

In this paper, I have used a “macro-” (intersectoral) and microperspective to discuss some of the key concerns and issues involved in an African context. Using a framework based on Eswaran and Kotwal (1993b), and evidence on growth opportunities in Africa based on Ndulu and others (2008), I conclude that agricultural growth is likely to be essential for landlocked and resource-poor economies in Africa, even though growth via agriculture is likely to be difficult. In other economies, in particular those with good locations for engagement into manufacturing exports, or resource-rich economies, agriculture is not the crucial constraint. Even if rural development policies are likely to be crucial for allowing

the gradual transformation of the economy, the pressure for agricultural growth to be an engine of growth is not present.

This analysis is however based on well-functioning factor and product markets, allowing specifically the poor to take advantage of opportunities irrespective of their endowments. Perfect markets in rural settings are not the appropriate assumption. There is considerable evidence that this implies that the poor may remain excluded of profitable opportunities to grow out of poverty, even if growth has picked up in the economy, potentially leading to poverty traps. Rural development policies targeted on the poor, and possibly including the stimulating of agricultural production by poor farmers, may then be part of the effort to make growth more inclusive. The mechanisms by which this exclusion may happen are well understood, and I have discussed credit and insurance market failures, as well as spatial effects in the form of “poor areas.” The evidence on the appropriate responses is still only emerging, and clearly more experimentation and research is needed.

## Notes

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1. This estimate is based on a poverty line of \$1.08 a day in 1993 PPP, applied with a rural–urban correction based on cost-of-living differences between rural and urban areas.
2. As the definition of what constitutes an urban area is not standardized across the world’s statistical offices, some caution is needed with these statements.
3. East Asia includes here the Pacific. Data from the World Development Indicators for 1990–2000 suggest 8.5 percent overall growth in East Asia and Pacific and 5.6 percent growth in South Asia, with respectively 3.4 and 3.1 percent growth in agricultural GDP. Growth rates post-2000 are not dissimilar, although overall growth in Sub-Saharan Africa appears to have picked up somewhat.
4. In the analysis of the World Development Report, the authors refer to agricultural-based economies as those with high shares of GDP and labor in agriculture. The geographical composition of this group in their report is such that 82 percent of the Sub-Saharan African rural population is in this group and that the share of Africans in the total population of this group is about 90 percent. In short, their analysis and prescriptions for agriculture-based countries are effectively about Africa.
5. The *World Development Report 2008* argues in this respect that rural investment did take place in Korea, but much earlier, in the first part of the 20th century.
6. Further ‘classic’ treatments are in Ranis and Fei (1964) and Jorgenson (1961).
7. For an excellent exposition of the Lewis model, see Ray (1998).
8. This assumption concerning perfect factor markets is crucial and will be challenged in the next section, qualifying some of the results in this section. Although offering a rather different



model from the one discussed here, Jorgensen (1961) can be seen as a predecessor, as he also brought in neoclassical market clearing assumptions and issues related to food consumption as a way of characterizing his 'dual economy' model. Ranis and Fei (1964) can be credited with offering some of the general equilibrium analysis presented in EW as well, including the impact of trade, although they used a dual economy setting rather than competitive factor markets.

9. This assumption can be questioned. However, as one purpose of this framework is to explain why in some contexts, it may not be crucial to focus on agriculture to get growth and poverty reduction, this assumption actually biases our arguments in favor of a focus on agriculture, as surplus labor implies that labor can be taken out of agriculture into the urban sector without any impact on total food supply.

10. The current high agricultural commodity prices across the world offer such an opportunity for agriculture, although the long-run level of incentives offered is harder to predict.

11. Of course, high-value agricultural activities, such as flowers, fruits, or vegetables in Kenya, are also effective means for taking advantage of locational and other advantages. Air transport is a (possibly increasingly) expensive means of transporting exports, making location sufficiently near to ports a continuing necessity for a trade-oriented growth model; which is not a straightforward option for landlocked countries such as Ethiopia.

12. This type of research is carefully discussed in detail in Bardhan and Udry (1999) and Mookherjee and Ray (2001).

13. Ray (1998) provides an excellent entry point to this literature.

14. In this discussion, I use the issue of collateral as a heuristic device to show the differential impact on the poor of credit market failures, without arguing that this is necessarily the key failure. Most other failures in credit markets can be shown to result in a specific disadvantage for poorer households. A useful discussion of different market failures in rural credit markets (and what to do about it) is in Besley (1994) and in Ray (1998).

15. See Banerjee (2003) for a formal poverty-trap model building on this idea.

16. For a helpful review of targeted transfers and safety nets, see Ravallion (2003). For a review of a broad set of means of offering "insurance" to the poor, see Dercon (2003) and the contributions therein. Of particular interest are initiatives to offer rainfall insurance, including in Africa, where even initial evaluations are yielding surprising results (Gine and Yang 2007).

17. For a review, see Kanbur and Venables (2005). Lack of convergence between rural and urban areas in a number of wealth indicators across 12 African countries is found in Sahn and Stifel (2003).

18. Jalan and Ravallion (2002) identified geographic poverty traps in rural China during the 1980s, finding that community characteristics affect the income growth performance of otherwise identical individuals, controlling for latent heterogeneity. These results show that in some areas living standards were falling while elsewhere *otherwise identical households* were enjoying rising living standards, an effect entirely due to externalities from the initial community characteristics.

19. Jalan and Ravallion (2002) presented evidence for China that roads are relevant for growth. Microdata from Ethiopia using a much smaller sample suggest similar effects, that is growth effects from levels of infrastructure (Dercon 2004).

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