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A STRATEGIC FRAMEWORK FOR STRENGTHENING RURAL INCOMES IN DEVELOPING COUNTRIES

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A STRATEGIC FRAMEWORK FOR STRENGTHENING RURAL INCOMES IN DEVELOPING COUNTRIES

1. Introduction

1. This paper motivates and proposes a strategic framework for policies to strengthen rural incomes in developing countries, and then discusses the role of different policy instruments within that framework. Raising rural incomes is central to the near-term target of the first Millennium Development Goal (MDG1), which calls for the eradication of extreme poverty and hunger, with specific targets that include halving between 1990 and 2015 the proportion of people living on less than a dollar a day. Income growth is essential for sustained poverty reduction in developing countries, although the distribution of income (and income growth) matters too. And while food security has many facets, most of the world's hungry are chronically hungry and they are chronically hungry because they are poor. Thus, higher incomes are needed in order to meet both poverty and hunger targets.

2. The world as a whole may achieve MDG1, thanks primarily to rapid income growth in East Asia (and China in particular). But in many parts of the world, progress has been weak or non-existent. Using a recently updated income benchmark of USD 1.25 per day, the World Bank estimates that the *number* of poor is actually increasing in Africa and South Asia (Chen and Ravallion, 2008). Between 1981 and 2005, the incidence of poverty in South Asia fell from almost 60% to 40%, but because of population growth that was not enough to bring down the numbers of poor. In Sub-Saharan Africa, the situation was even worse: the incidence of poverty was virtually unchanged between 1981 and 2005, at around 50%, which implied that the number of poor almost doubled from 214 million to over 390 million. By this measure, Africa's share of the world's poor increased from 11% in 1981 to 28% in 2005. Some modest signs of progress in recent years (since 2000) were arrested by the recent increase in world food prices, which the World Bank estimated was severe enough to throw another 100 million people into poverty (Ivanic and Martin, 2008). Prices have since fallen back, but remain considerably higher than they were in the first part of the decade.

3. If broader based progress on MDG1 is to be achieved, then average incomes will need to increase much more rapidly in the next few years than they have done in the past twenty. Given that three quarters of the world's dollar a day poor live in rural areas (corresponding to 880 million people), and most depend on agriculture for their livelihoods, there is a particular need for faster development of *rural* incomes. This in turn requires carefully thought out agricultural and rural development policies, and a specific consideration of what to do about smallholders, who form the backbone of developing country agriculture.

4. For the best part of 30 years, agriculture has been discriminated against by both national policy makers and donors. Developing countries showed an overall tendency to tax their farmers, both in terms of pricing policies (Anderson *et al.*, 2008) and through urban bias in the allocation of expenditures (Bezemer and Headey, 2008). Similarly, official development assistance to the sector declined in both absolute terms and as a proportion of total allocations, with a fall from USD 8 billion in 1980, equal to 17% of total aid, to a little over USD 3 billion in 2005, corresponding to a share of less than 4%. One reason for this "agro-scepticism" was low rates of perceived success compared with investments in other areas such as education and health (Easterly, 2008). Another was the combination of declining real agricultural prices and, in successfully developing economies, a falling share of agriculture in GDP and employment. These were interpreted by policy makers as signs of higher returns from investing in other sectors.

5. Timmer (2005) suggests that, in the poorest countries, such reasoning confused cause and effect. This is because agricultural investment was and is necessary to elicit the productivity gains that initiate the agricultural transformation (described later), which involves the release of resources from the sector and – when part of a balanced development strategy – their more productive allocation to other sectors. Hence, the relative "decline" of agriculture is a consequence of development success.

6. In recent years, policy thinking has come full circle. In the 1960s, policies centred on subsidies for seeds and fertiliser, and heavy investment in R&D and extension services, while in the 1970s, the emphasis shifted to integrated rural development (dealing with all the necessary inputs at once). These ideas were abandoned in favour of structural adjustment and "getting prices right" in the 1980s and 1990s (Adelman, 1999). Since the millennium, there has been a renewed focus on R&D, and in fixing market failures (specifically in input markets). The new thinking was reflected in the World Bank's 2008 *World Development Report*, which not only called for greater agricultural investment, but also advocated the use of "market smart" subsidies for seeds and fertiliser (*i.e.* targeted, time-bound subsidies that are operated through private markets).

7. The current paradigm, with faster agricultural and rural development seen as a pre-requisite for deeper economy-wide development, has been reflected in a range of commitments. In the case of Africa, for example, the African Union's 2003 Common African Agricultural Development Programme (CAADP) framework sets a target of 6% for agricultural growth, while under the 2003 Maputo Declaration its members are committed to allocate at least 10% of public expenditure to agriculture and rural development. On the donor side, the G8 pledged in 2008 to provide EUR 1 billion of support for investment in African agriculture, and in 2009 increased that commitment to EUR 15 billion over three years. At the Africa Fertiliser Summit in Abuja in 2006, African Union Member States resolved "to increase the level of use of fertilizer from the current average of 8 kilograms per hectare to an average of at least 50 kilograms per hectare by 2015".

8. The food price crisis of 2007-08 also triggered international commitments to allocate more money to agriculture. The World Food Programme appealed for additional funds and had received more than USD 1 billion by the end of 2008; the World Bank launched a Global Food Crisis Response Program in mid 2008; and the FAO presented an Initiative on Soaring Food Prices in June 2008 (Abbott, 2009). Bilateral donor countries also pledged additional resources to address problems in developing countries stemming from the food crisis (GDPRD, 2009). As food prices fell back, the legacy of the crisis drew attention to the deeper need for short, mid and long-term measures to tackle food insecurity and poverty. The UN High-Level Task Force on the Food Security Crisis advocated a two pronged approach, focusing on emergency relief and renewed efforts to invest in agricultural development, with a particular emphasis on supporting smallholder agriculture. With prices now lower (albeit still above average levels over the past ten years), the emphasis has shifted to the chronic lack of smallholder development, with strong support for "smart" subsidies for seed and fertiliser.

9. The purpose of this paper is to give consideration to what constitutes an effective strategy for boosting agricultural and rural incomes, and to discuss the appropriate role for agricultural policy with respect to that objective. Of course, income growth (and the related objectives of poverty reduction and improved food security) are not the only objectives in developing countries. Policies to improve incomes therefore need to be seen in the light of their impact on other objectives, such as sustainable resource use and improved gender equality. Furthermore, it is helpful to make a distinction between policies that can raise incomes in the short term, when economic structures are essentially fixed, and those that can facilitate a transition to economic structures that are capable of generating fundamentally higher incomes in the longer term. A fundamental thesis is that while there are some instruments that can be beneficial irrespective of the time horizon, there are nevertheless difficult trade-offs between short and long term priorities, and a strategic framework needs to acknowledge those trade-offs.

10. A key focus is on policies towards smallholders, who underpin the agricultural economies of poor countries, although consideration is also given to other agriculture-dependent households (such as wage earners). The term "smallholder" refers not to farm size *per se*, but to producers with limited resource endowments relative to other farmers in the sector. Smallholders may be efficient in the technical or allocative sense, but they often struggle to be competitive, either because of their lack of endowments, or because they confront missing or under-developed markets. Insufficient farm size may also be an issue, although other assets, such as farm management skills may also be lacking.[1] The competitiveness of smallholders may also be undermined by external factors, such as subsidised exports arriving on internal markets.

11. The structure of this section of the report is as follows. Section 2 describes the broad experience across countries of agricultural development and structural change, and discusses the factors that have driven those changes. This helps provide macro-level context on the evolving role of agriculture in the economy, and points to some principles that can help guide policy formulation. Section 3 contrasts those principles with actual agricultural policies and approaches to sectoral development. Section 4 proposes a strategic framework for strengthening rural incomes which seeks to reconcile the short run objective of poverty alleviation with the long-run aim of facilitating development. Section 5 presents some conclusions and identifies some specific priorities for analysis.

2. Economic development and the structural transformation

12. The process of economic development is characterised by three historical tendencies that are of relevance when considering the strategic options for smallholder development. These are the *sectoral* transition away from an economic structure based on agriculture to a more diversified one dominated by manufactures and services, the *spatial* tendency towards increased urbanisation, and an *institutional* transformation from an economy based largely on informal rules to one based on formal legislation (Jonasson, 2009). Other changes also accompany economic development, such as falling death rates and – with a lag – declining birth rates. In its 2008 *World Development Report*, the World Bank makes a useful distinction between agriculture-based, transforming and urbanised economies that captures the first two elements of this economic transformation.[2] Countries tend to move through these categories, although they may experience short cuts in the process, such as learning from policy experiences in developed economies, or take detours due to such factors as civil war, corrupt government or a misallocation of public resources. Moreover, the trajectory (and resulting composition of income growth) is not the same for each country, but will depend on the rate and composition of demand growth, as well as the sources and composition of productivity changes, which are partly determined by policies. There is also a strong element of historical path dependence, and the possibility that certain facets of the adjustment process may

1. It is important to note that what constitutes a small farm may differ markedly from one country to the next. For example, the average farm size in many Asian countries is less than a hectare, whereas much larger operations in Latin America (ten hectares or more) may be considered as small.

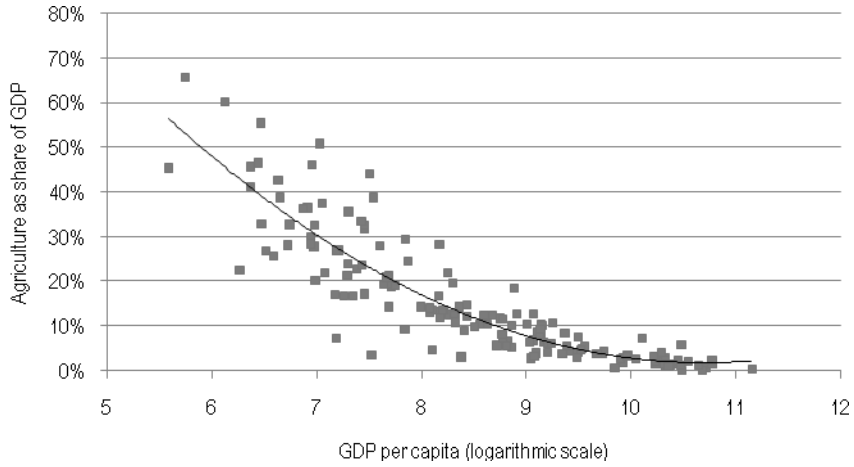
2. According to this classification, agriculture-based economies are those in which agriculture contributes 20% or more to overall economic growth; transforming economies are those in which agriculture contributes less than 20% to total growth yet 60% or more of the country's poor live in rural areas; while urbanised economies are those in which agriculture contributes less than 20% to overall growth and less than 60% of the poor live in rural areas. More than 80% of the rural poor in Sub-Saharan Africa live in agriculture-based countries, while over 90% of the poor in Asia, the Middle-East and North Africa live in transforming economies. A majority of Latin America's poor live in urbanised countries, although nearly one-half of the poor still live in rural areas. There are virtually no countries where agriculture contributes more than 20% to growth but in which the numbers of urban poor exceed the numbers of rural poor. Among developing countries, there is a strong correspondence between these three categories and three income classes for countries (low income, lower-middle income and upper-middle income) also specified by the World Bank.

be changing systemically over time. Before considering what drives these changes, and the appropriate role for government policy in shaping and responding to the structural transformation, we first describe in more detail the nature of adjustments that have occurred across countries, and take note of where different countries are now.

2.1. The sectoral transformation

13. The sectoral changes typically associated with economic development are evident from the relationship between agriculture's share of GDP and GDP per capita, which can be seen both from a cross section of countries at a given point in time as well as by looking at the evolution in individual countries over time. Figure 1 provides a scatter plot of these two indicators for 180 countries in 2005. For countries with a GDP per capita of USD 2 000 or less (approximately 7.5 on the logarithmic scale), it is still not uncommon for agriculture to constitute 30% or more of the economy. As per capita income rises above USD 10 000, practically no country has an agricultural sector that accounts for more than 10% of GDP.

Figure 1. Share of agriculture in GDP and per-capita GDP

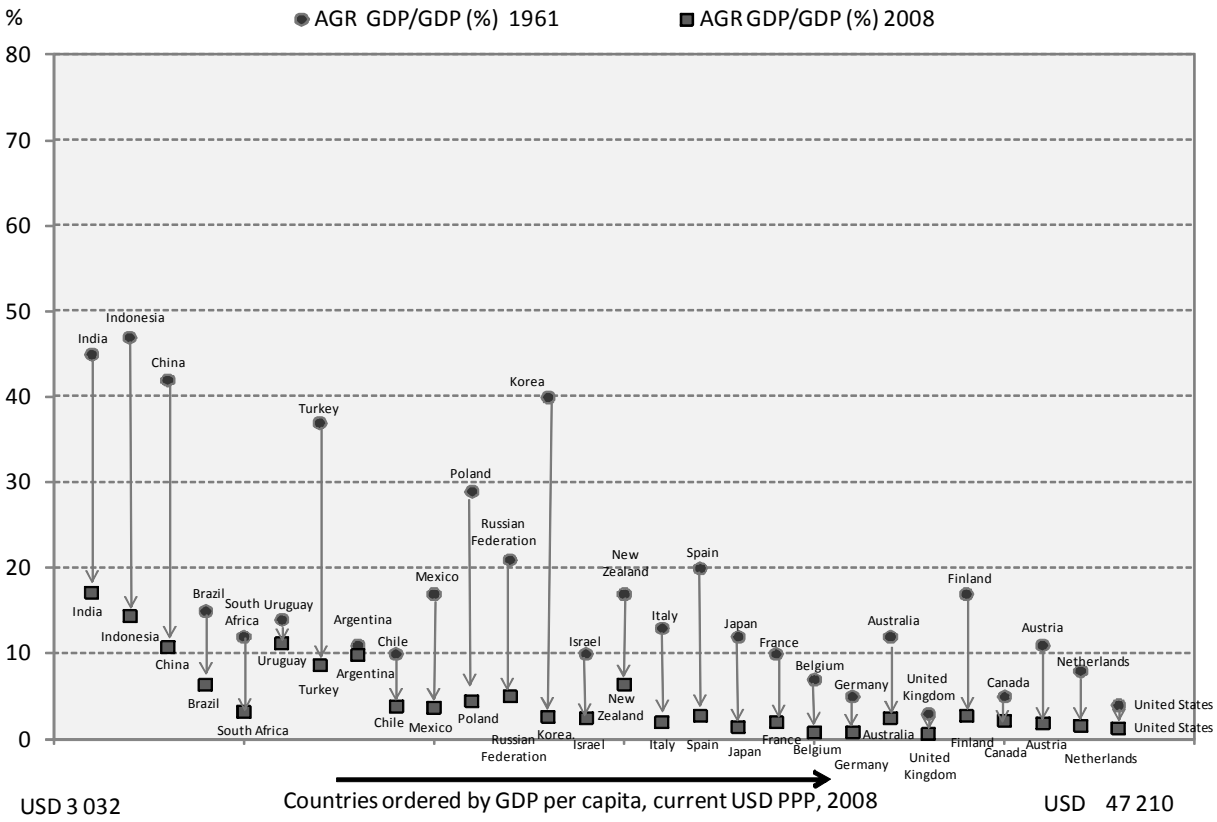


Note: 180 countries; GDP per capita refers to 2005 PPP USD.
Source: World Development Indicators, 2009.

14. For a narrower group of emerging and developed economies, Figure 2 shows how agriculture's share of GDP changed between 1961 and 2008, with countries ordered according to their GDP per capita. The graph re-emphasises the strong inverse correlation between agriculture's share of GDP and GDP per capita, with high income OECD countries typically having no more than 2%-3% of GDP generated by their farm sectors. A second, and consistent, feature is that agriculture's share of GDP has declined in *all* countries, including those with a strong comparative advantage in agricultural activities. A third point is that the decline of the share of resources in agriculture has been larger for countries with lower incomes, which have more scope for agricultural productivity improvements and for shifting resources into new non-farm activities (in developed countries, that shift has already occurred).[3]

3. There are some exceptions, such as Brazil and Chile, where the changes have been large in absolute terms, but low relative to other countries at similar income levels. In these particular countries, import substitution industrialisation policies led to a rapid growth in manufacturing prior to the base year, bringing down agriculture's share of GDP; while more recently the liberalisation of policies has mitigated the tendency of resources to shift out of agriculture, as these countries have exploited their natural comparative advantage in agricultural activities.

Figure 2. Evolution of agriculture's share of GDP in various countries (1961 to 2008)

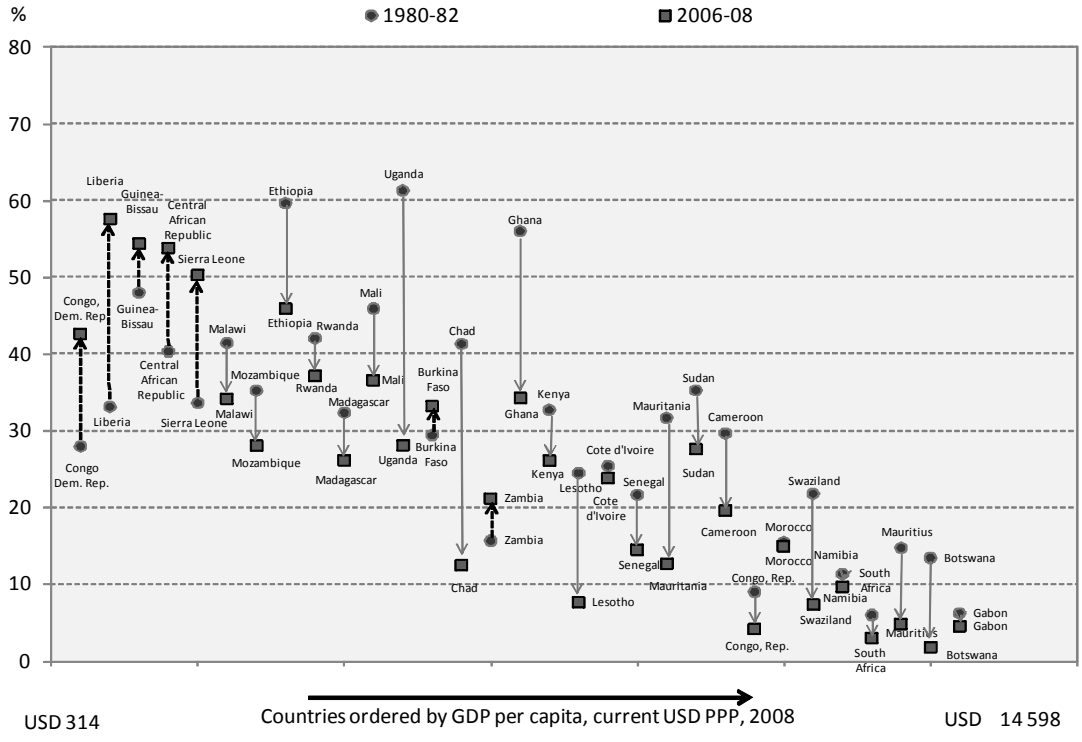


Source: FAO, 1999; WDI, 2008; IMF, 2008.

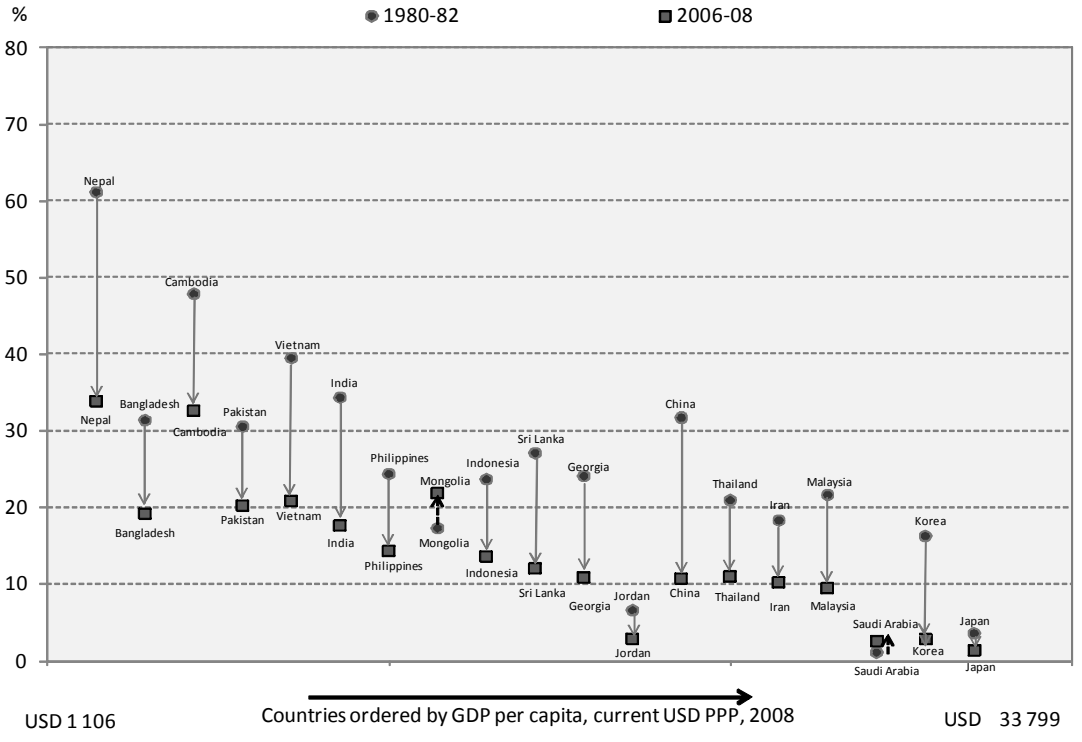
15. We can also look at more recent changes across three continents. Figure 3 shows the declines in agriculture's share of GDP since 1980 in selected African, Asian and Latin American countries (Panels A, B and C respectively). In Latin America, agriculture's share of GDP has declined to less than 10% of the total in most countries, and is less than 20% in nearly all countries. In Asia, the ratio is above 30% in a few countries but has declined to between 10% and 20% across most of the continent. Africa stands out as an exception. First, because of the significant number of countries in which agriculture still accounts for a third or more of GDP; and second because in several of the poorest countries, all with a per capita income of less than USD 1 000 per year, agriculture's share of GDP has actually *risen* over the past 30 years. The majority of these countries have had weak or negative economic growth and have been marked by conflict or civil strife, attesting to the particular development challenges faced in the region.

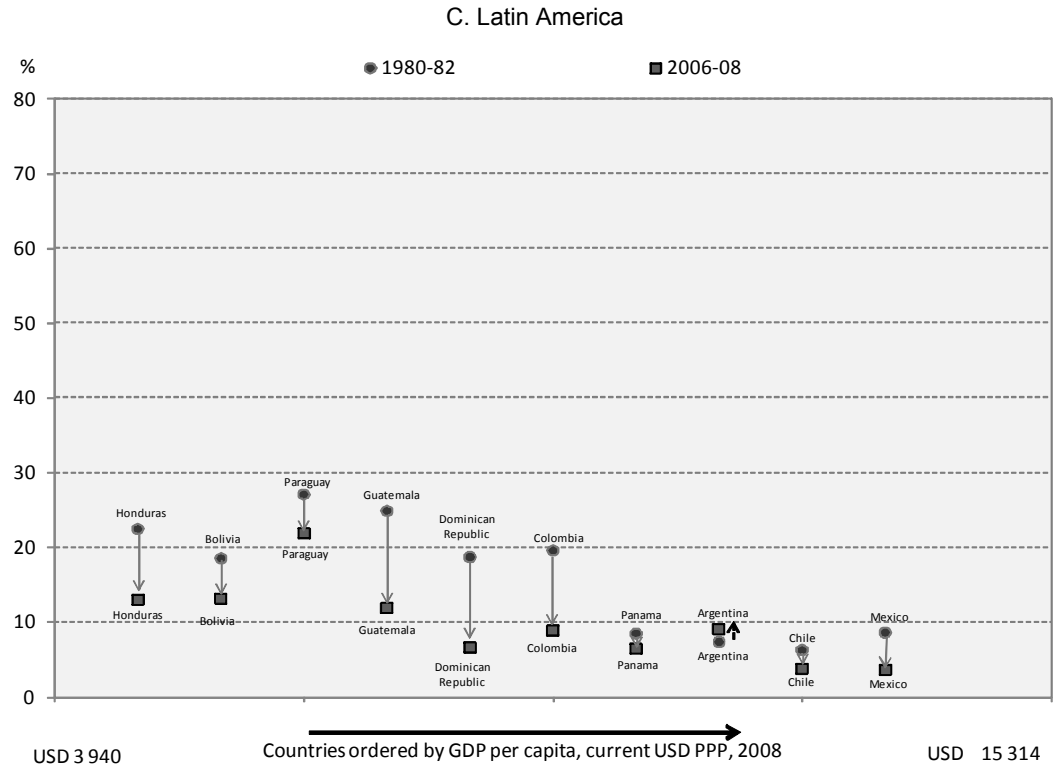
Figure 3 Evolution of agriculture's share of GDP in Africa, Asia and Latin America, 1980-82 to 2006-08

A. Africa



B. Asia

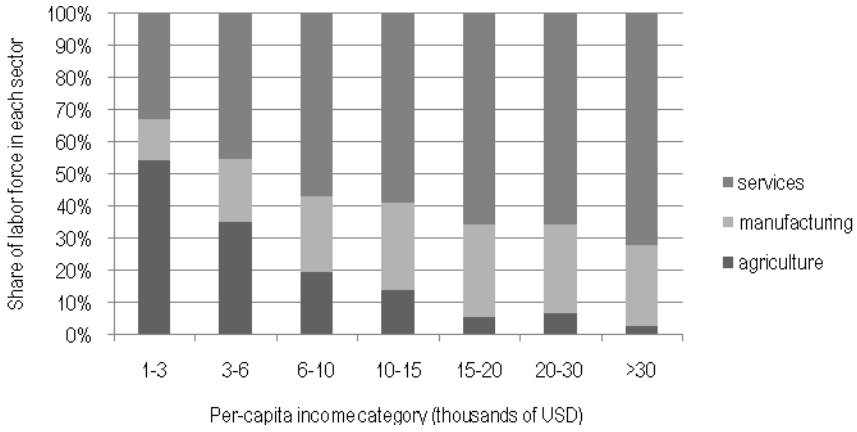




Source: World Bank, *World Development Indicators*, 2010.

16. The declining share of agriculture in GDP is accompanied by a release of labour to other sectors. Again this can be seen both in cross-section and over time. Figure 4 shows the average shares of employment in agriculture, manufacturing, and services for 120 countries, divided into seven income categories. On average, half of the labour force in the poorest countries is occupied in agriculture, whereas for countries that have a per-capita income of USD 15 000 or higher, the service sector generally occupies two-thirds or more of the labour force, manufacturing most of the remainder, and agriculture just a few per cent.

Figure 4. Employment shares in agriculture, manufacturing, and services, 2005

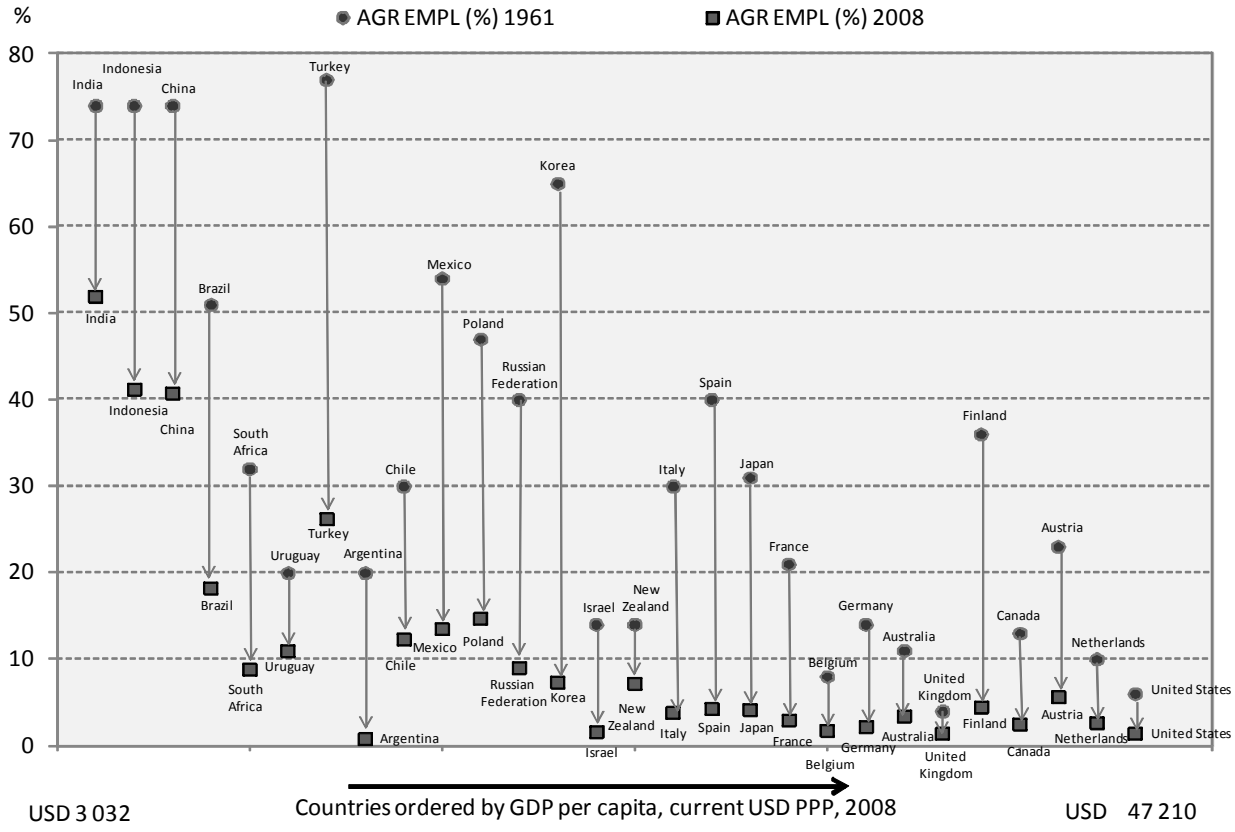


Note: 120 countries; income categories are based on GDP per capita 2005, PPP USD.
Source: World Development Indicators, 2009.

17. Changes in agriculture's share of employment are shown in Figure 5 (for the same countries and same period as in Figure 2). For most middle income (transforming) countries, the decline in agriculture's share of employment has been more rapid than the fall in the sector's share of GDP, reflecting stronger gains in labour productivity in agriculture than in other sectors, and more rapid increases in labour demand outside agriculture (Johnson, 2000). The labour adjustment has been larger for upper-middle income countries than for lower-middle income countries such as India, as alternative employment possibilities have become more widely available and the transition of labour out of semi-subsistence farming is more fully underway. In the poorest agriculture-dependent economies, where agriculture accounts for a third or more of GDP, agriculture typically accounts for two-thirds or more of employment and the release of labour from the sector has been limited (World Bank, *World Development Report,* 2008).

18. The general pattern seems to be that, in the early stages of development, non-agricultural growth outpaces agricultural growth, but labour is not readily absorbed by the non-farm economy. This phase corresponds to widening productivity gap between labour in agriculture and labour in other sectors. Agriculture's share of GDP thus falls more rapidly than its share of employment, a development which corresponds to increasing income inequality between the non-farm and farm sectors. At somewhat higher levels of income, however, the income gap precipitates a more rapid outflow of labour from farming and agriculture's share of employment declines more rapidly than its share of GDP. At this stage the difference in labour productivity narrows. This delayed adjustment of labour, followed by a rapid catch-up, is apparent from the historical experiences of transforming and urbanised economies.

Figure 5. Evolution of agriculture's share of employment in various countries (1961 to 2008)



Source: FAO, 1999; WDI, 2008; IMF, 2008.

19. The sectoral transformation is influenced by the fact that the productivity and skills gap between subsistence agriculture and other manufacturing and service sectors is becoming ever larger. Econometric estimates suggest that "the economic growth process, as manifested in the structural transformation, has become progressively less successful at integrating low productivity agricultural labour into the rest of the economy" (Timmer, 2010). It may indeed be more difficult for farm labour in poor agriculture-dependent economies to be absorbed by other sectors than it was for, say, European farmers to move into industrial jobs a century earlier. Yet once the sectoral transformation is underway, its pace is invariably more rapid than in the past (Table 1). Whereas it took a century or more for agriculture's share of GDP to fall from 40% to 7% in OECD countries that went through the industrial revolution early, middle income countries are effecting these changes in three decades or less. This accelerating change is matched by an even more rapid release of labour out of the sector. In Korea, agriculture's share of employment fell from 40% to 16% in just 14 years – a transition which took 53 years in the United States and 68 years in the United Kingdom (the first country to go through the industrial revolution).

Table 1. Pace of adjustment in various countries, based on agriculture share of GDP and employment

	Agriculture share of GDP			Agriculture share of employment		
	Year of 40%	Year of 7%	Years required	Year of 40%	Year of 16%	Years required
Netherlands	1800	1965	165	1855	1957	102
Denmark	1850	1969	119	1920	1962	42
UK	1788	1901	113	1800	1868	68
Chile	1875	1980	105	1950	1993	43
Mexico	1890	1992	102	1969	2000	31
USA	1854	1950	96	1897	1950	53
France	1878	1972	94	1921	1965	44
Brazil	1910	2003	93	1960	2005 (20.5%)	>45
Germany	1866	1958	92	1900	1942	42
Japan	1896	1969	73	1940	1971	31
Poland	1935	1991	56	1968	2006 (18.7%)	>31
India	1962	2006 (17.5%)	>44	2005 (58%)		--
China	1967	2006 (11.7%)	>39	2006 (43%)		--
Turkey	1970	2007 (8.9%)	>37	1998	2007 (28.7%)	>9
Korea	1965	1991	26	1977	1991	14
Indonesia	1971	1997	26	2006 (42%)		--

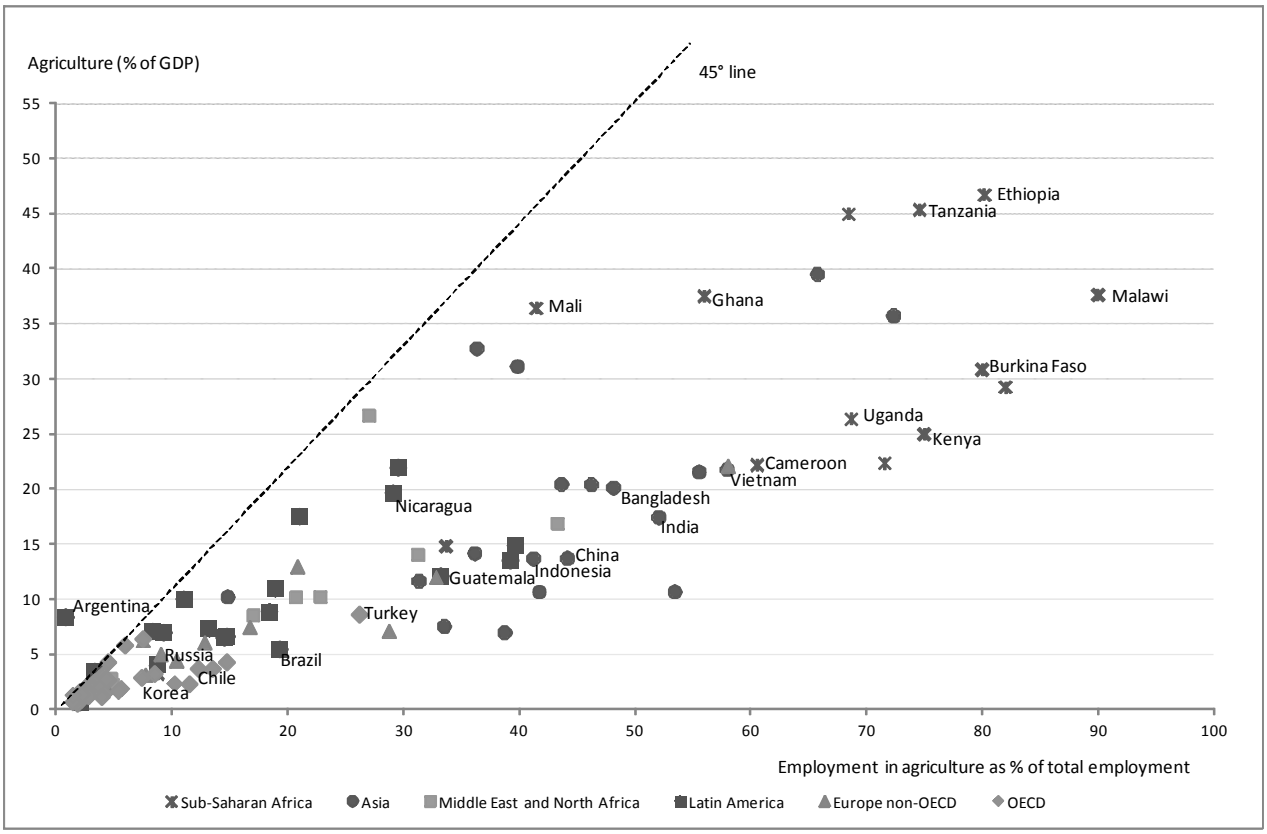
Source: Adapted from Kim, H. and Lee, Y.K., 2003.

20. While there are common elements of the adjustment process, there are also asymmetries. Figure 6 compares agriculture's share of GDP with agriculture's share of employment for recent years in a large number of developed and developing countries. The 45-degree line corresponds to a situation in which the sector's share of GDP and its share of employment are equal, implying that labour is as productive in agriculture as in other sectors.[4] Nearly all countries lie below this line, suggesting that agricultural labour is less productive than non-agricultural labour, but there are wide differences across countries. As economies develop, and agriculture's share of both income and employment declines, labour productivity in

4. However, caution should be exercised in interpreting specific numbers as the definition of agriculture used in measuring GDP may not be the same as that used in recording employment. Moreover, labour employed in agriculture also earns off-farm income.

agriculture tends to converge with that in other sectors. But in some developing countries, that convergence appears to be deferred. This has important implications in terms of the distribution of income across the economy.

Figure 6. Agriculture's share of GDP versus agriculture's share of employment, 2008



Source: World Development Indicators (2010) and national sources.

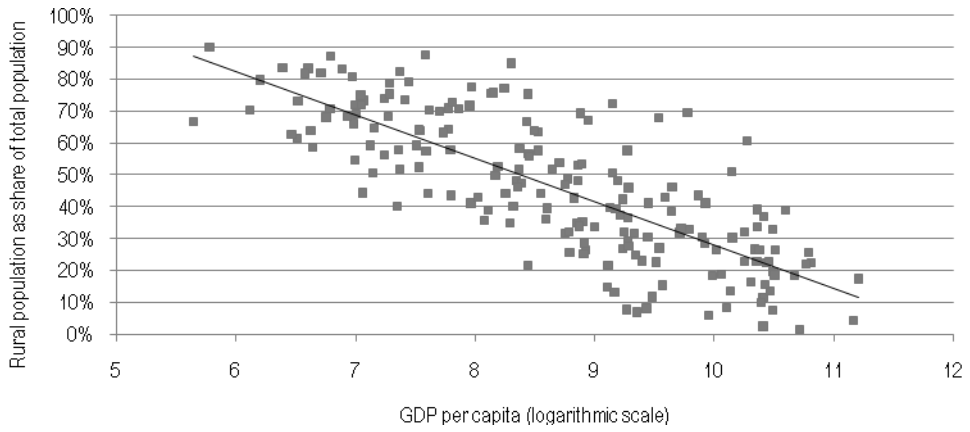
21. In a large number of developing countries, agriculture's share of employment is more than twice its share of GDP. Even allowing for off-farm income, this implies that labour generates much less value added in agriculture than it does in other sectors. However, there are some developing countries in which labour's implied productivity in agriculture is closer to its productivity in other sectors, suggesting that there is no pre-ordained trajectory for the sectoral transformation. Improvements in the productivity of agricultural labour will by definition tend to close the gap directly, while the outflow of less productive labour to more productive occupations in other sectors will narrow it indirectly. The countries furthest from the 45-degree are those in which agricultural productivity has languished and the sector has not been effectively assimilated into the rest of the economy. In practice, both forms of integration need to go hand-in-hand: for most countries improvements in agricultural labour productivity will cause labour to be released from agriculture (increased production is unlikely to be fully absorbed by higher domestic demand or exports), and that labour needs to be provided with productive employment in other sectors.

22. Nevertheless, the challenges of managing the sectoral transformation in poor African economies such as Burkina Faso, Ethiopia and Malawi, where agriculture dominates employment and accounts for a third or more of GDP, are likely to be different to those in Asian economies such as Bangladesh, India and Vietnam, where agriculture still accounts for about a half of employment but the sector's share of GDP has dropped to 20% or less.

2.2. The spatial transformation

23. The spatial transformation from rural to predominantly urban economic activity is not as uniform as the sectoral transformation. Figure 7 shows that a majority of countries with a per capita income of less than USD 5 000 (approximately 8.5 on the logarithmic scale) have more than 50% of their population in rural areas. On average, this share declines to 25% when countries reach an income of USD 20 000. Urbanisation may occur both as a result of higher birth rates in urban areas compared to rural areas and as a result of rural-to-urban migration.[5] In China a majority (about 56%) of the population is still rural, but rapid migration from rural areas might soon change this situation. In 1983 the cumulative number of rural migrants was about 2 million in China. This number had increased to about 78 million in the year 2000. Six years later, in 2006, the estimated cumulative number of rural migrants was 132 million (OECD, 2009). In India, which has the largest rural population in the World (approximately 800 million), it is estimated that rural-to-urban migration accounts for about 30% of urbanization (Mitra and Murayama, 2008). In Brazil, rapid migration from rural areas increased the share of the population in urban areas from 15% in 1940 to 56% in 1970, and to more than 80% in 2000 (Wagner and Ward, 1980; Brazilian Demographic Census 2000).

Figure 7. Share of population that is rural and GDP per capita (190 countries)



Note: 190 countries; GDP per capita refers to 2005 PPP USD.
Source: World Development Indicators, 2009.

24. The agglomeration of human activity with economic development may be inevitable, but the specific character of urbanisation is not. Rural areas may become more "urbanised" as a result of the agricultural transformation and the induced growth in non-farm activity. Alternatively, urbanisation may result from poor unskilled labour migrating to cities in the anticipation of improved prospects. In the absence of a parallel development in social infrastructure, the resulting shanty towns (common in Asia and Latin America) may impose severe social strains. Hence there is a need to plan for a sustainable form of spatial development, which is likely to require the balanced promotion of farm and non-farm opportunities in rural areas.

5. Rural areas may grow "urban" if they reach the population threshold that defines an urban area. Thus, the rate of urbanization depends to a certain degree on how urban and rural areas are defined. Usually, population agglomerations of 5 000 people constitute the lower threshold for what is officially defined as an urban area (Haggblade *et al.*, 2007).

25. As labour has left farming for other sectors, we nevertheless see a tendency for poverty to remain predominantly rural. Three-quarters of the world's dollar a day rural poor (nearly 600 million people) live in "transforming" economies, where poverty remains predominantly rural but agriculture contributes less than 20% to overall economic growth (World Bank, 2008). This imbalance points to the need for an integrated *rural* strategy, not just an agricultural one.

2.3. The institutional transformation

26. A third dimension of change that developing countries tend to go through is the institutional transformation from an economy based largely on informal rules and procedures to one based on a framework of formal legislation – in short, the transformation from informal to formal institutions.[6] In the absence of formal rules that effectively regulate employment, property ownership, or land use, various types of informal rules and procedures are usually applied instead. Two examples from the agrarian economy are sharecropping as a means to overcome moral hazard situations in the farmer-labourer relation and "squatter's rights", which regulate access to land.

27. Informal institutions may be efficient in the context of existing economic structures, but a strengthening of formal institutions may facilitate the emergence of more commercially oriented agriculture, for example by supporting the development of land rental and credit markets, and other forms of formal contracts. Formal institutions may also make the use of certain policy instruments more feasible, such as social safety nets. It is thus the third element of development strategy, which involves facilitating the three dimensions of structural change: adjustment away from agriculture-dependence, a desirable form of urbanisation and concomitant institutional development. The specifics of this strategy are taken up in Section 4.

2.4. Promoting a pro-poor structural transformation

28. Within a broad strategy based on facilitating structural change across its three dimensions, are there ways in which policymakers can promote a more "pro-poor" pattern of development?

29. Several studies have suggested that, in poor countries, this can be achieved most effectively by agricultural growth, with a specific focus on smallholder development (for example, Hazell *et al.*, 2007; FAO and the World Bank, 2009). The direct impacts of smallholder growth are likely to be pro-poor because the majority of the poor live in rural areas, where agriculture is the dominant economic activity and smallholder farming is the predominant structure. Smallholder development can increase returns to assets that the poor possess – their labour and in some cases their land – and push down the price of staples, which is crucial when so many of the poor are net buyers of food. Indirectly, the benefits of smallholder growth are also likely to be pro-poor, because of potentially strong linkage effects to the rest of the economy. Empirically, a number of studies have confirmed that agricultural growth tends to be effective in reducing poverty (Irz *et al.*, 2001; de Janvry and Sadoulet, 2009; Cervantes-Godoy and Dewbre, 2010).

30. With development, one would expect the economy to diversify and for growth outside agriculture to become progressively more important as a source of income growth, and hence of poverty reduction and

6. Institutions are understood here as the 'rules of the game' that shape and guide human behaviour (North, 1990). The distinction between formal and informal lies largely in the enforcement mechanism. While formal institutions are usually enforced by official entities (such as police, bureaucrats and courts), informal institutions are socially sanctioned norms of behaviour that rely primarily on self-enforcement mechanisms of obligation, expectations of reciprocity, and internalised norm adherence (de Soysa and Jütting, 2007).

improved food security.[7] Moreover, in the long term manufactures and services are capable of generating annual growth rates of 10% or more, whereas growth rates in agriculture seldom exceed 5%. How then should governments strike the balance between boosting incomes in the context of existing structures, where there is more immediate scope for poverty reduction, and facilitating the transition to a more diversified economy which has the potential to generate much higher average incomes? In order to address this question, it is helpful to look more closely at the mechanics of the sectoral transformation, in particular the structural changes within agriculture that accompany the inter-sectoral shifts described previously.

31. In aggregate terms, the sectoral transformation is driven by a range of supply and demand interactions. At the outset of the development process, productivity growth in agriculture leads to the generation of surpluses that induce a demand for other goods and services. On the demand side, once basic needs are met, income elasticities of demand for food tend to be less than for other consumption, so the demand for food grows more slowly than the demand for other goods. Longer term changes on the supply side are less clear. There has been an historical tendency to assume that labour productivity grows less rapidly in agriculture than in the manufacturing sector, partly because there is less scope for benefiting from the division of labour. Indeed dual models of transition, such as the Lewis Model (Lewis, 1954) typically contrast a stagnant traditional rural sector with a dynamic and modern manufacturing sector. However, this view has been challenged by others, who have observed rapid science-based technical change in agriculture (for example, Hayami and Ruttan, 1985). For a range of low and middle income countries, Martin and Mitra (2001) found that, on average, total factor productivity gains in agriculture outpaced those in other sectors. However, the average masks a range of different experiences. For example agricultural productivity grew faster than productivity in manufactures in India, Kenya and Turkey, but slower in Egypt, Korea and Indonesia. Which effect dominates depends on a range of factors, including national institutions and government policies (for example towards innovation).

32. When agricultural productivity growth outpaces productivity growth in other sectors, we tend to observe a more rapid release of labour – the "push" out of the sector complementing the "pull" from relatively fast demand growth outside the sector (but possibly within the rural economy). Despite this release of resources, the agricultural sector typically continues to expand in absolute terms. Those leaving the sector tend to be those who have not participated to the full extent in productivity improvements, and have thus seen their profitability undermined, and those who have superior prospects in other sectors. On the other hand, if agricultural productivity growth is relatively slow, then that transition occurs more slowly and – when non-agricultural demand growth is weak – may not occur at all.

33. The pace at which resources are released from agriculture also depends on the international forces of supply and demand. Rising net demand for exports from overseas may slow the adjustment process, while increasing import competition in the form of lower prices may accelerate it. The balance of these pressures should, in principle, be a reflection of a country's comparative advantage. Historically the terms of trade have tended to move against agriculture, as supply growth has outpaced demand growth. Insofar as prices reflect production costs, declining real prices are not a problem for innovative farmers, whose productivity changes are responsible the price changes. However, for inefficient farmers, there is clearly a threat to profitability which, along with the possibility of improved opportunities in other sectors, can determine exit decisions.

7. Christiansen *et al*. (2010) find, from econometric analysis based on national surveys, that agriculture is significantly more effective than non-agriculture in reducing poverty among the poorest of the poor. It is also up to 3.2 times better at reducing dollar-a-day headcount poverty in low-income and resource-rich countries (including those in sub-Saharan Africa), at least when societies are not fundamentally unequal. However, when it comes to the better-off poor (reflected in the two dollars a day measure), non-agriculture has the edge. These results are driven by the much larger participation of poorer households in growth from agriculture and the lower poverty-reducing effect of non-agriculture in the presence of extractive industries.

34. Timmer (1998) has suggested that these basic supply and demand forces are associated with a four-phase adjustment process for the agricultural sector. In the early stages of development, agriculture dominates output and employment, and the priority is to "get agriculture moving". The subsequent generation of a surplus within agriculture leads to a second period in which agriculture makes a key contribution to growth both directly and via a variety of linkages. In the third phase, agriculture's share of national income declines and agricultural incomes fall behind those in other sectors – often inducing political tensions. The fourth and final phase is one in which the agricultural sector, including agricultural labour markets, are integrated into the rest of the economy.[8] This pattern is consistent with a non-linear adjustment process where, initially, employment in agriculture declines more slowly than the sector's share of GDP, but then there is a more rapid release of labour from the sector as average incomes improve.[9]

35. A number of poor countries, mostly in Africa, are at the first two stages of this development process. In its 2008 *World Development Report*, the World Bank identifies approximately 170 million rural people in agriculture-dependent economies (mostly in Sub-Saharan Africa) falling below a USD 1.08 a day income threshold in 2002 (measured in 1993 purchasing power parity dollars). A much larger number of rural poor – 583 million in 2002 – live in transforming economies, a large proportion of them in China and India. The majority of the rural poor in Latin America live in urbanised countries. In transforming and urbanised economies, where agriculture accounts for less than 20% of overall growth, there is a general need to integrate agriculture more fully with thriving parts of the economy.

36. These different circumstances suggest a need for differentiated strategies, with agriculture prioritised at early stages of development.[10] In terms of establishing the framework conditions, this is likely to imply a greater role for policy in overcoming market failures and a greater share of public expenditures going to providing essential public goods (such as agricultural research and rural infrastructure). It also points to the need for caution in generalising from the experiences of a few agriculture-dependent countries. For example, Malawi's input subsidy programme has received much attention, but it should be remembered that Malawi is amongst the poorest countries in the world, with agriculture's share of GDP more than one-third and poverty predominantly rural (nearly 90%). With market failures likely to be more endemic in poorer countries, it has been suggested that a different set of agricultural policy instruments is appropriate – a point taken up below. A key point to note, however, is that even in the majority of what the World Banks characterises as agriculture-dependent economies, non-agricultural activities still account for the majority of national income, and cannot be ignored as a source of employment opportunities.

37. Furthermore, even in agriculture-dependent economies, the process of structural change within agriculture is likely to lead to a shedding of farm labour. There has been much debate over the relative efficiencies of small versus large farms. A range of benefits from small scale family farming have been noted. For example, farm labour may be easier to motivate and supervise, while smallholders may have important local knowledge and may be more adept at managing some forms of risk. On the other hand, there are important economies of scale beyond the farm in areas such as procuring inputs, obtaining information on markets and technical farming issues, in meeting standards and certifying production, and

8. These four phases are associated, respectively, with the work of Mosher (1966); Johnston and Mellor (1961); Schultz (1964) and Ruttan (1977); and Johnson (1973).

9. It is also consistent with Kuznet's hypothesis that income inequality first increases with economic development and then declines after a certain average income is attained.

10. Dorward (2009a) has proposed three types of transformation strategy: 'hanging in' strategies, which are concerned to maintain and protect current levels of wealth and welfare in the face of threats of stresses and shocks; 'stepping up' strategies, which involve investments in assets to expand the scale or productivity of existing assets and activities; and 'stepping out' strategies, with accumulation of assets to allow investments or switches into new activities and assets.

in transacting with large scale buyers from processors and supermarkets, with their exacting demands (Wiggins, 2009).

38. Some of this debate may be beside the point, insofar as the relevant comparison is between small farms of less than a few hectares and not between small farms of less than a hectare and mega farms of several hundred hectares or more. Small farms may be technically and allocatively efficient, given the existing level of development, but economies of scale beyond the farm gate are likely become more apparent as the economy develops. In much of Africa, only a minority of farms produces a marketed surplus. A change in average farm size from say 0.5 ha to 2 ha, with more farmers recording market sales, would still correspond to small scale farming, but would nevertheless require a significant degree of farm level adjustment – in particular the release of labour from the sector. Moreover, a progressive consolidation would appear to be necessary to generate substantially higher per capita incomes, irrespective of efficiency considerations. An FAO and World Bank study (FAO and World Bank, 2009) has suggested that in Africa's Guinea Savannah zone, an unexploited area that shares many similarities with the Brazilian Cerrado and the Northeast Region of Thailand, opportunities abound for Africa's farmers to compete effectively in regional and global markets. Improving opportunities for farmers within agriculture are likely to be associated with output rising but labour leaving the sector – as has been apparent from the agricultural transformation in most OECD countries.

3. Policy responses to structural change

39. Policy makers face a number of challenges as a consequence of the structural pressures identified in the previous section. Fundamentally, the only way of generating a sustainable increase in real incomes is through raising productivity. In order to redress the gap between urban and rural incomes, that implies addressing the underlying problem of lagging labour productivity in agriculture.

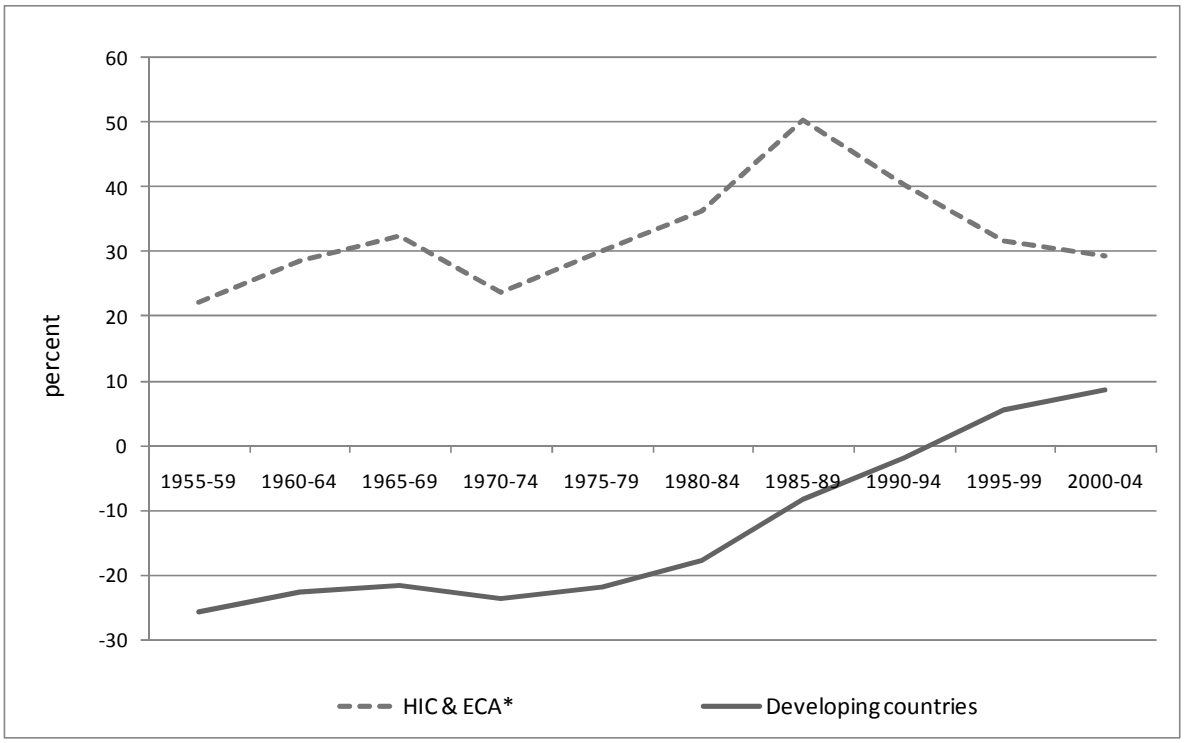
40. In poor countries still in the early stages of economic development (*i.e.* in agriculture-dependent economies), the paramount need is to boost average incomes in general and rural incomes in particular. In these economies most of the poor live in rural areas, so raising rural incomes tends to have the most immediate impact on poverty. Furthermore, insufficient income is the principal cause of food insecurity, which is also more prevalent in rural areas. In the long term, however, the ultimate need is to shift from improving incomes in current activities to facilitating adjustment into activities that command potentially higher incomes. The balance to be struck, therefore, is between policies that support development of the agricultural sector in general, but do not prevent structural adjustment from occurring as a direct consequence of that process. In general, spending on public goods, such as infrastructure and agricultural research, can facilitate both developments, whereas direct subsidies to farm activities – notwithstanding potential benefits that are discussed later – run the risk of impeding adjustment.

41. Historically, poor countries have tended to tax their agricultural sectors rather than subsidise them (Krueger, Schiff and Valdés, 1991). They have done this both explicitly, for example via export taxes and regulated food prices, and implicitly, by investing relatively less in rural areas. Since the mid-1980s, there has been a reduction in this tendency, but it still prevails (Anderson *et al.,* 2008). As incomes rise and as agriculture's share of employment decreases, countries find they can afford more easily to provide support to their agricultural sectors and the opposite tendency is observed. In the 1990s, developing countries on balance made that switch, with their average nominal rate of assistance (NRA), which measures the degree to which domestic farm gate prices are above adjusted border prices, becoming positive (Figure 8).[11] On average, they thereby joined high income OECD countries in providing protection to their agricultural sectors. Note that this measure only takes account of relative prices, and ignores

11. Here the NRA is expressed in percentage terms, *i.e.* as NRA = 100*(Px/Py – 1), where Px is the domestic farm gate price and Py is the adjusted border price.

subsidies to farmers or other aspects of agricultural spending. Also, some caution needs to be exercised in interpreting these numbers, as the NRAs are weighted averages for import-competing products, exportables and non-tradables, and in some cases different patterns can be observed when these categories are treated separately.[12]

Figure 8. Nominal Rate of Assistance to agriculture in developed and developing countries, 1955-2004



* HIC= High income countries; ECA=Eastern European and Central Asia countries.
Source: Anderson *et al.,* 2008.

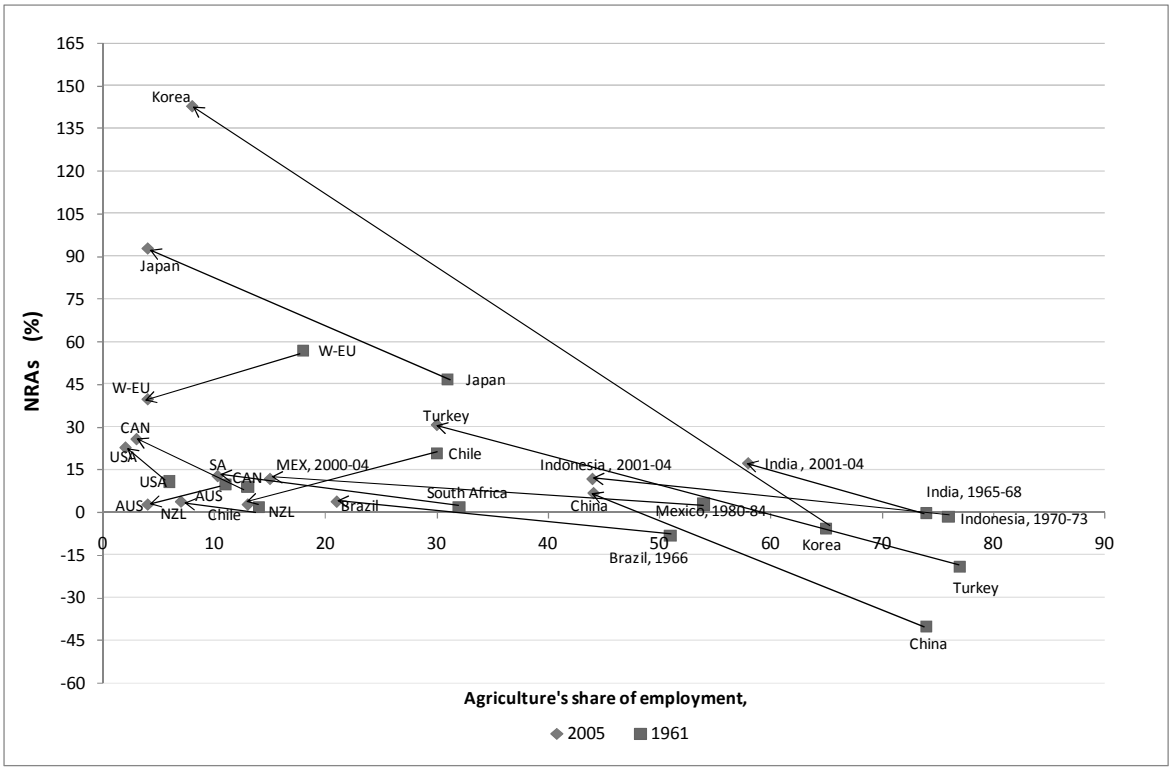
42. By implication, the level of protection is also linked to agriculture's share of employment. The horizontal axis of Figure 9 shows agriculture's share of total employment, while the vertical axis measures the NRA. The arrows show the movement for each country between 1961 and 2005. For nearly all developing countries, the arrow points to the north-west, indicating an increasing rate of protection as labour leaves the sector, whereas the pattern for high income OECD countries is mixed.[13] The arrows are also much longer for developing countries, as more dramatic structural changes have taken place, and the

12. Nevertheless, the same pattern is borne out by the authors' calculation of Welfare Reduction Indices (WRIs). The WRI is defined as the uniform trade tax which would generate the same reduction in national welfare as the prevailing structure of national distortions, Because the contribution of each product is related to the square of the price distortion, this measure captures the higher welfare costs associated with peak tariffs, and overcomes the problem whereby positive and negative NRAs tend to cancel each other out.

13. The tendency of countries to protect their agriculture as they become more developed stems from the political economy of structural change. On the demand side, as consumers spend a declining share of their incomes on food they become 'rationally ignorant' that they are paying elevated prices for their food – it is not worth the effort of becoming informed and protesting. On the supply side, the release of labour from the sector means that a given transfer to each producer imposes a progressively smaller burden on the overall economy. Moreover, competitive pressures on less efficient farmers increase their incentive to lobby for government support.

associated change in protection has been larger. Interestingly, developing countries have undergone significant adjustment, seemingly irrespective of whether the rise in protection has been large or small.

Figure 9. NRA and agriculture's share of employment, 1961 and 2005, selected countries



Source: Anderson *et al.,* 2008; FAO, 1999; WDI, 2008.

43. Programmes targeted at smallholders are common in emerging (and developed) economies. For example, both Brazil and Chile have programmes that seek to integrate smallholders into the commercial sector, notably via the use of subsidised credit and investments in farm-level infrastructure. In few cases, however, have policy makers openly acknowledged that long-term competitiveness is not a realistic goal for the majority of smallholders and decided to focus their programmes on potentially viable operations. At the same time, there is no documented case of a smallholder programme in which the majority of farmers enrolling have succeeded in progressing through the programme to successfully join the ranks of efficient commercial producers. In other words, no programme has reversed the structural tendency for smallholders to leave the sector. This suggests that these policies constitute social policies at least as much as developmental ones.

44. In a number of developing countries, the movement away from dis-protection has been matched by commitments to allocate more resources to agricultural development. A large number of developing countries with relatively neutral pricing policies are at a critical juncture in terms of agricultural policy development. Do they spend scarce resources on supporting farmers directly, or do they invest in the broader underpinnings of agricultural development and economic development more generally?

45. In part, this question turns on how policy makers choose to address the issue of smallholder adjustment. Smallholders in developing countries often underpin the rural economy, yet they face systematic adjustment pressures as a necessary corollary of the development process. With technology improving, and more efficient use being made of scarce resources, including the exploitation of scale

economies, smallholders that do not participate in sectoral cost improvements inevitably face pressure on their incomes. Governments can shield smallholders from this pressure, or they can help them adapt to it – either by becoming more competitive, obtaining incomes from other sources, or by finding jobs outside the sector.

46. In choosing the appropriate policy mix, the preceding discussion suggests a need for a logical framework that acknowledges three important things. First, economic structures are relatively fixed in the short to medium term, so efforts to achieve an immediate impact on incomes need to be based on an understanding of how people currently earn their livelihoods. Second, over the long-term, structures change and the sectoral transformation implies that the inter-generational future for the majority of smallholders cannot lie exclusively in farming; hence there is a need for policies that enhance households' opportunities outside the sector as well as within it. In other words, agricultural policies are not enough. Third, in order to improve both agricultural competitiveness and the prospects for earning more outside the sector, the most important policies may not in fact be agricultural policies. It is therefore important that smallholder policies are framed in an economy-wide context, with agricultural policies a component of the overall policy mix. The elements of an appropriate strategy are discussed in the next section.

4. A strategic framework for strengthening rural incomes and facilitating smallholder adjustment

47. In proposing a strategic framework for strengthening rural incomes it is helpful to make a distinction between the short to medium term issue of how best to support incomes, reduce poverty and tackle food insecurity (beyond immediate questions of humanitarian relief), and deeper long term questions regarding how best to consolidate those gains via broader economic development. There may be a connection, with programmes that are effective in the short term sowing the seeds for longer term development, but there may equally be trade-offs, so it is conceptually helpful to distinguish short term social objectives from long term development ones.

48. At the same time, a long term strategy for development needs to acknowledge the inevitability of the sectoral, spatial and institutional transformations that accompany economic development. This means acknowledging the inevitability of structural change and the need for policies that smooth adjustment across each of its dimensions. The strategy proposed below consists of: (i) enabling smallholders to become competitive or boost their incomes from other sources (value addition, diversification or exit); (ii) promoting a broader rural development strategy that does not focus exclusively on agricultural development, but seeks to create a more diversified rural economy; and (iii) strengthening institutions with a view to reducing the need for second best instruments.

49. The proposed framework suggests potential roles for government policy in providing the optimal balance of opportunities both within and outside agriculture. Following a discussion of the ability of alternative policy instruments to address short-term and long-term objectives, we illustrate the positive role that government can play with a case study of Thailand, which has successfully transformed from an agrarian country to an urbanised economy based around manufacturing (see Box 1). Rural poverty has fallen dramatically, as have hunger and malnutrition, while agricultural production has increased and a new class of commercially viable farmers has emerged.

4.1. Short-to-medium term policy considerations

50. The optimal way of addressing short term social objectives is with social policies Across a range of developed and developing countries, population-wide social safety nets have been used to support the incomes of rural households. In developing countries, conditional cash transfers (CCTs) have become particularly popular over the past decade. These programmes transfer cash to generally poor households on the condition that they make pre-specified investments in the human capital of their children. CCTs have

been found to be effective at increasing consumption levels among the poor, and have led to behavioural changes, although their impact on *final* outcomes in health and education has been less clear (Fiszbein and Schady, 2009). This may be due to the need for CCTs to operate in conjunction with complementary investments (*e.g.* in schools and hospitals). An issue with CCTs is when the "conditional" element is warranted. For example, it may not be worth incurring the monitoring and enforcement costs associated with the condition that parents put their children in school if they would do that anyway.

51. A virtue of cash transfers is that they do not distort production and consumption decisions and thereby lead to the kinds of efficiency losses associated with market interventions. From a political economy standpoint, however, they appear to be "welfare", whereas market interventions are often justified on other grounds (even if they are disguised welfare). In low income countries, where family and social networks are the main form of social protection, there is some wariness about potentially weakening that aspect of the social fabric.

52. In the poorest countries, however, it has been argued that the necessary institutions and infrastructure do not exist for cash-based instruments to be appropriate, and agricultural policies, such as price supports and input subsidies, have been suggested as an alternative. For example, there may be no registry or information base by which to establish criteria of eligibility; remote farmers may not have a convenient way of spending cash; and – with weak institutions – such programmes may be particularly susceptible to corruption.

53. For these reasons, market interventions such as price supports and input subsidies have been proposed as a more practical way of raising the incomes of farm households. In the case of OECD countries, the Policy Evaluation Model (PEM) has shown such instruments to be inefficient, because a large share of the benefits leaks to non-farm factor owners (principally landlords) and suppliers of purchased inputs (OECD, 2001). Moreover, the use of such instruments typically has perverse distributional effects, with larger farmers benefiting more than small ones (OECD, 2003). For developing countries, the effectiveness of such instruments relative to direct payments is currently being investigated with a new model, the Development Policy Evaluation Model (DEVPEM), which adapts the PEM to take account of some specific aspects of developing country agriculture. [**Modelling the Distributional Impacts of Agricultural Policies in Developing Countries: The Development Policy Evaluation Model (DEVPEM), TAD/CA/APM/WP(2010)43**]. One aspect of this new model is the joint role of the farm household as a producer and consumer of food. As a consequence of this joint role, one would expect price support to be particularly ineffective in developing countries. Indeed, amongst the poor, there are both net buyers and net sellers of food, and many (perhaps the majority of) farm households may in fact be net buyers.

54. On the other hand price stabilisation has been proposed as way of containing the impact of adverse shocks on producers and consumers. The difficulties of designing price stabilisation programmes are well known. Formal (*ex ante*) price stabilisation induces moral hazard, with agents failing to mitigate risk, and price stabilisation can easily turn into systemic price support or suppression, depending on political pressures. Price stabilisation programmes have also proven to be costly and often financially unsustainable (Anderson and Roumasset, 1996). Yet, in the short term, it has been suggested that there may be no other way of containing the impact of adverse price shocks on poverty and food security than by seeking to offset those impacts directly (for example by releasing/buying stocks, or by changing tariffs). The advantages and disadvantages of alternative approaches to market stabilisation are discussed in the document **Stabilisation Policies in Developing Countries After the 2007-08 Food Crisis [TAD/CA/APM/WP(2010)44/FINAL].**

55. Input subsidies have also been suggested as a way (possibly the only way) of targeting the incomes of poor farmers, with the attraction (when markets are insulated) of lowering prices to consumers

too. A host of difficulties of using input subsidies have been acknowledged. The inevitability of leakages to other agents in the supply chain, and the difficulties of targeting have already been noted. In addition such measures may crowd out the development of private input markets, may lead to the over-use of inputs, and once introduced have historically proven difficult to rescind. Nevertheless, there has been renewed optimism that a new generation of so-called "smart" subsidies, by virtue of innovative design features, such as exit strategies, can deliver income benefits while limiting their known shortcomings (Dorward, 2009b). These arguments are considered in the document **The Use of Input Subsidies in Developing Countries [TAD/CA/APM/WP(2010)45/FINAL]**.

56. An additional (and sometimes dominant) argument that has been used for input subsidies, and to a lesser extent for price support, is that it acts as a bridge to longer term development, creating a surplus among farmers that can initiate the agricultural transformation described earlier. This argument, a justification for the policy focus on smallholder development, starts from the premise that economic development has to start with improving the profitability of existing structures. From a conceptual point of view, this argument needs to be kept separate from the short-term social rationale for intervention. Over the longer term, policy makers need to consider *why* farmers are not competitive. This may be because of high transaction costs, for example due to poorly developed road systems, or market failures, such as the absence of functioning credit markets. The optimal policy solution would be to reduce transaction costs, via suitable investments and thereby correct market failures directly – in other words, treat the causes of a lack of competitiveness rather than the symptoms. However, such structural policies can take time to pay-off, so direct support for smallholder development (with an emphasis on input subsidies) has similarly been advanced as a practical alternative. In the case of the poorest of economies, this may be part of a much broader package of specific help to improve farmers' competitiveness. Ideally, long-term development policies should be able to discriminate between those who are potentially viable in the sector and those who are not, creating improved competitive conditions for the former and facilitating adjustment via diversification or exit for the latter. Generalised agricultural policies, such as price support or sector-wide input subsidies, cannot do this. Indeed they run the risk of impeding structural adjustment.

4.2. Long-term priorities

57. Elements of a long term strategy for improving farm household incomes, with a focus on smallholder adjustment, are set out in Table 2. Smallholder adjustment here is understood to be the optimal path to higher long-term income, be that improved competitiveness within the sector, income diversification (from agricultural or non-agricultural sources), or exit to other sectors. Adjustment pathways are described in the columns, and policy instruments in the rows. The first column (improving competitiveness within agriculture) applies to farm households only, but the other columns may apply to both farm households and salaried (often "landless") worker households. Note that the adjustment pathways (columns) are not mutually exclusive: for example, one household member can enhance the farm's competitiveness while another provides off-farm income. Also, the instruments (rows) do not exhaust all possible policies, but focus on those with persuasive arguments.

Table 2. Strategic framework for strengthening farm household incomes

	Adjustment pathway				
	Help farmers become more competitive within agriculture	**Diversify income sources**		**Leave the sector for off farm work**	**Social protection for those unable to adjust**
Policy instrument		**Within agriculture**	**Outside agriculture**		
Price policies	Treats symptoms of uncompetitiveness rather than causes	May impede adjustment			Price stabilisation proposed as a 2nd best safety net
Input subsidies	Treats symptoms of uncompetitiveness rather than causes		May impede adjustment		Proposed as 2nd best instrument for the poorest countries
Credit policies	May correct market failures	Indirect impacts			
Investment in human capital	Minor effects of formal education for this generation; technical training more appropriate for productivity.	Can help farm family members and rural workers move into skilled jobs	Important for farm family members and rural workers	Important for managing inter-generation change	
Investment in infrastructure	Helps with market integration	Helps improve local job opportunities		Can ease migration decisions for offspring	
R&D and extension	Public and private sector important; gains from adoption and adaptive research.	Can expand agricultural employment			
Labour market reforms		Important for raising employment opportunities and wage incomes			
Income transfers (possibly conditional cash transfers)				Conditional school attendance may complement investments in schools	Preferred policy for those unable to adjust.
Regional policies	Important for improving market integration	Expanded non-farm activity would raise farm wages	Important for building a diversified rural economy with wider job opportunities		
Develop producer associations	Reduce transaction costs and help exploit economies of scale	Indirect impacts			
Land policies and property rights	Need to encourage rental markets and facilitate land purchases by small farmers			Secure property rights and rental markets can ease exit decisions	

Improving the competitiveness of farm households

58. In respect of farm households, it is important to have a realistic view of which farmers have the potential to succeed commercially within the sector. In some regions agro-ecological conditions may be such that farming may not be inherently commercially viable. More generally, the appropriate adjustment pathway may depend on the basic type of farming system. For example, in East and Southern Africa the scope for agricultural growth in areas where a mixed maize and cash crop system dominates is inherently

stronger than the potential in areas where rainfed sorghum and millet combine with pastoral agriculture (Dixon *et al*., 2001). Yet even when agro-ecological conditions are inherently favourable, the nature of structural change is such that farm operations tend to consolidate into fewer and more efficient enterprises, and some farmers leave the sector.[14]

59. Given the need to acknowledge that some farmers will succeed while others will not, and the impossibility of identifying exactly which farmers fall into each category, the main role for policy would appear to be in providing public goods that can improve competitiveness, but impose few distortions to incentives at the margin, such as investments in rural infrastructure, skills and training, and R&D.[15] Such investments are unlikely to crowd out the development of other activities and potential income streams, although they are likely to accelerate the pace at which more efficient operators absorb and replace less efficient ones. Most of the relevant expenditures would need to be made at the economy-wide or sectoral level rather than in the form of payments to individuals. A further role for policy is when there are endemic market failures, for example in credit markets. Access to credit is important for smallholders, and private credit markets may find it not worth their while to engage with smallholders, simply because of their size and the difficulties of becoming informed about the creditworthiness of many small operations.

60. In many developing countries, farmers may have insecure land rights, while land rights rental markets function poorly or do not exist at all. Secure land rights can improve incentives for investment in the land, and can also facilitate the development of rental markets. The latter can in turn help compensate for market failures, provide flexible responses to economic and productive incentives, allow farmers to invest in farming capital, and help the poor and young gain access to land under conditions that are less demanding than those required to participate in land sales markets. Renting land may also be a first step to future land acquisition. The underdevelopment of rental markets may prevent the consolidation of land into more productive units, thus impeding agricultural investment and making it more difficult for uncompetitive farmers to diversify out of the sector.

Income diversification for farm households and salaried agricultural workers

61. Income diversification is essential for many farm households. For the poorest farm households, this is likely to provide some insurance and is in effect a "coping" strategy. For other farm households, having one or more family members draw income from outside agriculture may be the start of a successful move into more remunerative activities. Policies that support farm income alone, such as market price support, act as a disincentive for income diversification outside agriculture, and create an obstacle to one of the key "adjustment pathways". The key policies required to help households diversify their income sources are again those that improve human capital. Regional development policies, including the development of rural infrastructure, may also have an important role.

14. Poulton and Wiggins (2005) present some evidence of declining farm sizes in developing countries, mostly for countries where the average farm size is a hectare or less. This is more likely to represent a fragmentation of operations, for example due to inheritance laws and property rights systems, than it is the relative efficiencies of small farms (*e.g.* ease of labour supervision; local knowledge) versus larger operations (knowledge of markets and technology; access to credit and inputs; ease of risk management; ability to assure quality).

15. There is evidence to suggest that improvements in agricultural productivity have a strong effect in reducing poverty (Irz *et al.*, 2001). There is also evidence that agricultural growth has helped support broader economic growth (for example, Tiffin and Irz, 2006), although agriculture's role as a necessary driver of development has been questioned (Gardner and Tsakok, 2008).

Leaving the sector for skilled employment

62. Ultimately, the majority of smallholders in developing countries, or at least their descendants, will have stronger prospects outside the agricultural sector than within it. The most important need, if not for this generation then for the next, would therefore appear to be investment in the education and skills that would enable households to command higher wages. At the same time well-defined property rights, especially with respect to land, are important for farmers to be able to cash in their assets, and exit the sector on favourable terms.

63. Regional development programmes, by targeting economic assistance to less developed regions, may also have a role in bringing jobs to people (rather than the other way round) and so can prevent the problems associated with mass migration into cities. However, rural policies are not fundamentally agricultural policies (nor vice versa). Regional policies can boost development within and outside agriculture, but without biasing household decisions about how best to invest for the future.

64. In many middle income countries the conditions of salaried agricultural work are at least as important as the development of small scale farm entrepreneurs. In Chile, for example, two-thirds of all households receiving the majority of their income from agricultural sources are salaried workers, not farmers. Labour market policies have an important role in ensuring that core standards of employment are met, while improved labour market flexibility has been suggested as a way of reducing informality (OECD, 2008).

Social protection for households that cannot adjust

65. Many poor households, notably older ones, face severe limitations in their adjustment potential, irrespective of the policies that are in place (for example, resource poor and post retirement age farmers). Hence the need for social protection to address chronic as well as transient income shortfalls. Investments in human capital (notably education) and measures such as contingent cash transfers can ensure that the next generation makes a quantum leap in terms of development.

Box 1. Thailand's agriculture: transition and sustained growth

The agricultural transformation

Since 1960 Thailand has transformed from agrarian country to an urbanised economy based around manufacturing and services. Agricultural output has grown more quickly than population, with two distinct periods of growth.

From the early 1960s to the early 1980s, agriculture grew by about 4% per year. It did so by opening up new lands for farming, and using more labour, to produce more of the main staples for both domestic market and for export. During this period, agriculture was a main driver of the economy. In 1980, more than 70% of the active population and most of the country's poor was employed in agriculture. The sector produced cheap food for the growing urban population and was a major export earner, with rice exports prominent. This was achieved despite taxation of the sector to fuel industrial growth. Rice exports were taxed directly and exporters were further penalised indirectly by over-valuation of the baht.

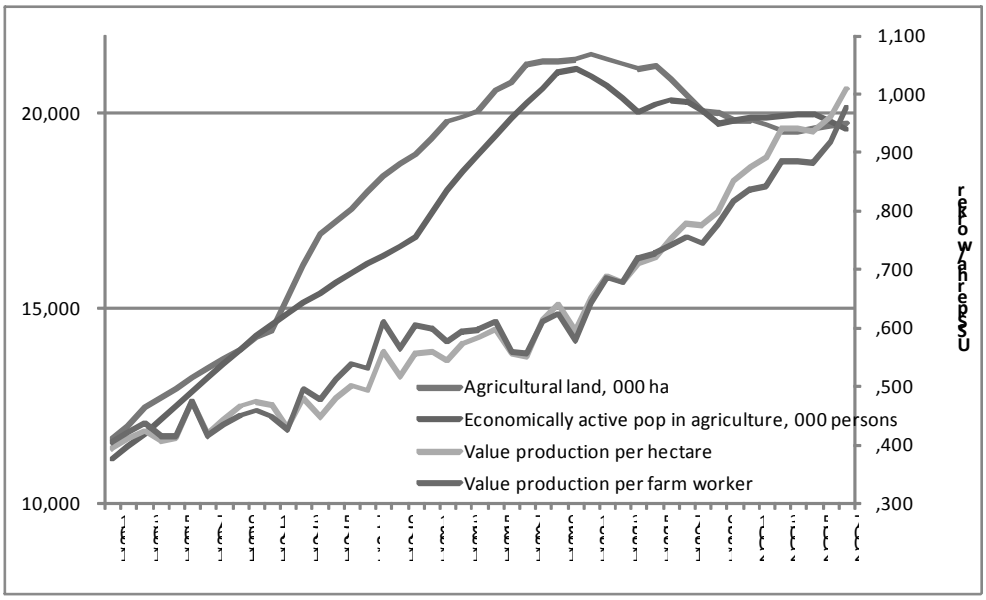
From the mid-1980s, agriculture began to transform. Labour left agriculture, attracted by jobs in manufacturing, urban services and the rural non-farm economy. At the same time, the land frontier was closing and it became harder to add new land. Consequently, agricultural growth slowed to about 2%–3% per year, although productivity increased notably. Given opportunities in both domestic and international markets, new activities emerged such as rubber, cassava, pineapples, and high value perishables for the fast-growing cities. Most farm households have diversified their income sources, while some have become more specialised in higher-value agricultural products sold into more sophisticated marketing chains. The rural non-farm economy has grown to the point where it provides around half of all rural jobs. Successful industrialisation of the country has allowed direct and indirect net taxation of farming to be virtually eliminated.

In the early 1960s more than 60% of the rural population lived in poverty. By the early 2000s that had been cut to only a little more than 10%. From 1988 to 2007, the number of households affected by food poverty declined from 2.55 million to 418 000. With more and cheaper staples, and reduced poverty, child malnutrition has also declined. The incidence of underweight young children fell from 17% in 1987 to 7% in 2006; while that of stunting was reduced from 25% to 16%. During the 1960s and 1970s, most of the improvements came from increasing farm incomes. Subsequently, incomes from rural non-farm jobs and remittances from migrants have become important. Not only has poverty fallen, but the reductions have been similar across the provinces.

The role of government policy

The Thai story is an example of a successful transition from an initial situation in which it was possible for agriculture to grow by putting underused factors of production to work, with only limited improvements in productivity, to a later stage where land and labour have become increasingly scarce and growth could only continue through improved returns to these scarce factors. Box Figure 1 shows how, from the late 1980s onwards, land and labour have started to leave farming, while productivity growth of these two factors has accelerated.

Box Figure 1. Land, labour use and productivity in Thai agriculture, 1961 to 2007



Source & Notes: Computed from FAOSTAT data. Agricultural land and economically active population in agriculture, left scale; value of production per hectare and per worker, right scale. Labour force in agriculture taken as the estimated economically active population in agriculture.

Success has been achieved primarily through private initiative, with the state playing a strategic role in setting an investment climate, investing in roads and research, and also supporting agricultural credit to overcome market failures. Specifically:

- The opening of new land was encouraged by tenure rules that allowed family farmers to clear enough land, 4 to 8 hectares, for a small farm and then gain secure property rights so long as they paid taxes.
- The state built roads that provided access to new lands and constructed irrigation works that were especially important before 1980 or so. Thereafter these investments were complemented by more spending on rural education, electrification, and telecommunications. Public investment in large-scale irrigation gave way to policies supporting private investment in smaller-scale irrigation.
- Public agricultural research has contributed as well. With intensification of Thai agriculture, uptake of agriculture research outputs has increased; as seen with modern rice varieties, use of improved rubber trees, and improved varieties for maize, soybean and cassava.
- To resolve failing rural credit markets, the Bank of Thailand instructed all commercial banks to allocate 5% of all commercial loans for agriculture at an interest rate lower than the market. The Bank for Agriculture and Agricultural Cooperatives (BAAC) has subsequently expanded provision of agricultural credit to 90% of farm households and all farm cooperatives, using a group liability guarantee which enables small farmers to access short-term credit without land title deeds as collateral.
- More recently the state has promoted certification to allow farmers to develop premium domestic markets;
- Government has sought to promote agricultural exports through active participation in trade talks, in multilateral, regional and bilateral negotiations.
- Although agriculture was heavily taxed in the early stages of industrialisation, the state had the wisdom to ease this subsequently, once manufacturing was not so dependent on farming for resources.

Source: Material provided to OECD by Leturque & Wiggins, 2010.

5. Conclusions

66. This report has pointed to the inevitability of structural change in the agricultural and rural economy, the consequent implications for adjustment among smallholders and other agriculture-dependent households, and the associated need for policies that facilitate rather than impede that process. A strategic framework has been proposed to assist policy makers in choosing the appropriate mix of policy instruments.

67. A key premise of that framework is that, for the majority of agriculture-dependent households, their long term (*i.e.* inter-generational) future lies outside the sector. This is true even in the context of improving opportunities within the agriculture sector as a whole. Hence, while policies need to improve opportunities within agriculture for those who potentially have a competitive future in the sector, they also need to create wider opportunities for who do not, or could earn higher incomes elsewhere. For both types of development path, many of the necessary policies will not be agriculture-specific, so it is important that agricultural policies are framed in a broader economy-wide framework, and that rural development policies are not equated with agricultural policies.

68. Justifications for the use of agricultural market interventions (either in output or input markets) rely on the notion that they are a pragmatic option when ideal choices are not available: market interventions induce efficiency losses and hence do not provide a theoretically optimal way of providing social protection (where social safety nets are to be preferred); nor, in the absence of market failure, are they the ideal way of fostering growth, since they treat the symptoms of a lack of development rather than its underlying causes. By contrast, the provision of public goods (including investment in agricultural research) is not just theoretically superior but of proven value. Here, there is a case for prioritising agriculture at early stages of development and gradually shifting the balance of public spending as the economy develops and diversifies.

69. Nevertheless, plausible reasons have been advanced for why, given weak institutions, high transactions costs and endemic market failures, some agriculture-specific interventions might be desirable. For such arguments to be properly substantiated, there needs to be a clear distinction between instruments that are effective at raising incomes and reducing poverty in the short-term, and those that have an enduring effect by promoting long-term economic development. There may be trade-offs as well as complementarities between the two. For example, input subsidies may have an immediate impact on the incomes of the poor, but could thwart the development of private dealer networks and ultimately impede agricultural development. Similarly, price stabilisation may provide a quick response to extreme price shocks, but can be difficult to sustain systemically over the long term. Arguments concerning the use of these two particular policies are explored in documents **TAD/CA/APM/WP(2010)45 and TAD/CA/APM/WP(2010)44** respectively. One particular issue which needs to be investigated is the short to medium term welfare and distributional impacts of alternative policies. These are investigated with a rural economy-wide model, the Development Policy Evaluation Model (DEVPEM).

70. The strategic framework presented in this paper seeks to order an analysis of which types of policies are most appropriate for smallholder farmers and can contribute to faster progress on MDG1. It also attempts to delineate the role and limitations of agricultural policies in particular. A central conclusion is that it is the *policy mix* that matters, so empirical analyses of policy effectiveness need to take account of possible complementarities and trade-offs between alternative agricultural and non-agricultural instruments. The former may include the complementarities between agricultural extension and the development of infrastructure and broader investments in human capital; the latter, the opportunity cost of using different expenditure mechanisms (*e.g.* providing input subsidies versus making longer term investments in rural roads or in non-agricultural areas such as health and education). A more formal analysis of these linkages would help inform policy choices.

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