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# Urbanization and changes in farm size in Sub-Saharan Africa and Asia from a geographical perspective, a review of the literature

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A Foresight Study of the  
Independent Science and  
Partnership Council

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The **Independent Science and Partnership Council** (ISPC) aims to strengthen the quality, relevance, and impact of science in the Consultative Group on International Agricultural Research (CGIAR).

Foresight Studies analyze emerging issues and trends with the objective of quantifying the research challenge and the potential impact for agricultural research.

# **Urbanization and Changes in Farm Size in Sub-Saharan Africa and Asia from a Geographical Perspective, a review of the literature**

**Final paper for the 'Trends in Urbanization and Changes in Farm Size in Developing Countries: Implications for Agricultural Research', CGIAR's Independent Science and Partnership Council (ISPC)**

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## Summary

### Urbanization trends in sub-Saharan Africa and South Asia

The past century has entailed a relatively speaking rapid redistribution as well as growth of urban populations, with the urban population surpassing the rural one for the first time in 2008. Processes of urban growth and their implications for farming and changes in farm sizes especially are likely to be shaped both by global influences as well as more localized aspects. Spatial perspectives related to the distribution of people among urban areas of different size, the nature of production systems and how these are shaped by the proximity to urban areas are relevant in this respect. The study assesses the available empirical data on urbanization trends and changes in farm size in the context of South Asia and Sub-Saharan Africa on the basis of these perspectives.

Urban population growth is determined by natural growth, migration and reclassification/boundary changes. Definitions of urban areas however vary widely among countries. Comparability is further confounded by differences in the physical delimitation of urban areas as well as a general lack of census data.

The case is sometimes made that African urbanization is exceptional. The source of such exceptionalism lies in two features: the unprecedented pace as well as the nature of urbanization, as it is seen to occur without the expected economic development. Recently, these particular perspectives have been taken to task: a number of studies point to the slowing of African urbanization rates or even counter-urbanization in some countries. Although Africa is one of the last continents to experience the urban transition the African rate of urbanization by historical comparison is not exceptional. African urban growth is predominantly driven by natural increase, the effect of generally high fertility rates. In the literature, wider economic and social processes provide explanations for slowing urbanization, where the downturn in urban economic fortunes and a reconstitution of rural-urban linkages is associated with stagnating urbanization rates. Falling urban living standards, rising urban poverty and a narrowing rural urban income gap explain the tapering off of rural migration streams to urban areas as seen in official statistics. While African urbanization, like elsewhere is associated with economic growth urbanization has been less successful in lowering poverty rates than in Asia. The rise of *consumption cities* are noted in the literature, where spillover effects are lower than in the Asian type production cities based on industrialization. Recent rapid economic growth has tended to reinforce some of the consumption characteristics of African urbanisation, as seen by the primary commodities booms in the post-millennial period.

Southern Asian urbanization is determined to a great extent by Indian urbanization levels and trends. The Indian criteria for defining urban areas are more exacting than in most countries, however. The large difference between official figures of urbanization and the World Bank's agglomeration index for South Asia suggest that levels of urbanization in the region as a whole are underestimated. Urbanization has been much slower in Southern Asia than in sub-Saharan Africa and is driven to a larger degree by migration. The views as well as empirics of Indian urbanization are matters of interpretation, with some commentators stressing the exclusionary tendencies of urbanization and migration both at present and in the past. This interpretation has been questioned in light of the preliminary results from the 2011 census, with the expansion and upgrading of existing urban areas in the period between 2001 and 2011 diverting from earlier patterns. For the latest intercensal period the share of natural growth in urban growth has dropped dramatically. Another remarkable difference is the increasing role of reclassification, which accounts for nearly a third of urban growth. In this sense, urbanization is occurring *in situ*, rather than through migration. The emergence of new towns around cities is occurring, although importantly many of these cities are not the megacities, while the autonomous growth of small towns often in clusters is also noted. While the former pattern is suggestive of the geographical expansion of existing

urban areas, the latter points to the potentially dynamic role of small regional centres as sources of markets and services for rural hinterlands.

### **Farm size changes in sub-Saharan Africa and South Asia**

Africa and Asia are the only continents where average farm size has declined over the past four decades. In sub-Saharan Africa the average farm size was 2.4 hectares in the 1990s. More recent changes in farm size, covering twenty one regions in eight African countries (the Afrint project) for the period between 2002 and 2008 confirm the declining trend in farm size that has been reported on by others. The average farm size of 2.42 hectares in 2002 is close to the average farm size figure for SSA for 1990s, a figure which by 2008 had fallen to 2.16 hectares. Behind the averages are large variations in the size of holdings among land size quartiles. Parts of SSA appear to become more Asian-like in terms of farm size as well as in terms of land distribution. Breaking the sample by region shows that the variation within countries is also large, depending in part on agro-ecology, with land sizes generally being larger in dryer, more extensive production systems. The effect of relatively speaking smaller farm size varies greatly depending on the characteristics (both physically as well as economically) of the regions.

The Asian trend likewise has been one of shrinking average farm size. In spite of recent decades of relatively rapid and steady economic growth, the number of small farms (less than 2 ha) has been growing rapidly in several of Asia's developing countries. The decline in farm size has been driven primarily by growing rural populations and sub-division of land upon inheritance, while total cultivated area in the sector has remained quite stable during the past decades. The rapidly growing number of small farms suggests that agriculture, as a continuing source of employment and self-employment, has been contributing to a slower movement out of agriculture than implied by high economic growth rates. In combination with a relatively limited absorptive employment capacity of the urban economy a growing rural labor force implies that workers, especially unskilled and semi-skilled ones, are stuck in the rural areas. Skills, education, age and proximity to towns come out as the most influential factors increasing the odds of moving out of agriculture. The relative strength of the rural economy, partly explained by pro-rural policies and public investments, in providing employment opportunities, particularly in the nonfarm economy can, if the past decade's development continues, be expected to create growing markets for agricultural products, particularly for high-value products.

### **Effects on poor households in urban and rural areas**

Given the linkages between the non-agrarian and agrarian sectors of the economy, either directly through market based interactions, or indirectly through largely invisible household transfers of food and remittances, the effects of urbanization and changing farm sizes are likely to be felt both in rural and urban areas. Three broad effects of urbanization and changing farm sizes can be discerned in urban areas, with possible repercussions also for agriculture in rural areas. Firstly, changing urban dietary patterns as part of the nutrition transition and evolving gender roles affects urban food security directly, especially in the context of growing import dependency. Secondly, the importance of urban agriculture as a source of food and income needs to be considered as a "ruralisation" of urban landscapes and livelihoods. Finally, the role and resilience of informal safety nets and rural urban linkages as sources of food should also be acknowledged.

In the rural areas a number of effects on land use patterns and production systems can be noted: Urban land use conversion may lead to more intensive production of remaining agricultural land while urban growth may encourage urban and peri-urban cultivation to supply expanding urban markets with perishable goods. In the South Asian context, migration to urban areas has been noted to ease land constraints among landless households.

The rising importance of convenience foods in urban settings and the increased role of supermarkets and fast food chains as suppliers of such foods to urban consumers also carry implications for smallholders. Growing demand for high value crops arising from higher incomes in urban areas is noted as an important source of rising smallholder incomes in a number of countries both in Africa and South Asia. Domestic urban markets provide more stability than global markets. While production of perishables for urban markets has clear spatial limits, especially in areas with poor infrastructure, the dietary shift towards vegetable oils and sweeteners as part of the nutrition transition may contain some prospects for widening smallholder involvement, for instance in palm oil and soybean and sugar cane production also in less well-connected areas.

Spatial aspects of urbanization are also important, however: densely populated areas in close physical proximity to existing urban areas or well-connected to infrastructure leading to such areas, are likely to benefit most from urbanization. While theoretical perspectives tend to stress class-based selectivity in processes of growth, geographical selectivity may be equally germane.

While remittances are important both as direct sources of income, responsible for around a third of annual income among the Indian poor and landless, their indirect effects on agriculture vary with evidence of their role for raising agricultural productivity differing considerably. Evidence from Bangladesh and Pakistan suggest that remittances were used primarily for consumption, however. In this context, it is important to note the indirect effect of remittances as sources of growing demand. The share of remittances as part of cash incomes in many parts of Africa is generally small and has a clear regional profile tied to historical mobility patterns.

Food transfers from rural relatives are important sources of supplementary food in urban areas in sub-Saharan Africa. The effects of these transfers on the food security for the remitting households, have however been shown to be predominantly negative.

### **Conclusions and recommendations**

Given the continuing role of smallholder agriculture as the backbone of livelihoods as well as the agrarian sector as a whole in South Asia, incipient urban centres may be important sources of demand for increasingly high value products, especially in relation to towns that are developing on the fringes of metropolitan areas. Here agrarian policies focused on smallholder based, intensive peri-urban agriculture may be the most relevant, where the special concerns over food safety and environmental management in high density settings, may be borrowed from research on urban agriculture. Strategic areas of research in these contexts would be a focus on extension and education to meet food safety and consumer standards, while encouraging market co-ordination to more effectively engage in urban markets.

Research on sub-Saharan Africa points to less straightforward conclusions: A variety of self-provisioning arrangements are especially important to urban food security in the African context. In effect these family based provisioning systems – while important to individual households - may undermine the already weak role of small towns as sources of market based demand for rural produce. On the rural side, the need for localized contextualisation is crucial, given the often spatially limited consumption linkages of urban areas. The positive effects of urban growth are likely to be felt close to large cities where the concentration of higher incomes and the nutrition transition affects dietary patterns and demand size as well as composition. Encouraging high value, intensive agriculture in dynamic, well-connected, densely populated settings makes sense with relevant policy interventions largely mimicking those outlined in relation to Asian markets above.

In the most marginal areas, households trapped in Malthusian situations, characterized by a poor resource base, high dependence on external inputs, poor accessibility, relatively rapid

land division and limited skills and education are likely to be untouched by urbanization. The policy solutions in such regions must rest primarily on basic measures to improve food security. In less marginal regions, although farm size constraints may be relatively unimportant, while intensification of land use is prevented by lack of labour (possibly as a result of migration) and the generally precarious situation characteristic of smallholder agriculture, a number of complementary aspects could be addressed: the interaction between livestock and production, extension services and technologies tuned more closely to the needs of women, and institutional constraints in credit and land markets.

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## Introduction

The post-World War II period has seen the emergence of a set of radical shifts in food systems linked to wider economic global changes and tied to long term economic growth, trade liberalisation and innovations both in agricultural and transportation technology. These processes need to be situated in relation to demographic, social and cultural changes that have arisen in the wake of global trends, but are also likely to give them distinctly regional, national or even local shapes.

Growing global populations alongside alterations in dietary patterns and energy consumption has increased the demand for agricultural products as food, animal feed and feed stock for bio energy uses (Mitchell 2008). Such long term demand increase was accompanied by more urgent influences on food prices in 2008, when a series of droughts, diversion of maize for biofuel use in the US, export bans on rice among leading producers as well as speculative behaviour in grain markets contributed to breaking four decades of declining food commodity prices. Although expectations of the future direction of global food prices vary (Pingali 2010, IFPRI 2011) food price increases in countries as diverse as Haiti, Egypt and Mexico pointed starkly to the globalized nature of the food system. The food price crisis also reflected an increasingly liberalised global trade regime which has gradually eliminated the agricultural trade surplus of developing countries and recast these countries in the role of net importers (Pingali 2007). For the least developed countries in particular, the agricultural trade deficit is forecast to widen over the next couple of decades (FAO, cited in Pingali 2010).

Large scale foreign land acquisitions (land grabs) in a number of African countries in this context point to growing concerns among populous and increasingly economically powerful countries over access to cultivable land for meeting future food and energy demands, with potentially devastating consequences for smallholders affected by such land deals (World Bank 2010, Alden Wily 2011, Cotula and Vermeulen 2011, Djurfeldt 2011).

Tied to shifts in global patterns of demand are also increasingly globalised structures of procurement and food retailing as well as changing consumer preferences. Growing foreign direct investment in the agricultural sector and food processing industries in developing countries, the increasing role of supermarkets and a Westernization of dietary preferences interact to shape the process of the nutrition transition among increasingly urbanized populations, while also affecting rural smallholder producers through new demands (Reardon 2007, McCullough, Pingali et al. 2008). Meanwhile the vulnerability of small producers to climate change effects are forecast as particularly problematic, especially in sub-Saharan Africa (Annez, Buckley et al. 2010, De Zeeuw, van Veenhuizen et al. 2011).

These global transformations, their national and sometimes even local consequences need to be viewed also in relation to contemporaneous demographic, political and social processes. At a general level how developing countries progress through the demographic transition carries important qualifications viz. global population growth (and demand for food) (Lutz and Samir 2010). This transition, although it may be directly shaped by political imperatives in countries enforcing draconian birth control measures, will in most countries be more influenced by intangible and largely unforeseeable dynamics tied to gender relations and education policies especially. The shape of the demographic transition and its consequences is also affected by population distribution among rural and urban areas. The past century has entailed a relatively speaking rapid redistribution as well as growth of urban populations, with the urban population surpassing the rural one for the first time in 2008. Indeed, UN projections suggesting an increase in the global urban population of more than a



billion people within the next fifteen years contrast starkly with a largely stagnant rural population (Satterthwaite, McGranahan et al. 2010).

Processes of urban growth and their implications for farming and changes in farm sizes especially are likely to be shaped both by the global influences outlined above as well as more localized aspects. Economic factors have perhaps received the most attention in the literature and concern the forward and backward linkages between agriculture and the nonfarm sector as economies progress through the process of structural transformation. These however need to be complemented by spatial perspectives related to the distribution of people among urban areas of different size, the nature of production systems and how these are shaped by the proximity to urban areas. The links between rural and urban areas also serve as qualifiers of urbanization processes and changes in farm sizes and production systems. Such linkages operate both through markets as well as household based transfers of food, money and knowledge. Recognition that such spatial processes are shaped also by political will (or the lack thereof) also needs to be given.

The following study aims to assess the available empirical data on urbanization trends and changes in farm size in the context of South Asia and Sub-Saharan Africa on the basis of these perspectives. For this purpose we propose to answer the following research questions around which the report is structured:

- What are the global and local drivers and processes of urbanization and farm size changes as part of the structural transformation in Sub-Saharan Africa and South Asia, respectively. What does the empirical data tell us in terms of city size distribution?
- What are the effects of these drivers on agriculture and food security in urban areas?
- What are the effects of these drivers on agriculture and food security in rural areas?

## Empirical tendencies in Africa and Asia

### Measuring urbanization and its drivers

Theoretical perspectives highlight the potentially dynamic or parasitic roles of cities and towns in sometimes normatively charged discussions of the social and economic consequences of the spatial and sectorial redistribution of populations away from farming. In less value laden terms, this process is simply a demographic one. In this regard the distinction between the *rate of urbanization* that is the rate of increase in the share of urban population and the *urban population growth rate*, which is the sum of the national (or regional) population growth rate and the urbanization rate, is an important one. Urban growth hence is driven by natural increase as well as rural to urban migration with the combination between the two varying regionally and nationally (McGranahan, Mitlin et al. 2009). For urbanization to occur the urban population growth rate must be higher than the rural one and the share of urban population must be increasing (Potts 2012a). To these demographic mechanisms should be added classificatory aspects which redefine agglomerations as urban when a certain population threshold is passed. In statistical and demographic terms therefore urban population growth is connected to natural growth, migration and reclassification/boundary changes (Beauchemin and Bocquier 2004, Bhagat and Mohanty 2009).

Since urbanization rates and urban growth rates measure population (re)distribution over time, universal definitions are crucial to international comparability. Definitions of urban areas however vary widely among countries. In populous countries, such as India and China as pointed out by Satterthwaite (Satterthwaite 2007, Satterthwaite 2010) a change in census criteria for urban areas would alter global levels of urbanization, while similarly, shifts in

thresholds for regionally important countries such as Nigeria or Brazil would change the size of the urban population in Africa and South America (2010:3). Comparability is further confounded by differences in the physical delimitation of urban areas as well as a general lack of census data, especially in sub-Saharan Africa. Population data (whether as censuses or estimates) as well as urban classifications tend to carry political implications as they may determine electoral constituencies, access to government resources or hold bureaucratic implications for industrial location.

Despite these shortcomings, most cross-country analyses of urbanization levels, urban population growth and urbanization rates are based on the *World Urbanization Prospects* published by the United Nations Population Division since the mid-1970s. In turn these are calculated on the basis of census data from individual countries, used as baselines in population projections that frequently become the subject of downward revisions. Since the comparability of such data is limited some attempts have been made both by individual research groups, such as the e-Geopolis programme (E-geopolis no date) and the World Bank (World Bank 2009) to construct universal indices. The approach of the e-Geopolis projects is to map settlement agglomerations (SAs) on the basis of contiguous (less than 200 meters apart) built-up areas of above 10 000 inhabitants using satellite data to match them with census and other official population data. The World Bank (2009) using a similar technique constructs a universal measurement, the *agglomeration index* covering the situation in the year 2000 (Chomitz, Buys et al. 2005, Uchida and Nelson 2008, see World Bank, page 55 for a description). While the agglomeration index enables comparison among countries, the lack of time-series data still means that the *World Urbanization Prospects*, although hedged by numerous caveats, is the only global, longitudinal dataset covering urbanization tendencies.

Comparing the agglomeration index with UN data is illustrative, but also points to the drawbacks of applying universal population thresholds to different geographical and historical contexts (Rigg, Bebbington et al. 2009). While the global urban population level as calculated by the agglomeration index (52 %) is roughly similar to the 47 % reported by the *World Urbanization Prospects* for the year 2000, the figures for South Asia differ widely as a result of very high population densities, with the agglomeration index pegging urbanization in the region at 42 % compared with 27 % for the *World Urbanization Prospects*. In the case of sub-Saharan Africa, the exclusion of small settlements in the agglomeration index instead deflates the UN figures somewhat setting urbanization just below rather than slightly above 30 % in 2000 (World Bank 2009, Potts 2012a). While measuring and comparing levels of urbanization across countries and regions is fraught with definitional difficulties, any discussion of urbanization also needs to be framed by a regionalized understanding of economic, historical and political processes. Given the wide margins of error of the projections in the *World Urbanization Prospects* database only data covering the period until 2010 will be discussed below.

### **African urbanization trends and drivers**

On the basis of the *World Urbanization Prospects* (United Nations 2012), Sub-Saharan Africa as a whole had an urbanization level of around 37 per cent in 2010, the second lowest regional figure in the world, with South Asia's figure being the lowest. As suggested by table 1, the regional variation in urbanization is large, with Southern Africa diverting positively and Eastern Africa negatively from this level. The explanation for this pattern lies in the historical fabric of migrant labour systems and urbanization patterns especially of Southern Africa, which were based on divorcing the male workforce from the land to redirect labour into the mines and industries of apartheid South Africa.

*Table 1: Urban and rural population and urbanization levels in Sub-Saharan Africa, by region, 2010*

Region	Urban	Rural	Total	Percentage urban
Sub-Saharan Africa	309 463	533 786	843 249	36,7
Eastern Africa	81 172	261 679	342 850	23,7
Middle Africa	53 881	76 101	129 981	41,5
Southern Africa	34 287	23 925	58 212	58,9
Western Africa	140 124	172 081	312 205	44,9

Source: United Nations, Department of Economic and Social Affairs, Population Division (2012)

Low initial levels of urbanization in combination with what are now considered to have been overestimates of projected future urban growth has led to alarmist claims of impending over-urbanization. In this context, the case is sometimes made – especially among policy makers – that African urbanization is exceptional. The source of such exceptionalism lies in two features: the unprecedented pace (Commission for Africa 2005, UN-Habitat 2008) as well as the nature of urbanization, as it is seen to occur without the expected economic development (Bairoch 1988, Fay and Opal 2000). African urbanization is perceived as poverty driven and characterized by an exodus of the rural poor to growing urban areas (Todaro 1997, Locatelli and Nugent 2009) while urban areas are unable to create formal employment for incoming migrants (Bryceson 2006). African urbanization (and migration) hence is seen as an indicator as well as a cause of underdevelopment.

Recently, these particular perspectives have been taken to task by various commentators who nonetheless highlight *other* distinctive characteristics of African population growth and migration processes. At a general level, as suggested above, estimates (and projections) of African urbanization rest on shaky methodological grounds, given a lack of reliable data, with population estimates for some countries being based on projections from censuses taken more than twenty years ago (Satterthwaite 2010). Potts (2012b) argues that overestimations of African urbanization rates stem from projections based on urban growth patterns from the 1960s when post-Independence investment in social infrastructure and industrialization in combination with the lifting of colonial mobility controls attracted large numbers of migrants to many capital cities. Slowing urbanization is also explained by the resolution of a number of refugee crises, leading to less forced migration (White, Blessing et al. 2008). More sluggish urban growth from the 1980s onwards is reflected also in the figures from the *World Urbanization Prospects*: whereas the urban population share increased by 4.6% and 4.4% in the 1960s and 1970s respectively, this increase had dropped to 4 % for the 1990s and only rose slightly to 4.1% in the first decade of the new millennium.

While a number of studies point to the slowing of African urbanization rates or even counter-urbanization in some countries, Africa as a whole is still experiencing urban growth. Although Africa is one of the last continents to experience the urban transition (a change away from rural residence and agricultural livelihoods to urban residence and non-agricultural livelihoods), the African rate of urbanization by historical comparison is not exceptional, however (Montgomery 2008).

McGranahan et al. (2009) show that in contrast to Asia, African urban growth, is predominantly driven by natural increase (p. 6-7) being the effect of generally high fertility rates (Vimard 2008). This confirms results from an earlier UN study (Chen, Valente et al. 1998), which suggested that as much as 75 % of urban growth in the 1980s was related to natural increase. Such figures contrast starkly with the 1960s and 1970s when 40 % of urban growth was related to rural urban migration, directed mainly towards large cities (Tacoli 2001). Reclassification meanwhile accounted for more than a quarter of urban growth

in the period 1950-1980 (Moriconi-Ebrard 1993, Beauchemin and Bocquier 2004, McGranahan, Mitlin et al. 2009). More recent data are not available and as cautioned by Potts (2012b), data quality on small settlements is often poor and requires a country by country approach to enable assessment, while the demographic composition of urban growth also varies by country.

Numerous studies suggest that urban growth rates declined in the 1980s and 1990s (Bocquier and Traoré 2000, Beauchemin and Bocquier 2004). Potts (Potts 2005, Potts 2009, Potts 2012a, Potts 2012b) in a number of contributions using recent censuses and survey data points to slowing urbanization rates also since then: counter-urbanization has occurred in a handful of countries, while others have experienced very slow urbanization rates of 1 per cent or less in the 1990s and early 2000s (Potts 2012a). A comparison of West Africa's official levels of urbanization and urban growth rates with the Africapolis dataset (part of the E-Geopolis research project), shows a general overestimation of both levels and rates of urbanization (Africapolis 2011, Africapolis 2012). In the case of Africa's most populous country Nigeria, the Africapolis data shows that four out of five major towns actually had lower growth rates than the country as a whole for the census period 1991-2006 (Potts 2012b).

The decline in rural in-migration as a source of urban growth is in statistical terms related to the falling share of rural population over time as this decreases the available pool of migrants, even if the probability of out-migration is unaltered (Beauchemin and Bocquier 2004:2251). While the theoretical literature on regional transformation dynamics tends to stress the role of small towns, the distribution of the African urban population has over the past few decades shifted towards larger urban areas, with 3.6% of the share of the urban population living in cities of more than 10 million in 2010, compared with none in 2000. Cities of between one and five million inhabitants have relatively speaking experienced the largest increase in share of urban population since 1980, however. Such areas accounted for 17.1% of the urban population in 1980 and by 2010 contained nearly a third (28.7%) of urbanites in sub-Saharan Africa as a whole (United Nations 2012). This however is not unexpected as countries move through the urban transition and is not necessarily a sign of migration towards the larger cities from smaller ones, but rather shows the graduation of smaller settlements as population thresholds are crossed. It is also important to note that the brunt (54.6%) of the urban population in the region still resides in cities of less than half a million inhabitants.

In the literature, wider economic and social processes provide explanations for slowing urbanization, where the downturn in urban economic fortunes and a reconstitution of rural-urban linkages is associated with stagnating urbanization rates. The informalization of livelihoods in the wake of structural adjustment programmes and trade liberalisation, falling urban living standards, rising urban poverty and a narrowing rural urban income gap explain the tapering off of rural migration streams to urban areas as seen in official statistics (Zulu, Konseiga et al. 2006, Mabogunje 2007, White, Blessing et al. 2008). In turn these processes are considered to be related to the effects of global competition on urban areas, which although strategically placed in geographical terms, have poorly diversified economies and small manufacturing sectors, being primarily service based and informalized (Bryceson and Potts 2006, Lindell 2010). In part these explanations may inform the notion of the exceptional *nature* of African urbanization as "growth less" and poverty driven (Annez, Buckley et al. 2010). Also this source of exceptionalism is challenged by some commentators: Kessides (2006) for instance, notes the positive relationship between urbanization and economic growth in the 1990s also for Africa.

As suggested by Gollin, Jedwab and Vollrath (2012) African urban trajectories may be distinctive also on other counts, however as urbanization is tied to natural resource exports or rural cash crop production and surpluses generated from these exports are spent on urban goods and services. This drives the rise of *consumption cities*, where spillover effects

are lower than in the Asian type production cities that are based on industrialization (p. 3; see also Jedwab 2011 ). The African structural transformation path for this reason may contain smaller agglomeration effects than the classical Asian case (Fafchamps 2003) while the openness of the global trade regime enables imports of agricultural goods to compensate for low agricultural productivity (Teigner 2011). Trading is also characterized by higher volatility and lower value added than manufacturing, while exposure to global competition has encouraged deindustrialization within the manufacturing sector. Recent rapid economic growth has tended to reinforce some of the consumption characteristics of African urbanisation, as seen by the primary commodities booms in the post-millennial period (McGranahan, Mitlin et al. 2009).

The decline in migration as a source of urbanization is also reflective of longstanding patterns of permanent migration being replaced by circular migration, or seasonal migration as one of many ways of handling urban uncertainty (Andersson 2002, Simon, McGregor et al. 2004, Potts 2009). Whether this is a new phenomenon or not is however more difficult to assess: movement to small urban centres in the agricultural off season has been historically tied to droughts and other types of environmental stress (McGranahan, Mitlin et al. 2009), while migrant labour systems and regionalized trade patterns have encouraged multi-spatial livelihoods for many decades (Van Onselen 1976, Stichter 1982).

Net in-migration as a source of urban growth, hence is slowing and there is also some suggestion of declining natural increase. While urban death rates have been significantly lower than their rural counterparts the rural urban gap in fertility rates has been much smaller. The assumption has been that the youthful profile of migrants and their rural background has maintained rural reproductive behaviour. As shown by a review by Beauchemin and Bocquier (2004), fertility rates in a number of African cities fell in the 1980s and 1990s by more than one birth per woman as a result of movement itself as well as adaptation to urban fertility regimes. Findings of decreasing urban birth rates during the 1990s are confirmed also for developing countries in general as well as in a number of case studies from West Africa. Moreover, signs of falling urban fertility rates are confirmed on the basis of more recent Demographic Health Surveys in a number of African countries (see Potts 2010; Potts 2012a).

Taken together, the trends in African urbanization suggest that even if African cities will continue to grow, for the foreseeable future Africa will be a predominantly rural continent if measured in terms of population distribution or employment structure.

### **South Asian urbanization trends and drivers**

Southern Asia in 2010 had the lowest global level of urbanization at 32.6%. Given India's large share (nearly 72%) of the total regional population, this figure is determined to a great extent by Indian urbanization levels. As argued by a number of commentators (Bhagat 2005, Denis, Mukhopadhyay et al. 2012, Pradhan 2012) the Indian criteria for defining urban areas are more exacting than in most countries, however. The relocation of industrial activities to rural areas may also contribute to a blurring of functional distinctions of rural and urban areas (Ghani, Goswami et al. 2012). A similar problem is raised in relation to Pakistan, where the level of urbanization is considered to be underestimated, since informal settlements on the peripheries of large cities are not included (Hasan and Raza 2009). The large difference between official figures of urbanization (32.6% in 2010 using UN data) and the World Bank agglomeration index (42% in the year 2000) for South Asia also indicate that levels of urbanization in the region as a whole are underestimated.

As suggested by table 2, urbanization levels vary greatly, within the region. In addition, poor data quality (see Hasan and Raza 2009) and the security situation in Pakistan, the war in Afghanistan and the closed nature of Iran makes it difficult to generalize about urbanization trends.

*Table 2: Urban and rural population and urbanization levels in Southern Asia by country, 2010*

Region and country	Urban	Rural	Total	Percentage urban
Southern Asia	562 971	1 165 507	1 728 477	32,6
Afghanistan	7 613	24 746	32 358	23,5
Bangladesh	42 698	107 795	150 494	28,4
Bhutan	263	476	738	35,6
India	388 286	853 206	1 241 492	31,3
Iran	51 661	23 137	74 799	69,1
Maldives	132	188	320	41,2
Nepal	5 176	25 309	30 486	17,0
Pakistan	63 967	112 778	176 745	36,2
Sri Lanka	3 175	17 871	21 045	15,1

*Source: United Nations, Department of Economic and Social Affairs, Population Division 2012*

Urbanization has been much slower in Southern Asia than in sub-Saharan Africa, declining from an increase of 4 per cent annually in the 1970s to 3 per cent in the 1980s to as low as 2.5% per cent in the 1990s, with an increase of 3.3 per cent annually between 2000 and 2010. Outside Iran, the most rapid change in urbanization levels has occurred in the Maldives and Bangladesh, while Sri Lanka's population has counter-urbanized in every decade since the 1960s.

Bangladesh constitutes an interesting case with as much as two thirds of urban growth being attributed to migration since independence. Balancing of sex ratios has resulted from the independent movement of women to take up work in the ready-made garment industry since the mid-1980s (Afsar 2003). Pakistan, meanwhile has an urbanization profile closer to the African one, with 70.3 % of urban growth between 1981 and 1998 being attributed to natural increase (Iffat and Zaman 2002).

While urbanization has on the whole been relatively slow, there has also been a shift in the size class distribution of urban settlements – there were no cities in the region with populations of 10 million or more in 1980 but by 2010 15.3% of the urban population was living in mega-cities of this kind. Although city size distribution is top heavy in one sense, it is also characterized by a bulge in the middle with a relative increase in the share of urban populations in cities of medium size (1-5 million) occurring at the expense of very large cities (5-10 million inhabitants) and smaller urban settlements (less than 500 000 inhabitants) especially. The majority (51.4%) of the urban population, however, like in Africa, lives in the latter type of settlements, although this share of the total, with 60.9%, was higher in 1980.

### **Indian Urbanization**

Given its large share of the total population of Southern Asia, India in terms of its influence on regional urbanization levels and rates deserves special treatment in any discussion of social and economic processes focusing on Southern Asia.

The views as well as empirics of Indian urbanization are matters of interpretation, however, with some commentators stressing the exclusionary tendencies of urbanization and migration both at present and in the past (Kundu 2011, Nijman 2012). In this interpretation a general slowing of urbanization in the 1990s, compared with the earlier post-independence decades, is tied to the deregulation of the Indian economy in the 1990s. The opening of the economy to global processes of growth alongside neoliberal policies of decentralisation have concentrated urban growth in well-connected metropolitan areas and the more developed



states while the withdrawal of government support to backward districts has ended four decades of high urban growth in these areas (Kundu 2011, pp. 22-24).

Recently, this interpretation has been questioned in light of the preliminary results from the 2011 census and data from the e-Geopolis project (the Indian subset of data is known as Indiapolis ) (Indiapolis no date ). Indian census data may, however be underestimating urbanization levels through the use of functional criteria (at least 75 % of male employment outside agriculture) alongside population thresholds (more than 5000 inhabitants) density (400 people per square km) as well as administrative criteria. Recent public expenditure priorities focusing on rural areas may also temper interest in reclassification from rural to urban among local authorities. Using the Indiapolis data Denis and Marius-Gnanou (2011) found that 37.5% of the population was residing in settlement agglomerations, compared with the official urbanization level of 28%. Indian urbanization also needs to be situated in relation to generally high population densities and the implications of these for accessibility to urban markets and income opportunities. More than half of India's population lives within one hours' travel time from a town of at least 50 000 inhabitants (Uchida and Nelson 2010 cited in Denis, Mukhopadhyay and Zerah 2012: 54).

The concentration of urban growth to cities and million cities is also questioned. As pointed out by Bhagat and Mohanty (2009:11): although populations are increasingly concentrated in large cities, the growth rate of smaller urban areas is largely similar and has been since the 1980s. The expansion and upgrading of existing urban areas in the period between 2001 and 2011 in some respects diverts from earlier patterns, however. For the period 1991-2001, Bhagat and Mohanty (2009) report a composition of urban growth comprised of 57.6% natural increase, 12.3% net reclassification of rural to urban areas, 20.8% rural to urban migration and 9.2% jurisdictional changes (p. 16). For the latest intercensal period, Bhagat (2011) estimates that the share of natural growth in urban growth has dropped dramatically to 44%, while 56% is due to reclassification, expansion of boundaries and migration. Although there are no exact figures of migration rates using the latest census data, these have been roughly similar during the last decades, around 20 % (HPEC 2011).

A remarkable difference is, however the increasing role of reclassification as a source of urbanization, which Pradhan (2012) puts at 29.5%. In this sense, urbanization is occurring *in situ*, rather than through migration. The emergence of new towns around cities of more than 100 000 inhabitants is occurring, although importantly many of these cities are not the megacities, while the autonomous growth of small towns often in clusters is also noted. While the former pattern is suggestive of the geographical expansion of existing urban areas, the latter points to the potentially dynamic role of small regional centres as sources of markets and services for rural hinterlands. Denis, Mukhopadhyay and Zerah (2012: 55-56) also question the frailty of India's smaller urban economies: using NSS data on employment shares from 1993 to 2010 they compare the employment structure of metropolitan regions with other urban areas and find that they are largely similar and based on traditional services and manufacturing.

### **Urbanization, poverty and sources of future uncertainty**

While both trends and drivers of African and South Asian urbanization are matters of interpretation some general statements can be made: projections of urbanization have in the African case tended to produce visions of sprawling megacities inhabited by increasingly impoverished people fleeing an even poorer rural existence. In the Asian case similarly, although existing urbanization appears to have been underestimated, urbanization as a poverty driven process underpins the views of some commentators. While the global share of the urban poor as well as their absolute number has increased over time as shown by Ravallion, Chen et al. (2007) the authors point out that in most regions this is tied to the

poverty reducing process of urbanization which has tended to ease rural poverty faster than urban poverty: “over 1993-2002, while 50 million people were added to the count of \$1 a day poor in urban areas, the aggregate count of the poor fell by about 100 million, thanks to a decline of 150 million in the number of rural poor (p. 693).” Their analysis of the globalization of poverty lends credence to the exceptionalism of African urbanization, however, where urbanization (although not associated with lacking growth) has not generally been accompanied by declines in total poverty rates.

Even a cursory glance at more recent figures of rural and urban poverty headcount rates (using national poverty lines), reaffirms the difference between South Asia and Sub Saharan Africa (Tables A.1 and A.2 in Appendix 1). In South Asia, although the difference in rural and urban poverty headcount rates is shrinking, this is in most cases related to a more rapid fall of rural poverty, rather than a rise in urban poverty. Apart from the exceptional case of Afghanistan, where both rural and urban poverty levels increased, rural poverty rates fell dramatically in all countries since 2005. Except for in Nepal these were matched by less rapid falls in urban poverty. A less optimistic scenario characterizes Africa – partly as a result of the high initial incidences of poverty both in rural and urban areas. Nonetheless such figures also point to the need for situating urbanization and urban and rural poverty in particular national contexts. Many countries have benefited from strongly growing post-millennial economies and experienced a reduction in poverty rates both in rural and urban areas, albeit from very high levels: Uganda, Ghana, Ethiopia, Tanzania, Namibia, Rwanda, Cape Verde, Senegal and to a lesser extent Nigeria. At the same time, the persistently high poverty levels in Zambia despite the primary commodities boom is clearly cause for concern, while a number of countries have been stagnant or experienced worsening poverty for instance Cote d'Ivoire and Madagascar.

The relative push/pull components of mobility and urbanization hence vary, but a number of migration studies attest to migration occurring across income and wealth quintiles in most settings. To the extent that households are excluded from mobility it tends to be the poorest who lack resources, rather than the wealthier, with migration generally having a positive effect on household incomes (Hossain, Bose et al. 2002, Collinson, Tollman et al. 2006, Zulu, Konseiga et al. 2006, Collinson, Clark et al. 2007, Deshingkar, Sharma et al. 2008).

Urbanization – regardless of whether driven primarily by migration, natural increase or reclassification - needs to be considered also in the context of more general influences on population growth with education and female entry into the (urban) labour force affecting fertility strongly. Education and especially women's education delays child bearing, raises the awareness of family planning and leads to a preference for fewer but more well-educated children. The influence on education as a determinant of fertility rates is universal and so strong that Lutz and Samir (2010) suggest that it should be included as a factor in general population projections. Increasing priority given to girls' education in both regions, partly in response to the MDGs, if sustained is likely to influence fertility, while also encouraging movement to urban areas where the benefits of education may be more possible to reap, whether for men or women. As suggested by the literature on Africa in particular, education is often a prominent migration motive in itself, while unequal access to education reinforces the rural urban fertility gap (Eloundou-Enyegue and Giroux 2012). The distribution of the urban population towards larger cities, rather than smaller towns is also likely to affect fertility behaviour as smaller urban areas maintain fertility rates and child mortality rates closer to those of rural areas (Montgomery 2008, Tacoli 2012). The empowerment of women, their entrance into the labour force as part of the urban transition and the effect of son preference and strongly skewed sex ratios in South Asia are also likely to influence fertility in the future (Skeldon 2008, Tacoli 2012).



## **Farm size trends in sub-Saharan Africa**

A lively debate about the future of small farms in sub-Saharan Africa has occurred over the past decade. While recognizing that almost half a century of successful agricultural development in many parts of Asia rested on the shoulders of smallholders a number of scholars question whether Africa's small farms could come to play the same role in reducing poverty, improving food security and contributing to economic growth (Ashley and Maxwell 2001, Ellis 2006, Collier and Dercon 2009). Pointing out that global as well as regional contexts and conditions are very different for SSA today some critics fear that smallholder-led growth optimism may result in a poverty trap for smallholders cultivating tiny parcels of land. Instead policies should facilitate the movement of labor out of the sector (Ellis 2006). Collier and Dercon (2009) also question what they see as an exclusive focus on smallholder farming as the only accepted mode of production in strategies presently being developed for African agriculture. In their view, agricultural development could benefit from a mix of smallholders and large-scale commercial farms as the latter stand a better chance of overcoming a number of obstacles usually facing smallholders. Insufficient access to skills necessary for innovation in agriculture, higher transactions costs of finance, trading, marketing and storage are examples of difficulties that cannot normally be handled by individual smallholders.

Against these more skeptical views of smallholder potential in SSA, held by those whom Timmer (Timmer 2005) has called the smallholder 'pessimists', stands a large number of smallholder 'optimists' who continue to support strategies promoting productivity growth and commercialization in African smallholder agriculture (World Bank 2008, Wiggins 2009, Jayne, Mather et al. 2010, Djurfeldt, Aryeetey et al. 2011, Hazell 2012). One of the many issues under discussion has been that of farm size.

### **Small - smaller - too small? Are there reasons to worry?**

Africa and Asia are the only continents where average farm size has declined over the past four decades (Eastwood, Lipton et al. 2006). In sub-Saharan Africa the average farm size was 2.4 hectares in the 1990s (Table 7). Like in South Asia, smallholders, totaling 40 million farmers, make up more than 80% of all farms while estimated to account for 90% of agricultural production (Spencer 2002 cited by Nagayets 2005). Although land size estimates are largely indicative they show that, in spite of the colonial legacy of bimodal agrarian structures in Southern and Eastern Africa, the smallholder sector is of fundamental importance for the mostly agrarian countries of sub-Saharan Africa.

*Table 8: Trends in farm size and relative and absolute prevalence of small farms in selected sub-Saharan countries*

Country	Year	Average farm size (ha)	Share of Small Farms to the total number of farms (%)	Share of total agricultural land under small farms (%)	Number of small farms (millions)
Botswana	1982	3.3	–	–	–
	1993	4.8	25	5.5	0.14
DR Congo	1970	1.5	–	–	2.03
	1990	0.5	97	86	4.34
Ethiopia	1977	1.4	–	–	3.68
	1989-92	0.8	–	–	5.62
	1996	1.17	–	–	–
	1999-2000	1.0	87	60	9.37
Guinea	1989	1.9	–	–	–
	1995	2.0	65	32	0.44
Kenya	2003-2004	2.46	–	–	–
Malawi	1981	1.2	–	–	–
	1993	0.7	95	70	1.48
Mozambique	1999-2000	1.3	83	–	–
	2002	1.66	–	–	–
Nigeria	2000	–	74	–	6.25
Rwanda	2001	0.94	–	–	–
Tanzania	1971	1.3	–	–	–
	1994-95	–	75	–	2.90
	1996	1.0	88	58	3.53
Togo	1983	1.5	–	–	–
	1996	2.0	59	29	0.25
Uganda	1991	2.16	73	–	–
Zambia	2000	2.72	–	–	–
Sub-Saharan Africa	1990s	2.4	69	32	40
Sub-Saharan Africa Weighted average	1990s	–	85	56	–

*Source: Eastwood, Lipton et al. (2006), Nagayets (2005), Anriquez and Bonomi (2007), Wiggins (2009), Jayne, Mather et al. (2010). The data for Kenya, Ethiopia 1996, Rwanda, Mozambique 2002 and Zambia are from survey data (Jayne, Mather et al (2010). The Kenya numbers are not weighted.*

More recent changes in farm size, covering twenty one regions in eight African countries for the period between 2002 and 2008, are captured by an African-Swedish research project, Afrint (Jirström, Andersson et al. 2011). Largely the data confirm the declining trend in farm size that has been reported on by others (Ellis 2005, Jayne, Mather et al. 2006). Although only representative of the approximately 100 villages where the surveys were conducted, it indicates that, with the exception of Nigeria where farms grew substantially over the six years, farm size has either remained stable or declined. The average farm size of 2.42 hectares in 2002 is close to the average farm size figure for SSA for 1990s as reported by Eastwood, Lipton et al. (2006), a figure which by 2008 had fallen to 2.16 hectares (significant at the 0.1% level)

Behind the averages are large variations in the size of holdings among land size quartiles. In the 2008 sample, the per capita access was down to 0.12 ha or less for the 25% smallest farms, except for Ethiopia and Nigeria. In Kenya the lowest quartile only had 0.04 ha per capita. For the sample as a whole, the top quartile, with an average land size per capita of

0.74 ha had more than six times as much land than households in the bottom quartile. Also these figures confirm and tally well with those of previous farm household studies in the region (Jayne, Mather et al. 2006). Parts of SSA appear to become more Asian-like in terms of farm size as well as in terms of land distribution.

Breaking the sample by region shows that the variation within countries is also large, depending in part on agro-ecology, with land sizes generally being larger in dryer, more extensive production systems. It is not easy to find any immediate relationship between the average farm size of the regions and their relative economic strength as measured by average household income per consumption unit, with the effect of relatively speaking smaller farm size varying greatly depending on the characteristics (both physically as well as economically) of the regions. Well-connected, areas of intensive, commercially geared production contrast (central Kenya) with villages characterized by rising populations in remote areas on deteriorating natural resource bases (parts of Malawi).

In some countries, for example Kenya, Ethiopia, Rwanda, and Malawi, available land resources are limited and consequently the possibilities for sustainable area expansion are few. By contrast, in the Democratic Republic of Congo, Mozambique, Sudan, Tanzania, and Zambia for instance the land frontier remains open but labor supply is a constraining factor for area expansion (Deininger and Byerlee 2012). In for example Mozambique and Sudan, large land acquisitions during the period 2004-09 have taken place as governments have agreed to lease large tracts of lands to (mainly domestic) investors on up to 99 year leases. In Sudan 4.0 million hectares and in Mozambique 2.7 million hectares have been leased out (ibid:705). Deininger and Byerlee (2012) in a review of large scale land acquisition point to the poor conditions for smallholder involvement and suggest that the 'superfarm' deals tend to come about through non-commercial agreements which might not have taken place had the full opportunity costs been considered. Perhaps as a consequence, the outcome of the numerous announced investments in several African countries has often fallen short of expectations (ibid).

The debate on large-scale vs. small-scale farming is perhaps not so much an either or issue, however. Some of the most central questions are related to the employment and self-employment impacts of the two modes of production. Pointing out that the rural population of prime working age (16-64 years old) in SSA is projected to grow by 1% per year for the next 10-20 years, Lipton (No date), emphasizes the need for agriculture in SSA to create much more employment opportunities while at the same time allowing for increasing labor productivity. For this to be possible land productivity will need to grow faster than labor productivity. Furthermore, to avoid falling profitability as output prices decline faster than the costs of production new productivity increasing technology needs to be developed and adopted. Given the low land and labor productivity at present, there are great opportunities to raise productivity also on very small farms. The view that African smallholder can and should play a central role in the transformation of the agricultural sector does not, however imply that a continued fragmentation and decrease in farm size is unproblematic. On the other hand, also in the early debate on the impacts of the Green Revolution in Asia many observers were skeptical about the possibilities for smallholder involvement. Much of that concern transformed into constructive inputs steering agricultural science in a more pro-poor and small-scale direction. Although the Asian Green Revolution cannot be copied to Africa, some of the lessons of the viability of the smallholder sector in Asia should be remembered while numerous examples of African smallholder performance during the past decade need to be born in mind (Wiggins 2009).

## Farm size trends in South Asia

Historically, average farm sizes in Europe and North America increased as part of the structural transformation process. In contrast, the Asian trend has been one of shrinking average farm size. In spite of recent decades of relatively rapid and steady economic growth, the number of small farms (less than 2 ha) has been growing rapidly in several of Asia's developing countries (Nagayets 2005, Niroula and Thapa 2005). Headey, Bezemer et al. (2010) estimate that in 2000, there were roughly 340 million small farms in developing Asia and in countries such as China, Bangladesh, and Sri Lanka the mean farms size is closer to half a hectare. Among the exceptions to the trend we find Japan and South Korea where farms have grown in size over the past four decades but still remain small – on average below 2 ha in both countries (Fan and Chan-Kang 2005). More recently, average farm size in China has been increasing slightly as a result of increased land rentals (Huang, Wang et al. 2012).

The development over time is presented in Table 10. The decline in farm size has been driven primarily by growing rural populations and sub-division of land upon inheritance, while total cultivated area in the sector has remained quite stable during the past decades. In India, marginal (less than 1ha) and small (less than 2 ha) farms in 2002-03 together made up a larger share, 81%, of the total number of land holdings than they did in 1960-61 when the share was 62%. Their share of the area operated more than doubled during the same period from 19% to 44% (Dev 2012).

*Table 10: Trends in farm size and relative and absolute prevalence of small farms in selected South Asian countries*

Country	Year	Average farm size (ha)	Share of Small Farms* to the total number of farms (%)	Share of total agricultural land under small farms (%)	Number of small farms (millions)
Bangladesh	1977	1.3	—	—	—
	1995/96	0.6	96	69	17.03
India	1971	2.3	—	—	49.11
	1991	1.6	75	34	—
	1995/96	1.4	80	36	92.82
	2000/01	1.33	81	44	—
Nepal	1992	1.0	—	—	2.41
	2002	0.8	92	69	3.08
Pakistan	1971/73	5.3	—	—	1.06
	1989	3.8	—	—	2.40
	2000	3.1	58	16	3.81
Sri Lanka	1946	1.3	—	—	—
	2002	0.47	40	—	3.6
South Asia	1990/200s	—	81.5	47.3	—
South Asia - weighted average	1990s/2000s	—	81.4	35.8	—

\*small farms are defined as 2 hectares or less.

— Not available

Source: Nagayets (2005), Anríquez and Bonomi (2007), Thapa (2009), Marawila (2007 for Sri Lanka), Dev (2012 for India 2000/01 data).

The rapidly growing number of small farms suggests that agriculture, as a continuing source of employment and self-employment, has been contributing to a slower movement out of agriculture than implied by high economic growth rates. A number of factors seem to combine in explaining this. Firstly, during a period of approximately 20 years, 1965-1985, staple food production for the market became profitable for many Asian smallholders (Pingali, Hossain et al. 1997). The rapidly introduced and diffused new Green Revolution technology packages in combination with supportive government policy packages and heavy investments in agricultural and rural development, made small scale cereal farming attractive (Djurfeldt and Jirström 2005). The agricultural terms of trade remained positive in the Asian economies for a much longer period than in other countries – the long-run decline in terms of trade was twice as slow compared with countries outside Asia (Timmer 2009). While world market prices for agricultural commodities and energy were important explanations for this also domestic factors such as agricultural and rural development policy played a significant role with the combination of these global and national influences preventing a “movement of labor out of agriculture from being ‘too fast’” (ibid:28). More recent examples of rural development policy can be found in India, where flows of public expenditure comprising nearly 17% of agricultural GDP, represent a significant transfer of purchasing power to the rural sectors partly explaining how rural wages, in spite of low levels of agricultural growth, have been able to rise (Binswanger-Mkhize 2012:12).

Second and partly as a consequence of the dramatic increases in production, falling prices of staple crops – rice and wheat - and a slowdown in productivity growth in these crops from the mid-1980s and onwards, put pressure on farm households to diversify farm production (Petit, Barghouti et al. 1992, Timmer, Barghouti et al. 1992). By switching to higher valued crops as well as to commercial livestock and aquaculture production, farmers were able to meet the increasing demand from consumers shifting their diets as a result of urbanization and income growth. Growing exports of high value commodities contributed to this trend.

Thirdly, and more important in explaining the slow exit of labor out of agriculture, has been the role of part-time farming and pluri-active farming families. The share of nonfarm incomes in total income has increased rapidly in most Asian countries and has been estimated at approximately 50% (Reardon, Berdegue et al. 2007) Against a backdrop of rapid income growth and falling poverty rates, the nonfarm sector has been able to provide income sources of sufficiently high return, contributing to the relatively slow movement of labor out of agriculture (Headey, Bezemer et al. 2010).

What future trends in farm size change can be expected? Theoretically, the long run scenario may be one of increasing farm size as result of continued structural transformation and more attractive alternatives than small-scale farming. The increase in farm size in East Asia could point in that direction. There are, however, in the short and medium term, reasons to doubt a change towards growing farm sizes. In the case of India, Binswanger-Mkhize (2012) shows that the labor force is growing at a much higher rate (2.8%) than the population growth rate (1.6% in 2000) while Hazell, Headey et al. (2011) point out that the rural population is estimated to peak at 900 million in 2022 and may continue to grow until 2045. In combination with a relatively limited absorptive employment capacity of the urban economy, the growing rural labor force implies that workers, especially unskilled and semi-skilled ones, are stuck in the rural areas (Binswanger-Mkhize 2012). Sharma and Bhaduri (2009) identify a number of factors explaining why rural youth opt out of farming. Skills, education, age and proximity to towns come out as the most influential factors increasing the odds of moving out of agriculture. Nonfarm sources of income are more accessible for the better skilled and educated, implying that women are disadvantaged in this respect. This contributes to the feminization of agriculture in India (Binswanger-Mkhize 2012). The relative strength of the rural economy, partly explained by pro-rural policies and public investments, in providing employment opportunities, particularly in the nonfarm economy can, if the past decade’s development continues, be expected to create growing markets for agricultural

products, particularly for high-value products. The share of high-value products in total value of output from agriculture grew from 37% in 1983-84 to 47% in 2007-08 (Sharma and Jain 2011). In combination with an adoption of modern technology including mechanization, a continued diversification into higher valued crops could then be a future possibility for smallholders and the viability of small farms. Part-time farmers, among whom an increasing share is female, cultivating on average some 1.3 hectares or less, seem to be a likely scenario. In many respects, the situation in South Asia shares many characteristics with that of East and Southeast Asia.

## **Effects of urbanization and farm size changes on agriculture, food security and nutrition in urban areas**

Arguably, the effects of urbanization and farm size on production systems may be most directly evident in rural areas dominated by agricultural livelihoods. Nonetheless given the linkages between the non-agrarian and agrarian sectors of the economy, either directly through market based interactions, or indirectly through largely invisible household transfers of food and remittances, the effects of urbanization and changing farm sizes are likely to be felt also in the urban areas themselves. In this regard, three broad effects of urbanization and changing farm sizes can be discerned in urban areas, with possible repercussions also for agriculture in rural areas. Firstly, changing urban dietary patterns as part of the nutrition transition and evolving gender roles affects urban food security directly, especially in the context of growing import dependency. Secondly, the importance of urban agriculture as a source of food and income needs to be considered as a “ruralisation” of urban landscapes and livelihoods. Finally, the role and resilience of informal safety nets and rural urban linkages as sources of food should also be acknowledged.

### **Changes in urban diets**

Urbanization brings in its wake a range of dietary changes, connected to rising incomes as well as the increasing opportunity costs of women’s labour and the availability of convenience foods. The growing importance of imports in urban food supply, the rise of supermarkets controlled by multinational companies and international fast food chains as distribution channels for food is connected to the globalization of the food system which in many cases has its most visible expression in cities. Aside from these economic factors, diets are also shaped by cultural and social influences, including the Westernization of dietary preferences resulting from the spread of transnational food corporations as well as global mass media (Hawkes 2005, Kearney 2010, Pingali 2010).

Urbanization has been historically connected to what is known as the nutrition transition during which diets shift towards higher energy and fat density, which together with lower levels of physical activity produces the paradoxical result of under-nutrition and obesity occurring in the same populations. Popkin (1999) on the basis of cross country analysis suggests that a shift in urbanization levels from 25% to 75% in very low income countries is associated with an increase of energy intake from sweeteners and fat by 12 and 4 percentage points respectively, even when (as is suggested especially by data from Africa), urban growth occurs without rising incomes. The first step of the nutrition transition involves a major shift towards consumption of vegetable oils, with 20% of calories derived from fat even in poor countries (750 USD per capita) in 1990. In 1962, by contrast countries needed to have nearly twice that income to attain the same ratio of fat in their diets (Popkin 1999: 583). A shift towards higher fat content is followed by an increase in sweeteners and animal source foods in urban diets. Drewnowski and Popkin (1997) and Popkin and Bisgrove (1988) show an independent effect of urbanization (when controlling for higher income), pointing to the distinctive character of urban diets when compared to rural food consumption patterns.

This pattern is tied both to higher incomes as well as the rising opportunity cost for women's labour as women increasingly take on employment outside the home (Elder and Schmidt 2004, Ruel, Garrett et al. 2008).

Pingali (2007) discussing the westernization of diets in Asia in particular, notes five stylized facts in changing food demand: a reduction in per capita consumption of rice, increased consumption of wheat and wheat based products, increased consumption of high protein and high energy foods, a shift towards temperate zone produce and the growing importance of convenience foods. The latter is connected both to increases in women's labour participation rates, but also to declining fertility as smaller family sizes "may enable families to eat outside the home on a more regular basis and demand more convenience processed food (p. 285)." This shift towards convenience foods is also matched by an increasing rise of the share of processed and high value foods in global trade patterns, with such commodities comprising 60 per cent of all food trade in 2001 (Regmi and Dyck 2001 cited in Pingali 2010:513). While Popkin's (Popkin 1999, Popkin 2003) work underscores the distinctiveness of urban dietary patterns, recent work by Stage, Stage and McGranahan (2010) using data from household expenditure surveys from China and India, point to rising incomes (rather than urbanization) as the main determinants of changes in patterns of food consumption. Rising incomes and food expenditure are connected to consumption of more expensive foods such as meat and dairy products also in other developing countries.

Although low productivity in agriculture prevent the rural poor from feeding themselves and their families, patterns of urban food consumption depend even more on cash incomes and especially in low productivity settings such as sub-Saharan Africa increasingly also on global food markets. For the 1980s and 1990s Ruel, Garrett and Haddad (2008:641), show that for the majority of fourteen countries studied (including China, Nigeria and Bangladesh), the number of urban poor had increased, the share of the urban poor of the total poor had risen and the incidence and share of underweight preschool children of the total number had increased in urban areas. A study of ten African countries by Ruel and Garrett (2004) similarly pointed to the precarious food security situation of urban households: in three countries more than 60 per cent of the urban population were suffering from energy deficiencies, whereas in nine countries, 40 per cent of urban households were failing to meet their food needs (cited in Satterthwaite, McGranahan and Tacoli 2010:2816).

The role of urbanization in transforming demand for food and agricultural products, whether from rural hinterlands or as imports is therefore likely to be effected not only by changing dietary preferences, but also by the overall demand for food which is in turn related to the size as well as the distribution of rising incomes. Given the differences in African and South Asian urbanization described above, the consumption linkages of growing urban areas are likely to be very different.

## Urban Agriculture

While the potential of urban agriculture in meeting urban food demand is generally recognized, most studies of urban agriculture to date remain anecdotal and estimates of the importance of urban agriculture for this reason tend to vary widely. The research project on urban agriculture in Cameroon carried out by CIRAD (Parrot, Dongmo et al. 2008), and the CGIAR study *Urban Harvest* with data collected around the turn of the millennium in Yaoundé, Kampala and four cities in Kenya constitute important exceptions, however (Prain, Karanja et al. 2010). Nonetheless, even such detailed studies cover only limited ground in terms of assessing the scale of urban agriculture. As noted by de Bon, Parrot et al. (2010), local urban activities and livelihoods in general remain understudied as a result of illegality and informality, making documentation difficult. Moreover, as suggested by Ellis and Sumberg (1998) advocacy objectives may be inflating estimates of urban production.



Zeza and Tasciotti (2010), on the basis of representative national data from fifteen countries (the RIGA database), although concluding that global estimates of urban agriculture are vastly exaggerated, show that in eleven of these, participation rates are higher than 30 percent. A table summarizing their findings is presented in Table A.3 in the Appendix. Three countries of South Asia are covered in their study and four in sub-Saharan Africa. In all these countries except for Pakistan, participation rates are sizeable – more than a quarter of the urban population is engaged in urban agriculture. A number of other findings unite the sample: urban agriculture is mainly geared towards own consumption with cultivation occurring mainly among the urban poor as an important source of dietary diversity.

The African countries in the sample divert from the remainder through the importance of urban agriculture as a source of income among the poorest quintile: in Nigeria and Madagascar urban agriculture constitutes more than half of the total income of these households, while in Ghana the share is more than a third. This leads the authors to conclude that “should this picture be confirmed by a larger cross-section of countries, it is hard to see UA playing a substantial role in poverty alleviation outside of Africa (p. 268).” The generalizability of patterns within African urban and peri-urban agriculture is difficult, however - the result of a lack of empirically based research and a metropolitan bias in most of the research that has been carried out (Thornton 2008).

A few generalizations nonetheless can be made on the basis of the literature on urban agriculture more generally: firstly, as suggested by de Bon et al. (2010), the role of urban agriculture is mainly to provide urban dwellers with perishable foodstuffs, especially fresh vegetables and dairy products. The literature on staple production is less forthcoming, although experiences from Asia suggest that this tends to fall in relative terms as pressure on urban land increases, encouraging production of more valuable crops. Secondly, the literature has gradually come to recognize the existence of commercially oriented urban cultivation. Such agriculture predominantly occurs on urban fringes and on open spaces, in contrast to home-based agriculture which tends to be more subsistence oriented (Van Veenhuizen 2007). Finally, important gender dimensions also exist, with most home gardeners being women, while commercially oriented agriculture is more often carried out by men women also have poorer access to land, water and education (Hovorka, de Zeeuw et al. 2009).

While the prospects for urban agriculture as a source of livelihood differ between Asia and Africa, one aspect tied to self-provisioning *within* the cities is to weaken the consumption linkages between rural agriculture and urban centres of demand. This needs to be contextualized further, however: in Ghana, urban agriculture accounted for 15 percent of *total agricultural output* in 1998 and as much as 27 percent in Madagascar, compared with only 3 percent in Malawi (Zeza and Tasciotti 2010:270).

### **Informal safety nets, rural urban linkages**

While the literature recognizes the role of urban transfers in cash and kind to rural areas and the increasingly multi local characters of many household livelihoods (Tacoli 2006, Tacoli 2007, Tacoli 2008) the components of such livelihoods should be situated in regional context, with household transfers of food *from* rural to urban areas being documented in sub-Saharan Africa especially.

The combination of growing urban populations and rising food prices results in a growing dependence not only on urban agriculture, but also on households producing their own food in rural areas (Foeken 2001, Andersson 2002, Foeken and Uwuour 2008). In part this reflects a household division of labour over space, as suggested in highly unbalanced urban



sex ratios for countries such as Kenya (146), Rwanda (113) and Malawi (106) (Tacoli 2012). In turn these patterns replicate longstanding labour migrant arrangements, where male breadwinners have left the countryside often leaving their dependents to manage farm units. Participation in agriculture among household members who live in the urban areas may be restricted to extended visits (Andersson Djurfeldt 2012).

While multi-local livelihoods are tied together across space by temporary mobility and cash remittances, food transfers from rural to urban areas via household networks (rather than market based arrangements) are also important components of urban livelihoods. As suggested by recent work by the African Food Security Urban Network (AFSUN) based on household data covering 6500 households in eleven cities in nine countries (Botswana, South Africa, Namibia, Malawi, Zambia, Zimbabwe, Mozambique, Swaziland and Lesotho) in Southern Africa, food insecurity worsened considerably in the wake of the 2008 food price crisis with nearly all of the poor urban households in the sample stating that they had gone without food due to higher food prices. The share of households receiving food transfers varied from 14% in Johannesburg to as much as 47% in Windhoek. Of those households that received transfers, 81% considered them to be important or very important to the household and 9% reported that they were critical to household survival (Frayne 2010:300).

If food prices increase further, transfers of food from rural to urban household members may intensify to compensate for such price rises. Self-provisioning arrangements may in this sense become progressively more multi-local, widening the geographical gap between units of production and consumption, while bypassing market channels. The lack of access to alternative urban sources of food, based either on within household transfers, own cultivation in rural areas or urban cultivation may in this scenario become a dividing line in terms of individual possibilities of hedging food security on factors that are insensitive to increasing import prices.

## **Effects of urbanization and farm size changes on agriculture, food security and nutrition in rural areas**

In theory effects of urbanization on rural areas are varied and in some respect contradictory: while agglomeration economy perspectives and more recent migration theories tend to stress the positive effects of urbanization on urban as well as rural livelihoods urban bias approaches emphasize the potentially parasitic role of towns and cities. As suggested by the empirics of African and South Asian urbanization the process of urbanization may carry different implications for poverty reduction in urban areas, with this role being potentially dissimilar also with respect to rural areas.

### **Urbanization and rural land use patterns**

Fears that urban land use functions are displacing agricultural production as part of increasing urbanization are sometimes voiced. Since most large urban areas for historical reasons tend to be located on prime agricultural land the concern is that often unregulated urban expansion for residential or industrial uses lays claim to fertile land that is needed for agricultural production (Matuschke 2009). Competition for water among rural and urban water users, where rising demand as a result of greater industrial and domestic needs in urban areas, may result in drought stresses in surrounding rural areas, especially in systems relying on rain fed agriculture (Showers 2002).

Globally urban areas are estimated to cover 7% of the area within cultivated system boundaries, and therefore the land available for agriculture is sizeable in comparison (Stage, Stage et al. 2010). While globally the average built up area per persons in cities of more than 100 000 increased by 1.7% annually between 1990 and 2000, average annual productivity increases in agriculture have been 2% annually per hectare since the 1960s (Angel, Sheppard et al. 2005). As noted by Stage, Stage et al. (2010), therefore: “a few years of normal productivity growth would be more than enough to replace all cultivated land lost to urban settlements in all of human history (p. 206).” Urban land use conversion may also lead to more intensive production of remaining agricultural land while urban growth may encourage urban and peri-urban cultivation to supply expanding urban markets with perishable goods. Moreover, migration from rural to urban areas may decrease the built up area on cultivable rural land (Satterthwaite, McGranahan et al. 2010).

While the macro tendencies with regard to urban land use conversion therefore appear less problematic than sometimes assumed, the effects of migration on rural land availability may influence productivity more indirectly. In the case of South Asia (India and Bangladesh) the mechanization of agriculture and the emergence of income earning opportunities in urban areas or the local non farm economy has freed up land for formerly land poor households, sometimes through tenancy arrangements (Hossain, Bose et al. 2002) while in some cases reconstituting class and caste relations in the countryside (Deshingkar, Sharma et al. 2008). With regard to sub-Saharan Africa, low productivity agriculture, by contrast is by some commentators connected to insecure land tenure regimes that discourage mobility as well as permanent farming (Stage, Stage et al. 2010) while land scarcity in the African context is highly concentrated to particular areas. For this reason the redistributive role of migration with respect to land is likely to be less important than in South Asia.

### **Changes in dietary preferences and shifts in rural production systems**

As pointed out in an earlier section, urbanization entails a number of shifts in dietary preferences and patterns: a relative increase in fat and sweeteners, as well as temperate zone products (mainly fresh fruit and vegetable based) and the devotion of a larger share of food energy to animal products. Whereas it has been questioned whether urbanization itself or increasing incomes are driving these changes, the impact on rural production systems is largely similar regardless of the impetus behind these shifts, although the policy implications may be different. The rising importance of convenience foods in urban settings and the increased role of supermarkets and fast food chains as suppliers of such foods to urban consumers also carry implications for smallholders especially.

### **Dietary shifts and their consequences**

Concern is frequently raised that urbanization will fuel a shift towards more land intensive agricultural production, with meat production in particular being singled out as problematic: production of one calorie of meat uses seven calories worth of other crops. FAO data since the 1960s show a global trend in rising meat production, outpacing that of the major cereals. In turn this points to a shift in production systems away from staple crops to high value crops (and fodder crops) in response to increasing global demands for more expensive foods as average incomes have risen (Stage, Stage et al. 2010). While a growing reliance on meat globally may be cause for concern for a number of reasons, the literature also suggests the emergence of other markets as a result of urbanization and rising incomes more generally, such as fresh fruits and vegetable, vegetable oils and sweeteners.

Growing demand for high value crops arising from higher incomes in urban areas is noted as an important source of rising smallholder incomes in a number of countries. While linking

smallholder to global markets is sometimes put forth as a policy priority (World Bank 2008), Tacoli (2008) argues that domestic urban markets provide more stability and points to evidence from West Africa showing how diversification to meet urban demand has resulted in production increases (Tiffen 2003, Toulmin and Gueye 2003). Testing the importance of urbanization in high value commodity diversification for India, Parthasarathy Rao, BIRTHAL, Joshi and Kar (2004) find that urbanization is a strong driver of vegetable and meat production in particular, although the distributional consequences for smallholder farmers are not studied.

While production of perishables for urban markets has clear spatial limits, especially in areas with poor infrastructure, the dietary shift towards vegetable oils and sweeteners as part of the nutrition transition may contain some prospects for widening smallholder involvement, for instance in palm oil and soybean and sugar cane production also in less well-connected areas.

As suggested by Reardon et al (Reardon, Barrett et al. 2009) the effects on smallholders of changing dietary patterns is conditioned also by changes in procurement systems, with a shift towards “modernized procurement systems” involving a centralization of procurement, vertical coordination (rather than traditional wholesale markets) and a move away from public or no standards to private standards for food safety. Modernized procurement systems have mixed effects on smallholder farmers: whereas meeting standards generally involves increased expenditure on technology and post-harvest treatment and the preference among companies for dealing with a limited number of suppliers may lead to exclusion of small farmers, lower labour costs among small farmers and coordination into marketing cooperatives may compensate for these aspects. In the context of South Asia and sub-Saharan Africa, moreover, largely unimodal land systems may enable eluding the general pattern of small holder exclusion in scale dualistic settings noted by the authors.

Spatial aspects of urbanization are also important, however: densely populated areas in close physical proximity to existing urban areas or well-connected to infrastructure leading to such areas, are likely to benefit most from urbanization. While theoretical perspectives tend to stress class-based selectivity in processes of growth, geographical selectivity may be equally germane. Prospects for inclusivity, while resting on general geographical aspects of accessibility and natural resources may also be tempered by more local issues tied to land tenure systems (Andersson Djurfeldt 2013).

### **Rural livelihoods, agriculture and urbanization**

The empirical literature on migration and urbanization points to overwhelmingly positive aspects of income diversification and mobility. While theoretical perspectives stress the direct importance of remittances and the indirect role of tightening labour markets, empirical studies focus almost entirely on remittances. While remittances are important both as direct sources of income, responsible for around a third of annual income among the Indian poor and landless (Deshingkar 2006) their indirect effects on agriculture vary, with evidence of their role for raising agricultural productivity differing considerably. Evidence from Bangladesh (Afsar 2000) and Pakistan (Hasan and Raza 2009) suggest that remittances were used primarily for consumption, however. In this context, it is important to note the indirect effect of remittances as sources of growing demand: Hossain, Bose et al (2002) again writing of Bangladesh note that remittances contributed 12.8% to household income and estimated that a 10 % increase in income would lead to a 6.5% increase in demand for food items, mainly of high value.

While Tiffen (2003) notes the importance of remittances in making investments in improved technology in West Africa, the share of remittances as part of cash incomes in many parts of

Africa is generally small and has a clear regional profile tied to historical mobility patterns. Data from the Afrint project covering around 3800 households in twenty one regions in eight African countries show that remittances on average comprised less than 5% of cash income, with strong national and regional variations.

While cash remittances are important sources of income in some rural areas, the role of rural urban transfers should also be highlighted. As indicated above, food transfers from rural relatives are important sources of supplementary food in urban areas in sub-Saharan Africa. The effects of these transfers on the food security for the remitting households, have however been shown to be predominantly negative. Again, using data from Afrint (around 3400 smallholders who grew maize in 2008), Andersson (2011a, Andersson 2011b) shows that roughly 40 per cent of these households transferred maize to relatives either in rural or urban areas, with the share of remitting households varying with the level of urbanization in the countries. While the share of production that was transferred was largely identical among the income quintiles in the sample, the effect of transfers on food security was the most severe in the poorest quintile. Only in the top quintile were households producing more than 200 kg of maize per consumption unit when in kind transfers of food were deducted from household production, suggesting that the food security of the rural household unit was severely compromised by transferring food to urban relatives. Incoming remittances of cash were not compensating for food transfers.

## Conclusions and recommendations

Urban patterns of growth and the development of these trends are likely to take South Asia and Sub-Saharan Africa along somewhat diverging paths of the urban transition. The recent literature on India suggests that reclassification - in effect an evolution of *existing* rural areas into urban centres over time whereby livelihoods become increasingly detached from agriculture – is taking on a more important role than natural increase or migration as a source of urban growth. By contrast, sub-Saharan Africa's urban growth is tied strongly to natural increase suggesting the growth of existing urban centres, rather than the formation of new ones. Although migration as a driver of urban growth has been stable in the South Asian case over the past decades in the case of sub-Saharan Africa it is generally thought to be declining. It is important to acknowledge that patterns may change over time depending on general economic growth, fertility rates and the size and distribution of incomes and land.

In the South Asian case, the emergence of small urban settlements may be capable of providing the consumption linkages for surrounding agriculture, envisioned by many theoretical perspectives on balanced growth. Given the continuing role of smallholder agriculture as the backbone of livelihoods as well as the agrarian sector as a whole in South Asia, these incipient urban centres may be important sources of demand for increasingly high value products, especially in relation to towns that are developing on the fringes of metropolitan areas. Here agrarian policies focused on smallholder based, intensive peri-urban agriculture may be the most relevant, where the special concerns over food safety and environmental management in high density settings, may be borrowed from research on urban agriculture. Strategic areas of research in these contexts would be a focus on extension and education to meet food safety and consumer standards, while encouraging market co-ordination to more effectively engage in urban markets.

Research on sub-Saharan Africa points to less straightforward conclusions: A variety of self-provisioning arrangements are especially important to urban food security in the African context: engaging in urban agriculture, participating in rural agriculture or receiving transfers of staple foods especially from rural areas. In effect these family based provisioning systems

– while important to individual households - may undermine the already weak role of small towns as sources of market based demand for rural produce. On the rural side, the need for localized contextualisation is crucial, given the often spatially limited consumption linkages of urban areas. The positive effects of urban growth are likely to be felt close to large cities where the concentration of higher incomes and the nutrition transition affects dietary patterns and demand size as well as composition. Encouraging high value, intensive agriculture in dynamic, well-connected, densely populated settings makes sense with relevant policy interventions largely mimicking those outlined in relation to Asian markets above.

Policies for less dynamic settings need to be fine-tuned to often precarious local conditions. In the most marginal areas, households trapped in Malthusian situations, characterized by a poor resource base, high dependence on external inputs, poor accessibility, relatively rapid land division and limited skills and education are likely to be untouched by urbanization. The policy solutions in such regions must rest primarily on basic measures to improve food security through raising yields of staple crops and drought resistant varieties, rather than primarily meeting potential urban demand. Crops demanded by growing urban populations, for instance soybeans may have a secondary role to play also in these systems, however. In less marginal regions, although farm size constraints may be relatively unimportant, while intensification of land use is prevented by lack of labour (possibly as a result of migration) and the generally precarious situation characteristic of smallholder agriculture, a number of complementary aspects could be addressed: the interaction between livestock and production, extension services and technologies tuned more closely to the needs of women, and institutional constraints in credit and land markets.

## Appendix 1:

Table A.1: Rural and urban poverty headcount ratios, 2005 and 2010, South Asian countries

	2005			2010			Change in rural poverty rates (2010 less 2005)	Change in urban poverty rates (2010 less 2005)	Difference in rural urban poverty rate gaps (the gap in 2005 less the gap in 2010)
	Rural poverty rate	Urban poverty rate	Rural urban poverty rate gap	Rural poverty rate	Urban poverty rate	Rural urban poverty rate gap			
Afghanistan	36,2	21,1	15,1	37,5	29	8,5	1,3	7,9	-6,6
Bangladesh	43,8	28,4	15,4	35,2	21,3	13,9	-8,6	-7,1	-1,5
Bhutan	38,3	4,2	34,1	30,9	1,7	29,2	-7,4	-2,5	-4,9
India	41,8	25,7	16,1	33,8	20,9	12,9	-8	-4,8	-3,2
Nepal	34,6	9,6	25	27,4	15,5	11,9	-7,2	5,9	-13,1
Pakistan	28,1	14,9	13,2						
Sri Lanka	24,7	7,9	16,8	9,4	5,3	4,1	-15,3	-2,6	-12,7

Source: World Development Indicators online. The ambition was to reproduce data for the period 2000-2010, but data was unavailable for the early 2000s and data was used for the closest point in time to the two years. The figures for Bhutan are from 2003 and 2007, Afghanistan for 2010 is from 2008, Nepal from 2003 and 2011, Sri Lanka 2003.

Table A.2 Rural and urban poverty headcount ratios, 2005 and 2010, sub-Saharan Africa, countries for which there is available data

Country Name	2000			2005			2010		
	Rural poverty rate	Urban poverty rate	Rural urban poverty rate gap	Rural poverty rate	Urban poverty rate	Rural urban poverty rate gap	Rural poverty rate	Urban poverty rate	Rural urban poverty rate gap
Benin	33,0	23,3	9,7	46,0	29,0	17,0	36,1	28,3	7,8
Botswana	40,4	24,7	15,7	44,8	19,4	25,4			
Burkina Faso	50,7	15,9	34,8	59,9	23,6	36,3	52,6	27,9	24,7
Burundi	83,2	41,0	42,2	68,9	34,0	34,9			
Cameroon	52,1	17,9	34,2	55,0	12,2	42,8			
Cape Verde	51,1	25,0	26,1	44,3	13,2	31,1			
Central African Republic							69,4	49,6	19,8
Chad	48,6			58,6	24,6	34,0			
Comoros	69,4	48,4	21,0	48,7	34,5	14,2			
Congo, Dem. Rep.				75,7	61,5	14,2			
Cote d'Ivoire	41,5	28,6	12,9	45,8	32,3	13,5	54,2	29,4	24,8
Equatorial Guinea				79,9	31,5	48,4			
Ethiopia	45,4	36,9	8,5	39,3	35,1	4,2	30,4	25,7	4,7
Gabon				44,6	29,8	14,8			
Gambia, The				67,8	39,6	28,2	73,9	32,7	41,2
Ghana	49,6	19,4	30,2	39,2	10,8	28,4			
Guinea	59,9	23,5	36,4	63,0	30,5	32,5			
Guinea-Bissau	59,9	23,5	36,4				64,7	35,4	29,3
Kenya	52,9	49,2	3,7	49,1	33,7	15,4			
Lesotho				60,5	41,5	19,0			

Liberia				67,7	55,1	12,6			
Madagascar	76,7	52,1	24,6	73,5	52,0	21,5			
Malawi	66,5	54,9	11,6	55,9	25,4	30,5	56,6	17,3	39,3
Mali	64,8	24,1	40,7	57,0	25,5	31,5	50,6		
Mauritania	61,2	25,4	35,8	59,0	28,9	30,1	59,4	20,8	38,6
Mozambique	71,3	62,0	9,3	55,3	51,5	3,8	56,9	49,6	7,3
Namibia	69,0	31,0	38,0	49,0	17,0	32,0			
Niger				65,7	44,1	21,6	63,9	36,7	27,2
Nigeria	69,8	58,2	11,6	63,8	43,1	20,7			
Rwanda	66,1	0,0	66,1	64,2	23,2	41,0	48,7	22,1	26,6
Sao Tome and Principe	64,9	45,0	19,9						
Senegal	65,1	41,2	23,9	58,8	33,6	25,2	57,1	33,1	24,0
Sierra Leone				78,5	47,0	31,5	0,0	0,0	0,0
South Sudan							55,4	24,4	31,0
Sudan							57,6	26,5	31,1
Swaziland	79,7	0,0	79,7				73,1	31,1	42,0
Tanzania	38,6	23,4	15,2	37,4	21,8	15,6			
Togo				75,1	37,2	37,9	73,4	34,6	38,8
Uganda	37,4	9,6	27,8	34,2	13,7	20,5	27,2	9,1	18,1
Zambia	83,0	39,5	43,5	77,1	27,9	49,2	77,9	27,5	50,4
Zimbabwe	82,4	42,3	40,1						

Source: World Development Indicators online. There are difficulties in finding time series data for the same period, hence the dates are largely indicative and the figure for the data collection point closest to the particular date was used in each case: Benin data from 1999, 2003, 2007, Botswana 1993, 2003, Burkina Faso 1998, 2003, 2009, Burundi 1998, 2005, Cameroon 2001, 2007, Cape Verde 2002, 2007, Central African Republic 2008, Chad 2003, Comoros 1995, 2003, Congo Democratic Republic 2006, Cote d'Ivoire 1998, 2002, 2008, Equatorial Guinea 2006, Ethiopia 1999, 2004, 2011, the Gambia 2003, Ghana 1998, 2006, Guinea 2003, 2007, Guinea Bissau 2002, 2012, Kenya, 1997, Lesotho 2003, Liberia 2007, Madagascar 1999, Malawi 1998, 2004, Mali 2001, 2006, Mauritania 2004, 2008, Mozambique 1997, 2003, 2008, Namibia 1994, 2004, Niger 2007, Nigeria 1996, 2004, Rwanda 2006, 2011, Sao Tomé 2001, Senegal 2001, 2011, Sierra Leone 2003, South Sudan 2009, Sudan 2009, Swaziland 2001, Tanzania 2007, Togo 2006, 2011, Uganda 2009, 1999, Zambia 1998 and an average of rates for 2004 and 2006, Zimbabwe 2001.

Table A.3: Participation rates, share of income and share of produce sold for urban agricultural production (survey data indicated next to country)

	Participation in agricultural activities (share of urban sample)	Share of total income from agriculture (urban sample)	Share of total income from agriculture among participants	Share of agricultural produce sold
<b>Africa</b>				
Ghana 1998	38	18	44	26
Madagascar 2001	30	21	63	39
Malawi 2004	45	12	26	15
Nigeria 2004	29	27	71	17
<b>Asia</b>				
Bangladesh 2000	26	3	9	35

Nepal 2003	52	11	19	34
Pakistan 2001	4	3	22	n/a

Source: Zezza and Tasciotti (2010), p.268, p. 270



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