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Rural demography in the developing world: what do we know and why it matters

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Abstract

Most theories of population change and agricultural development, see for example, those of Malthus and Boserup, posit rising rural populations. Across the world, however, rural areas are going through a demographic transition from high to low levels of fertility and mortality, while seeing out-migration to urban areas. In some rural areas, populations are no longer growing, but are declining. Even where rural population still grows, much of this reflects inertial growth from former high fertility: in most countries the cohort of rural children aged zero to four is shrinking, presaging future population decline.

- One important change is that demographic change promotes women's empowerment in rural areas: fewer pregnancies, coupled with more schooling for girls, give women more scope to work, migrate, earn and gain status and autonomy.
- A second change is that dependency ratios are falling in rural areas, delivering a demographic dividend that can boost growth. Owing to out-migration, however, labour shortages are being reported for agriculture. That may mean more use of machinery; it will certainly mean higher wages. And it should lead to consolidation of operated areas, even if not concentration of farm ownership.
- Out-migration from rural areas is likely to persist and intensify in the future.

Keywords Population; Fertility; Mortality; Migration; Labour

JEL code J13 Fertility; Family Planning; Child Care; Children; Youth & J11 Demographic Trends, Macroeconomic Effects, and Forecasts

Questions, methods and frameworks

The last 55 years have seen remarkable population growth, with the world population rising from 3 billion in 1960 to an estimated 7.3 billion by the end of 2015. Since the industrial revolution began, two demographic transitions in which populations go from high to low rates of birth and death have taken place. One began in the late 1700s in the early industrialising, now high-income countries and which was largely completed by 1950. The other started after the Second World War in the developing world and is still not complete for most countries, with some notable exceptions such as China.

While population change in the developing world is most evident in the growth of cities and towns, demographic changes are just as marked in rural areas. By and large, those interested in agricultural and rural development have paid relatively little attention to rural demography. It has been taken as read that rural populations are growing, and often rapidly, with the implication that agricultural and rural economic growth have to outstrip such increases, while pressure on natural resources mounts. Meanwhile, thanks to a population explosion in rural areas, migrants leave rural areas, leading, it is commonly thought, to overly-rapid urbanisation marked by the profusion of slums.

This report investigates demographic change in rural areas of the developing world since 1990 to address the following questions:

- What is special about demography in rural areas of the developing world? What are the main changes being seen these areas?
- What are the main drivers of rural demography, and how are they evolving?
- What, given these drivers, is likely to happen to rural populations in the future? What does this imply for policy?

Secondary sources have been used to answer these questions, drawing on existing databases that compile statistics from censuses, demographic and health surveys, and the literature. To explore changes at country level, 16 relatively populous developing countries were selected to represent their regions: for Asia, *Bangladesh, China, India, Indonesia* and *Vietnam*; for the Middle East and North Africa, *Egypt, Iran* and *Morocco*; for Latin America, *Brazil, Costa Rica, Mexico* and *Peru*; and for sub-Saharan Africa, *Ethiopia, Ghana, Kenya* and *Senegal*.

A simple framework has been adopted from McFalls (2007) that states that populations change as people are added through fertility, subtracted through mortality, and move through migration. Populations pass through demographic transitions in which death rates fall first, then fertility and birth rates fall after a lag, with population growing rapidly in-between. Accompanying this is usually a transition that sees populations urbanise.

Rural areas differ demographically from urban areas in developing countries in three main respects One difference is that mortality tends to be higher in rural than urban areas, largely owing to high mortality of children under age five. Higher mortality stems from lower incomes and more malnutrition, less clean water and sanitation, and fewer medical services. This comparison, however, may only be valid at the mean: informal urban settlements often suffer all the health disadvantages that rural areas experience, and sometimes worse.

A second difference is that fertility in rural areas tends to be higher than in urban areas. That again may be a function of lower incomes, but may also be associated with agriculture – where it is easier to combine child-raising with farm work compared to, say, working in a factory.

The combination of higher mortality and fertility may mean that demographic transitions in rural areas are delayed, with higher rates of natural population growth in rural areas.

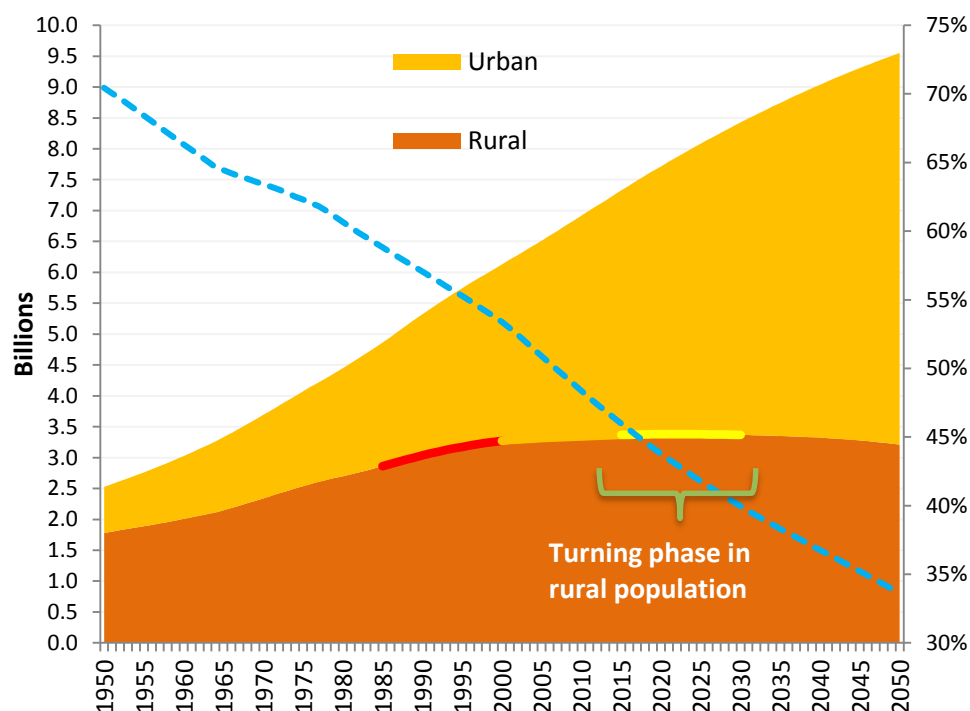
Such growth does not necessarily show in the actual rural population rising so quickly because of the third difference: that most rural areas see out-migration to urban areas. That is why cities grow

faster than rural areas. Migration may also reduce the ratio of working to dependent population in the countryside, although falling fertility may more than compensate for that effect.

Patterns in rural population change

The world is becoming less rural (Figure A). Not only have we passed the point at which more than 50% of the world's population is urban (reached in 2007), but it is also expected that between 2015 and 2030 the world's rural population will peak, at about 3.3 billion, and then decline.

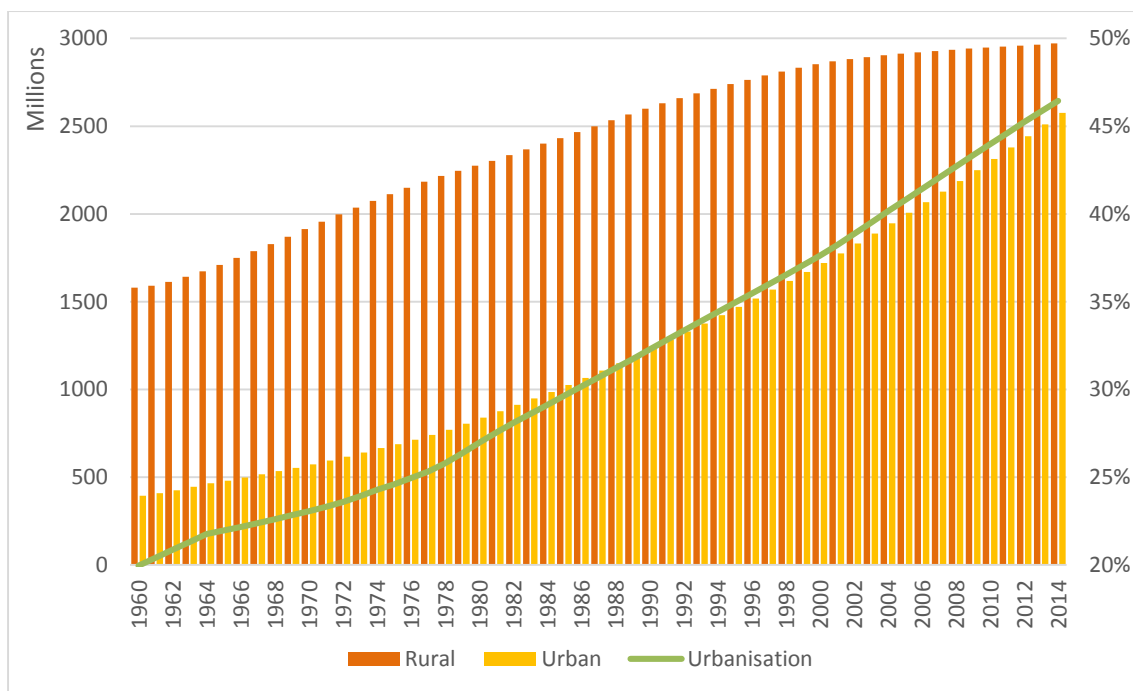
Figure A: World population, 1950 to 2050 projection, rural and urban



Source: FAOSTAT data

The developing world remains, however, more rural than urban – just (see Figure B). Urbanisation has risen from 20% in 1960 to 46% in 2014. Rural population growth has slowed notably since the turn of the new century: indeed, between 2004 and 2014 the net addition to rural populations of the developing world was just 68 million persons – just 2.3% in ten years. The overall view hides considerable differences across the developing world: rural populations are already in decline in East Asia and Latin America; those for South Asia and the Middle East and North Africa are growing ever more slowly; while rural populations in sub-Saharan Africa (SSA) continue to grow rapidly.

Figure B: Rural and urban population, developing world, 1950 to 2014



Source: World Development Indicators

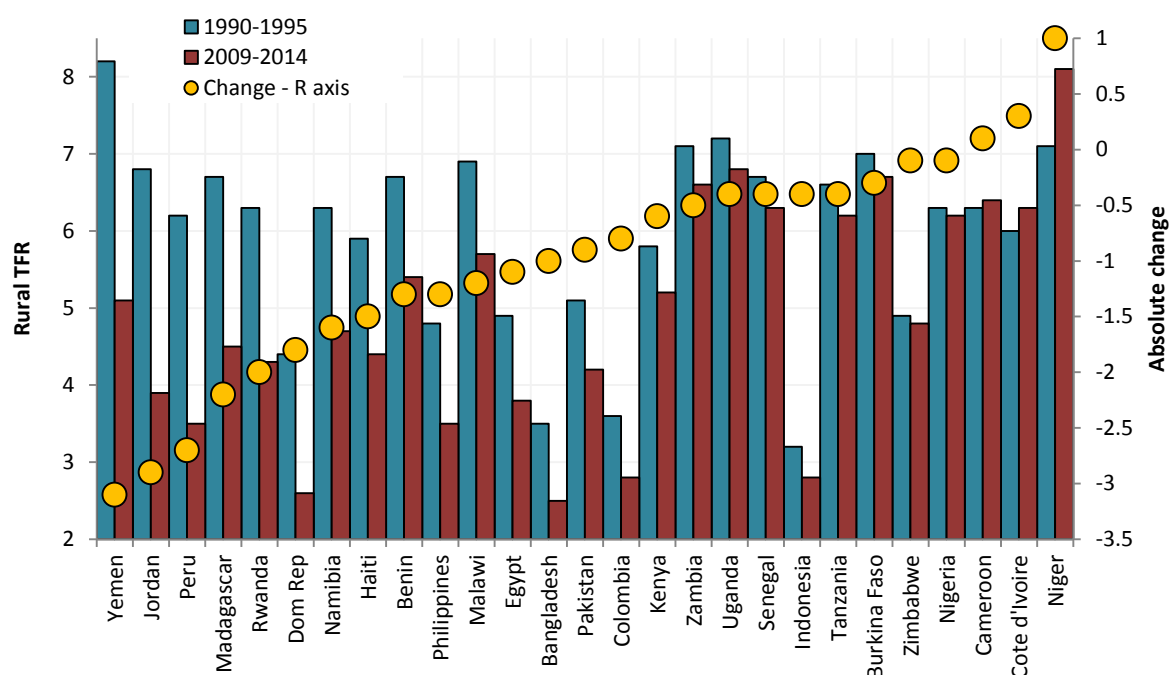
Given rapid population growth in the last 50 years, rural populations have inertial growth since their younger cohorts are so much larger than older cohorts. More recent trends that will eventually drive population growth, however, can be glimpsed by looking at changes in the youngest cohort (0-4 years old). In the 16 selected countries, while only five have rural populations that are declining, in 13 cases the population in the 0-4 cohort has already peaked and that cohort is now getting smaller. The exceptions are all from sub-Saharan Africa, where rural fertility still remains high, even if in decline. Africa apart, the rest of the developing world seems clearly headed towards declining rural populations in the near future.

Fertility

Total fertility rates (TFRs) fell across the world between 1961 and 2013. Globally, the TFR halved, falling from just over 5 to less than 2.5. Between 1995 and 2013, fertility rates fell faster than the global average in South Asia, the Middle East and North Africa (MENA), Latin America and the Caribbean (LAC), and SSA, though slower in East Asia and the Pacific (EAP) – the latter partly because the region was already quite far through the transition to low fertility by 1995.

Rural fertility tends to be higher than urban, typically by about 1.5 children per woman in childbearing years. Most rural fertility rates in the developing world have been declining over the last three decades, with only a few exceptions such as Cameroon, Côte d'Ivoire and Niger (Figure C).

Figure C: Changes in rural fertility rates, 1990-1995 to 2009-2014, 27 countries



Source: DHS Statcompiler

Note where more than one observation between 1990 and 1995 or between 2009 and 2014 exists, in the former case the earliest, and in the latter case the latest were chosen.

The causes of fertility decline can be grouped into four sets. One is mortality, and especially child mortality: when mortality falls, fertility tends to fall as well because parents set their desired numbers of births in the light of the expectation that some children will not survive.

A second set of reasons are economic. Historically, more children have provided the household with more workers as well as more offspring that might care for the parents in their old age. Increasingly, however, the development of economies has created jobs with much higher returns for those with the requisite education and skills. Even in rural areas, returns to education can be high, but that requires some investment, so parents face a trade-off between the quantity and quality of children they have. At the same time, more work opportunities have been created for women, so that the opportunity cost of bearing and raising children has risen. In many parts of the developing world the economics of children have shifted from having many children to having fewer but better-educated offspring.¹

A third influence on fertility is cultural transmission, whereby desired fertility is affected by models seen in the media, both real and fictional, and among friends and neighbours. For example, TV soap operas feature wealthy and successful people who usually have small families.

A fourth driver is policy that may encourage lower fertility, either directly through exhortation and family planning services, or indirectly by reinforcing some of the drivers that lead to lower fertility.

Much debate arises around the strength of the different factors and the relationships between them. Rwanda's fertility decline in the late 2000s is typical in combining elements of increased child survival, increased incomes, more female education and a family-planning campaign involving communications and the provision of contraceptives.

¹ Galor (2012) considers economics factors as the most likely explanation for the remarkable change that took place in fertility in today's high-income countries in the 1870s when, for the first time in history, rising incomes led to falling fertility – a pattern that has subsequently prevailed across the world.

Population characteristics, such as stage of development or demographic transition, may also affect the relative power of the drivers of fertility decline. For example, in rural Bangladesh older women had experienced high child mortality in the 1970s and this influenced their ideal family size: younger women respond more to economic factors, including the jobs for young women in garment factories. When land becomes short, that may influence parents' decisions. By the late 1990s in rural Nyeri, Kenya, people reported that their inheritance for their children could no longer be land, so that education was now the preferred endowment. Fertility rates dropped sharply.

The trends and drivers of fertility decline suggest that most developing countries that still have rural fertility rates well above replacement levels will see those rates fall in the future. The forces driving fertility decline, whether child survival, economic development, female education, exposure to mass media, and the impact of public efforts to limit fertility should continue to drive down fertility. The exceptions will be where these forces have been interrupted by strife, natural disaster and economic decline.

Sub-Saharan Africa, where fertility has fallen least and least consistently, may see slower declines. Limited fertility decline in the region, however, may simply reflect less progress on growth and development compared to other parts of the developing world. Nevertheless, cross-country regression models suggest that parts of Africa may have a stronger preference for larger families than elsewhere.

Culture, however, may be less persistent than imagined. Many countries in Latin America had fertility rates above six in the 1960s, a result that seemed linked to preferences for large families and Catholic Church prohibitions on modern contraception. Today, most of those countries have fertility at replacement levels. Norms have changed dramatically within a couple of generations.

Mortality

Life expectancy, for both rural and urban areas, has been increasing across the world, from an average of 52 years in 1960 to 71 years in 2013. Increases in the developing world have been greater than in high-income countries, so that life expectancy is tending to converge across regions. Only occasionally in some countries has the trend been reversed by war, famine and economic depression; when crises recede, any loss to life expectancy is quickly made up.

In the developing world, most of longer life expectancy stems from reduced deaths before the age of five. That said, mortality has been falling for both children and adults in most rural areas of the developing world. Rural mortality is almost always higher than that in urban areas, although not only has it been falling in many places, but often faster than in urban areas, so that rural-urban differences are closing. That said, within-country differences in rural mortality across provinces can be large.

In some areas, above all in China and South Asia, mortality is unusually high for females, leading to the observation that many women are missing in these countries. The most recent estimates are of more than 120 million missing women. In the past, the effect was from higher mortality of girls than boys; increasingly it results from sex-selective abortions in places where ultra-sound scanning can indicate the sex of the foetus early in pregnancy, and where people have a preference for sons. Paradoxically, as parents opt for smaller families, the incentives to abort female foetuses may rise.

Reduced infant and child mortality stems from increases in income and wealth; more education of parents and especially of mothers; later marriage of mothers, later first births and increased spacing of births; and improved health services and better public health. For adults, income, education and public health have helped reduce mortality, especially when diseases such as malaria and tuberculosis have been controlled. In the last ten years, the introduction of anti-retroviral therapy for people living with HIV and AIDS has led to much-reduced mortality in those parts of Eastern and Southern Africa with high prevalence of HIV.

Because rural mortality rates are usually higher than urban, and rural mortality varies across regions, plenty of scope exists to continue to improve child survival in the future. As child survival improves, life expectancy will lengthen. Three consequences can be expected:

- Crude death rates in rural areas will fall in most developing countries, thereby tending to prolong rural population growth even while fertility may be falling. This will be attenuated in middle-income countries that are sufficiently far through their demographic transition to have large numbers entering their elderly cohorts whose eventual demise will tend to raise the death rate.
- As more children survive in rural areas, parents may plan for fewer children, realising that replacements for lost children are increasingly unlikely to be needed – thereby tending to push down fertility.
- Perhaps most importantly of all, child mortality is becoming relatively infrequent. With under-five mortality now commonly falling to less than 75 per thousand births, the large majority of children survive to age five and beyond. But it is not just about survival: lower mortality is almost always accompanied by lower morbidity and less growth retardation. Put simply, the quality of children is most probably improving, with future benefits for the individuals, their families, communities and society at large.

Migration

Most rural areas see net out-migration to urban areas. Measuring the extent of this and establishing trends are surprisingly difficult, owing in part to problems of definition and in part to the fluidity of migration in which many moves are temporary rather than permanent.

Migration from rural to urban areas responds to opportunities, such as higher pay and the chance to marry and to gain experience, as well as desperation. In most cases it seems opportunity is the main motive. Migration tends to increase along with capacities and aspirations of potential migrants, meaning it is not always the poorest who move most. Moreover, movements can be substantially influenced by social networks that provide information about opportunities, as well as initial support for migrants seeking work, housing and urban services.

Migration often benefits the sending household, widening the portfolio of income sources, reducing risk and usually gaining income through remittances. Although labour may be lost, increased earnings and remittances tend to allow for compensating investments in farms and rural businesses, such as hiring of extra labour.

Migration is not without dangers and drawbacks. Leaving the household is often stressful and lonely for both migrants and the rest of the family. Migrants run the risk of being badly treated in their workplaces, living in poor conditions, and suffering discrimination in access to urban services.

Even if migration is complex, at least two things can reasonably be expected in the future. One is that rural to urban migration will continue, and quite strongly. The relation between economic growth and urbanisation is well established: the higher per capita incomes, the greater the level of urbanisation. Given that the (crude) natural rate of increase in rural areas *exceeds* that of urban areas in most developing countries, then any increase in urbanisation has to come from rural to urban migration. To urbanise when the rural population is growing faster than the urban requires large numbers to migrate from village to town: probably around 5% to 10% of the rural population every decade.

The second is that migration of all kinds – from rural to urban and from rural to rural, permanent and temporary – may well increase. If migration is largely a function of capabilities and aspirations, then the rising level of formal education in rural areas and the increasing awareness of opportunities in other places conveyed by media and personal communications is likely to stimulate more young people to move. Climate change will enhance this: few activities are affected by the climate as

much as agriculture. As weather patterns alter, so too will the agricultural potential of affected areas. Some farm households may relocate from areas that have lost potential to those that have gained, within the limitations posed by borders and access to land.

Policies for changing rural populations

Policy can help ease transitions already underway or speed transitions occurring more slowly than desired. Three key areas of policies are relevant for rural areas.

One is to **slow population growth**. Direct measures include influencing preferences for family size through messages ranging from advice given in public health services to writing them into the plot lines of soap operas. Regulations to ban child marriage are another measure.

Family planning can close the gap between wanted and realised fertility, gaps that are often at one to two children per mother. Family planning has been criticised, but it often has been effective and some notable successes have been seen, above all in Thailand where the key was making services available in villages.

Some question the need for family planning, but surveys consistently show the gap between wanted and actual births. Others wonder if family planning is cost-effective, but studies show that costs are more than offset by savings in services for infants that were never born, while stemming unwanted pregnancies saves young mothers' lives. Last but not least, family planning has been stigmatised by coercive population control in the past: by forced sterilisations or an association with one-child policies. Family planning should not be, and does need to be, coercive: some well-known cases of coercion, including China's one-child policy, show that draconian measures have little or no effect on fertility.

The key to effective family planning is to provide services tailored to local conditions and linked to other health measures.

Indirectly, other policies can reduce fertility and slow the growth of population. Measures that reduce poverty and inequality can reduce fertility, above all through better education, particularly for girls. Indeed, measures that raise women's status and allow them to realise their potential through education and skills – ranging from controls on early marriage, women's inclusion in workplaces, action to reduce violence against women, equal rights, and gender-sensitive social protection – will usually lead to high fertility being reduced towards replacement levels. Better health care that cuts premature deaths of young children and mothers is also likely to reduce fertility.

A second area pertains to policies that can be introduced to facilitate **land transfer** to specialised farmers in cases where the rural population has begun to decline and rural economies diversify away from agriculture. In some cases, (local) markets may move land from part-time to full-time farmers, but these may work better when informal rights to land are registered and officially recognised. Land transfers are not necessarily about changing ownership: more often it is rights to operate the land that change hands, while households that no longer farm full-time retain their property rights. Occasionally, formal programmes to consolidate holdings where these have become highly fragmented may help to create fields that can be worked more effectively by machinery.

The third policy area concerns policy that explicitly **discourages rural-to-urban migration**. By and large, attempts to restrict movement have not stemmed migration but rather increased the costs and dangers to migrants. Better policy would seek to facilitate rural household choices by: providing better information on opportunities at destinations; reducing the cost of sending remittances; protecting the rights of migrants as workers and in accessing services (simple identity cards can make a difference); and by developing rural financial services that could avert migration undertaken to accumulate capital for investment back in the village.

Consequences of population change in rural areas

Three significant changes are evident from this review. One is the way in which **demographic changes promote women's empowerment in rural areas**. Changes to demography affect women and girls more than men and boys. Lower infant and child mortality, lower maternal mortality, later marriages and longer intervals between births improve women's health and wellbeing. They also allow women, when combined with girls' schooling, more scope to seek jobs, even to migrate, and to gain income, status and autonomy. Even when women stay at home, lower fertility reduces time spent on raising children and on domestic chores, allowing women a better balance between their reproductive roles and other aspects of their lives.

Shifting norms linked to valuing girls and boys equally, that empower and enable women to choose ways of fulfilling aspirations increasingly delinked from their ability to marry, rear children, and otherwise look after the domestic sphere are more suggestive of a sea change than a marginal adjustment. A gentle revolution may be underway: one from which the daughters and granddaughters of the current generation will hopefully continue to benefit.

A second change is the slowing of rural population growth and the eventual decline in rural populations. As this happens, **dependency ratios fall in rural areas** – even allowing for migration's removal of part of the rural working-age population. Slowing rural population growth is therefore delivering a 'demographic dividend', with more people in their active working years. Potentially this can lead to more output, consumption, savings and investment. Although studies of this effect are few, it may well provide a significant boost to growth: one study estimates that a 1% change in the dependency ratio can change per capita production by 1.4%. At the household level, lower dependency ratios are associated with lower workloads and higher incomes.

When rural population starts to fall, however, then labour shortages are likely in agriculture, particularly at peak periods such as planting and harvest. Labour scarcity may lead to the search for labour-augmenting technical improvements, such as simple machinery, or for more external inputs, such as fertiliser. Since the early 2000s, for example, China has seen the emergence of a thriving rental market for farm machinery.

Labour shortages, however, are likely to have an even more important effect: wages for unskilled labour in rural areas will be bid up. Rural wages are rising across many Asian countries, in some cases with signs that the increases have accelerated since the mid-2000s.

With less labour in agriculture and more machinery, the advantage of small-scale cultivation for labour supervision will be undercut, thereby making larger-scale farms economically viable. The stage will be set for land consolidation – but not beyond a scale that can be managed by the family with the help of rented machinery.

A third element is **out-migration from rural areas**, which will continue and quite probably intensify. Migration responds, at least to some degree, to combinations of individual capacity and aspirations, allied to social networks. All these factors are likely to apply more strongly in the future.

Future trajectories in the rural areas of the developing world are thus likely to be very different to what has typically been seen in the last half century or longer, when rural populations have grown rapidly. Demographically, rural areas are likely to see:

- Loss of population as the natural rate of growth slows, possibly even turns negative, while people migrate out of the rural areas.
- Population concentrating more in the working-age cohorts and delivering a demographic dividend, at least initially. Migration would be expected to remove people from working-age

cohorts, mitigating this effect, but from the evidence of falling dependency ratios since 1990, it seems it is not able to entirely offset this effect.

- In time, the large cohorts from times of rapid population growth will progress out of the workforce into retirement, when dependency ratios will once again rise. Where migration is strong this could lead to a countryside with relatively few of working age and with many elderly persons.

Economically, these changes to population will contribute to processes in which:

- Agriculture mechanises and uses less labour.
- Land markets steadily concentrate operated holdings, although not necessarily ownership, in the hands of a minority of households in each village who specialise in farming full time. They may not operate all the land: some of the households that gain most of their income off the farm may still retain part of their owned land for part-time and hobby farming.
- Rural wages rise as labour becomes scarcer. While wages may rise, they may well still lag behind those in urban areas, since productivity typically remains lower in agriculture than most urban occupations.

These changes will take place as rural areas become better connected to urban areas, owing either to improved transport links or to local rural centres growing to become substantial urban areas. Improved connections are likely to create new opportunities for the rural economy, such as supplying the towns and cities with high-value perishable produce, providing leisure and amenity facilities for urban dwellers, and generating environmental services such as water supplies for urban areas. For rural areas sufficiently close to sizeable towns, commuting to work in urban centres may be another option. By and large, more connectivity to urban areas should reinforce the processes described.

In sum, the economic consequences of slowing population growth in rural areas with continuing out-migration should be largely positive, and hence be encouraged. Changes to the lives of women and girls look equally positive and may well have economic benefits as the latent talents of women in production have more of an outlet: a possible 'gender dividend'.

A final point concerns the environment. While population has been growing in rural areas, the chief concern has been natural resources coming under pressure from cropping, grazing, extraction and settlement to the point of being depleted and degraded, in some cases to the point of putting at risk key ecological functions. With falling rural populations, some of those pressures may ease. 'May', however, is the operative word: if demand to use natural resources for production continues to rise from urban populations, lower rural populations will make little difference. Better stewardship of rural natural resources probably depends more on increased demand for ecosystems services, correction of market failures, and deliberate policies to conserve the environment.

Full report: <http://www.odi.org/publications/10366-population-change-rural-developing-world-making-transition>
