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Agriculture and Poverty Reduction: Literature Review and Outstanding Issues

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1. Introduction

The aim of this paper is to review the recent literature on the relationship between growth in agriculture and poverty reduction. In section 2, we first discuss the issues relating to the measurement of poverty, because these matters are central to assessing the impact of agriculture on poverty reduction. This is followed in section 3 by a discussion of the incidence of poverty, first globally and then in the five countries that are the focus of this project. In section 4, we consider the role of agriculture in poverty reduction in general and in the five countries in particular. In section 5, the main conclusions of the literature review are presented. Several outstanding issues are noted in section 6. In the final section, we suggest that a co-ordinated strategy is needed for poverty reduction, which goes beyond reliance on any one sector of the economy. The key elements of such a strategy are accordingly outlined in section 7.

2. Poverty Measurement

Attempts have been made in the current scholarly literature to define conditions under which economic growth would be ‘pro-poor’, although these attempts remain controversial. One view is that growth is ‘pro-poor’ only if the incomes of poor people grow faster relative to incomes of the rest of the population, i.e., both poverty and inequality decline (e.g. Kakwani, 2000). An alternative view is that growth is pro-poor as long as the poor people benefit in absolute terms, as reflected in the change in the value of some agreed poverty measure or indicator (Ravallion and Chen, 2003). As argued in Grewal et al (2010), the emphasis on benefiting the poor in absolute, rather than relative, terms sidesteps the consequential increase in inequalities.

Most poverty studies rely on *income-based poverty* – defined in terms of poverty lines (of say US\$1 per day or US\$1.25 per day). In India, poverty is officially measured in terms of *consumption* – reflected, for example, in the calories per day that are required for healthy living, and specified separately for urban and rural populations. Following the influence of Amartya Sen’s writings on capabilities and deprivations (e.g. Sen, 1986, 1989), some recent

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studies, including by the United Nations Development Program (UNDP), have embraced *multidimensional* definitions of poverty that include the dimensions of consumption, malnutrition and broader welfare. In July 2010, the Oxford Poverty and Human Development Initiative (OPDI) and the UNDP launched the Multidimensional Poverty Index (MPI), which goes beyond income by reflecting a range of deprivations related to education, health outcomes and standard of living. These measures have been incorporated by UNDP into the *2010 Human Development Report* (UNDP 2010).

The use of multidimensional poverty instead of income poverty can make a significant difference in assessing the performance of a country in reducing poverty. Thus, for example, although the rate of extreme poverty at \$1.25 a day in Indonesia is only 7.5%, it rises to nearly 21% under multidimensional poverty. Similar differences can also be found in other countries (see, Table 1). In a study of 15 Asian countries, Habito (2009) compares their performance in poverty reduction by estimating elasticity of growth (PEG), which measures percentage reduction in poverty for every 1 percent growth in GDP. When poverty is measured in terms of income, Indonesia, Pakistan and China are found to be at the top of the, with PEG exceeding -1.0, implying that 1% growth in GDP resulted in more than 1% reduction in poverty in these countries. Malaysia, Thailand, Vietnam, Sri Lanka, Nepal, Bangladesh and Cambodia are ahead of India, which ranks 11th and the Philippines, Mongolia, Singapore and Myanmar are at the bottom of this list. However, when poverty is measured according to the Human Poverty Index of the UNDP, the ranking of the countries changes and Indonesia now drops to the bottom of the list. This shows that growth in incomes does not always translate as increase in other aspects of welfare (e.g. because of limited access to health and education services).

3. Incidence of Poverty

3.1 Global Poverty

According to the World Bank's Global Development Indicators 2010, global poverty at USD 1.25 a day declined from 1.9 billion in 1981 to 1.4 billion in 2005, but there are significant differences between countries and regions. The East Asia and the Pacific region was the world leader in lifting 750 million people out of poverty. China alone lifted 627 million people out of extreme poverty. The number of poor people increased, however, in South Asia from 548 million in 1981 to 596 million in 2005. In India the number of poor people increased from 420 million in 1981 to 456 million in 2005. The largest increase in the number of poor people during these 24 years was in Sub-Saharan Africa, from 211 million to 388 million. There was virtually no change in the number of poor people in Latin America and the Caribbean.

A more recent account of the incidence of rural poverty in the developing countries is provided by IFAD (2011a) in its *Rural Poverty Report* and in IFAD (2011b) *Agriculture: Pathways to Prosperity in Asia and the Pacific*. According to IFAD (2011a), the number of people in poverty in the developing world is 2686 million in 2008¹ (which has increased from 2620 million in 1988. Within the developing world, South Asia had the dubious distinction of having the highest number of people in poverty in 2008 at 1149 million, whereas in 1988, this distinction went to East Asia, which had 937 million poor as against 906 million in South

¹ In IFAD (2011a), the data for individual countries is for the latest years "close to 1998" and "close to 2008."

Asia. The second largest concentration of people in poverty is in Sub-Saharan Africa, where the number of poor has increased from 343 million in 1988 to 587 million in 2008. Due to the impressive and sustained poverty reduction in East Asia, the number of people in poverty in that region had fallen to 490 million in 2008. Poverty in the developing countries is primarily rural, as nearly 72% of those in poverty in these countries live in rural areas. But, in South Asia more than 80% of the poor are in rural areas whereas in Sub-Saharan Africa the figure is 75%.

The rural concentration of poverty in the developing countries highlights the importance of agriculture in poverty reduction strategies of these countries, because most of the rural population relies directly or indirectly on agriculture. According to simulations done by IFAD (2011b), meeting the millennium development goal of halving the poverty (at \$2 per day) in Asia and the Pacific region would require 28% increase in agricultural expenditure, 23% increase in fertilizer use and 24% increase in agricultural investment during 2007-2013, together with 56% increase in agricultural Overseas Development Assistance.

Looking ahead to 2050, the prospect of poverty in the developing countries is particularly worrying. While the world population is estimated to increase by 2.3 billion to about 9.0 billion by 2050, most of this increase will occur in the developing countries. Population of the developed countries is estimated to increase only marginally – from 1.23 billion to 1.28 billion. Millions of those who are just above the poverty lines (whichever way defined) remain vulnerable to exogenous shocks, such as sudden falls in food supply, spikes in food prices, or increase in unemployment rates. For example, the United Nations (2009) report expressed the concern that the incidence of poverty in the developing countries could rise because of the loss of jobs brought about by the global financial crisis (GFC). The level of economic activity in most of the developing countries has been adversely affected by the falling demand in the developed countries in the wake of GFC. In China alone, 20 million workers lost their jobs due to GFC. When families drift into poverty due to an economic upheaval such as GFC, they often stop sending their children to school, girls are among the first to be affected this way. Poverty is also the core cause of hunger and most of the world's hungry also live in the developing countries. According to FAO (2009), global number of the hungry rose from 141 million in 1992 to 963 million in 2008. The fear is that because the fallout from GFC has created serious challenges with respect to public spending on social protection and social stability, the long lags in employment recovery could erase the progress made over the past few years in reducing extreme poverty through the generation of decent work opportunities for all.

3.2 Poverty in the Selected Countries

There are several estimates available for poverty measures in the five selected countries on an income and consumption basis. Some studies are also available for multidimensional poverty index for individual countries (e.g. Alkire and Seth (2008) for India and Yu (2008) for China). The multi-country estimates shown in Table 1 are based on several sources, namely the *World Health Survey* from the World Health Organisation (2010), the *Demographic and Health Survey* funded by USAID (DHS 2010) and the *Multiple Cluster Indicator Survey* (MICS) from the UNICEF (2010). It is worth noting that incidence of multidimensional poverty in Table 1 is lower than that of extreme income poverty in all countries, except India. In South Africa, multidimensional poverty is almost non-existent, according to these figures.

Table 1: Alternative Poverty Measures, Five Countries

	Year	Multidimensional poverty (proportion of population poor, %)	Income poverty	
			(US\$1.25 per day)	(US\$2 per day)
China	2005	12.5	15.9	36.3
India	2005	55.4	41.6	75.6
Indonesia	2007	20.8	29.4	60.0
South Africa	2003	3.1	26.2	42.9
Vietnam	2002	14.3	21.5	48.4

Source: Alkire and Santos (2010). These estimates have also been included in UNDP (2010).

The dynamics of poverty also reveals a high degree of vulnerability to external shocks, such as droughts, floods, family sickness, death, and price fluctuations. The Chronic Poverty Report (2004) divides the population of a country into four groups: never poor, occasionally poor, transitorily poor, and chronic poor. Table 2 shows the estimates of the percentage of rural population in these groups. It is clear that both China and Indonesia have almost two-thirds of rural population that is never poor whereas nearly 10% is always poor. In India, a quarter of rural population is always poor while another 36% is in vulnerable categories and only 38% is never poor. In Vietnam, about a fifth of rural population is never poor, 28% is always poor and the remaining 52% is vulnerable to poverty. Poverty reduction policies need to target three of the four categories of population in order to achieve sustainable results.

Table 2: Poverty and Vulnerability (per cent of rural population)

Country	Chronically Poor	Transitory poor	Occasionally Poor	Never Poor
Rural China	9.6	15.2	7.3	67.9
Rural India	25.3	22.8	13.3	38.5
Rural Indonesia	9.6	19.7	9.6	64.2
Rural South Africa	N.A	N.A	N.A	N.A
Rural Vietnam	28.1	39.3	12.2	20.4

Source: IFAD (2011b), Table 3, p.16.

3.2.1 China

China's extremely impressive reduction in poverty during the past three decades is well documented. In a recent report, the World Bank (2009) points out that even though China was able to lift more than half-a-billion people out of poverty between 1981 and 2004 – an achievement that is “without historical precedent” – the challenge of poverty reduction still remains serious for China, as this country still had 254 million poor in 2005, the second largest number in the world, after India.² The same report further noted that the responsiveness of poverty to growth in China has also declined since 1981 and poverty elasticity of growth (PEG) has fallen from -2.52 in the sixth Plan (1981-1985) to -1.02 in the Tenth Plan (2001-2005). In the meantime the Gini index of income inequality had increased from 30.9 in 1990 to 45.3 in 2003. As income levels determine the access to basic service of

² The World Bank (2009) also uses the international poverty line of \$1.25 per day whereas China's official poverty line for rural population is 785 Yuan per day, which translates into \$0.57 in 2005 PPP dollar.

education and health, disparities in income are also accompanied by disparities in human development opportunities.

More than 99 percent of China's poor are in rural areas. As migration to urban areas provides an escape from poverty for many rural residents, rural migration has increased from 84 million in 2001 to 137 million in 2007. Because only the young and those with some education usually migrate, those left behind suffer from the hard core of poverty and vulnerability. Nearly one-third of China's rural residents were found to be consumption poor at least once between 2001 and 2004. Precautionary savings are high. Even households that are below the poverty line were found to be saving, because access to basic services such as health care is based on private expenditure. Large segments of China's rural population, and of the central and western regions, are still excluded from the full benefits of economic growth (Grewal and Ahmed 2011).

The World Bank (2009) cautions that if domestic consumption is to supplement investment and external trade as a central driver of China's economic growth, it will be important to reduce vulnerability to poverty, and suggests that China should:

- a) raise its poverty threshold to international poverty standard of \$1.25 per day in PPP 2005 dollars;
- b) retain rural poverty as its top priority;
- c) measure poverty in terms of consumption instead of income;
- d) adopt a broader conception of poverty to include access to affordable basic services of education and healthcare; and
- e) offer social protection to vulnerable groups.

Growing constraints on publicly-funded health care and basic education add to the vulnerability of households which can be easily pushed back into consumption poverty, because of the need for high precautionary savings to fund education and healthcare (Meng et al., 2005). China's government has been aware of the remaining challenges of poverty and inequality and has been searching in recent years for an alternative development model that provides greater equality, especially in respect of access to health and education (Sheehan, 2010).

3.2.2 India

Although there has also been a reduction in extreme poverty in India, progress has been much slower than in China and some of the other selected countries, and India has the highest incidence of poverty among the five countries that are the focus of this particular study. According to the figures in Table 1, 41.6% of Indian population were extremely poor (below US\$1.25 per day) in 2005, and 55.4% were poor in terms of the Multidimensional Poverty Index.

Poverty in India is also disproportionately high in certain regions (e.g. states in central and eastern India), social groups (Scheduled Castes and Scheduled Tribes) and more generally among women. These social barriers to inclusiveness are proving to be quite stubborn and their impact has not diminished with economic growth. The poor population also remains highly vulnerable to the risks that follow illness, unemployment or childbirth, and to the continued high incidence of malnutrition.

India's rapid growth in recent years has been mainly driven by the services sector, particularly four industries: communications, banking and insurance, trade, and real estate. But growth in India's services sector may benefit the poor directly, because employment in these service industries requires educational qualifications that the poor typically do not have.

India's agricultural sector grew strongly in the wake of the Green Revolution, but growth has slowed in recent years. This deceleration has contributed to rural distress in parts of the country, affecting both large and small farmers. The Government had developed a strategy involving a near doubling of the rates of growth of agriculture during the 11th Five Year Plan (2007-12). The expectation was that rapid growth in agriculture would generate more employment and income for the poor. Accordingly, the 11th Five Year Plan had stipulated that growth rates in agriculture would rise to more than 4% per annum to achieve the Government's objective of inclusive growth. The Mid-term Appraisal of the 11th Five Year Plan (Government of India 2010) has now acknowledged that the target growth rate of 4% per annum does not now appear to be achievable. There are several reasons for this failure of agricultural growth. One of these reasons could be characterised as implementation fatigue, showing up in delays in the implementation of key initiatives that were expected to raise the growth rates of agriculture. Witness the evidence provided in the Mid-Term Appraisal document itself:

“Given these ambitious objectives, the performance so far has been most disappointing. Till 31 August 2009, an expenditure of nearly Rs. 5000 crore [Rs 50,000 million] had been incurred during the Eleventh Plan period but this was entirely on old projects. No watershed project under the new IWMP [Integrated Water Management Programme] had been sanctioned till then. There are still about 16,744 ongoing projects at various stages of completion, which have been unduly delayed on one account or another. This poses a serious question over where the massively raised outlays for the new IWMP in the Eleventh Plan are going to be spent. What is even more worrisome is that the steps that need to be taken to actualise the potential inherent in the new guidelines have yet to be put in place.” (Government of India, 2010, pp. 70-71)

3.2.3 Indonesia

During the 1990s, Indonesia was among the best performers in reducing income poverty for every percentage point of economic growth, particularly in the rural areas, but progress has been slower since 2000. The impact of the East Asian financial crisis of the late 1990s led to a sharp jump in poverty and the headcount index of poverty rose from 17.7% in 1996 to 23.4% in 1999. The rate at which poverty was reduced has been slow and it took Indonesia until 2003 to return to the 1996 headcount rate. In terms of the number of poor people, Indonesia had more poor people in every year from 1999 to 2008 than it had in 1996. In 1996, Indonesia had nearly 25 million rural poor and 10 million urban poor. In 2008, the number of rural poor had fallen to 22 million while the number of urban poor had increased to nearly 13 million (Cervantes-Godoy and Dewbre (2010). The incidence of extreme poverty in Indonesia by 2007 was estimated to be 29.4% (on a US\$1.25 per day basis), and 60% in terms of people living on less than US\$2 per day (Table 1). Contrary to the finding in Habito (2009), who used HDI for measuring multidimensional poverty and found it to be much higher than extreme poverty, figures in Table 1 suggest that using MDI, incidence of multidimensional poverty in Indonesia is lower than that of extreme poverty.

3.2.4 South Africa

The rates of economic growth of South Africa's economy have not been high enough to absorb the growth in labour force. Although 3.2 million jobs were created between 1994 and 2009, labour force grew by 4.7 million during the same period, adding further to the already large pool of the unemployed. Indeed the number of unemployed more than doubled between 1995 and 2009 and unemployment rate reached 28.3 percent in 2009. Unemployment rates for the youth must be even higher. Employment growth has been concentrated mainly in two sectors - wholesale and retail trade and financial and business services – which together account for two-thirds of total employment growth since 1994. The high incidence of crime in South Africa has in fact resulted in a rapid employment expansion within the financial sector for providing security services (Bhorat et al 2010).

Understandably, the number of social protection grant recipients has increased from three million in 1997 to 9.4 million in 2005, to 13.5 million in 2009. But, the fiscal cost of social protection is already impacting adversely on South Africa's budgetary priorities. Thus, while government expenditure on social grants has been increasing, government expenditure on most budget items (e.g. education and health) has remained fairly constant in real terms (Leibbrandt *et al.*, 2010).

Bhorat and van der Westhuizen (2011, p.1) find that at the aggregate level, headcount rate of poverty declined in the first decade of democracy in South Africa. “Specifically, the higher poverty line of R322³ a month in 2000 prices, aggregate poverty declined by three and a half percentage points, from 52.5 percent in 1995 to 49 percent in 2005, while at the lower poverty line of R174 (also in 2000 prices) the decline was by more than seven percentage points, from 31 percent to 24 percent. The relatively larger decline at the lower poverty line suggests that those in deeper poverty experienced a relatively larger improvement in their welfare over the period. Relative poverty, as measured by the poverty gap ratio displays a similar trend at the aggregate. At the R322 line, the poverty gap index declined from 26 to 21 percent. This means that in 1995 the average poor person lived about 26 percent below the R322 poverty line. Ten years later, the average poor person lived 21 percent below the poverty line. At the lower poverty line, the poverty gap ratio declined from 12 percent to approximately eight percent. Ultimately though, these results suggest the reduction in the headcount index and poverty gap was both significant and robust to the choice of poverty line.” The recent OPHI/UNDP estimates (Table 1) had 26.2% of the population living below US\$1.25 per day in 2003, but only 3.2% in poverty in MPI terms.

3.2.5 Vietnam

Finally, Vietnam has achieved remarkable reductions in poverty over the past two decades, measured using income or consumption measures from the Government's Vietnam Household Living Conditions Survey. Poverty is estimated to have fallen from 58.1% of the population in 1993 to 28.9% in 2002 and further to 14.5% by 2008 (World Bank, 2010). Inequality remains low, including access to public services, so that the multidimensional poverty rate is relatively low (Table 1), but poverty has become increasingly concentrated in

³ All poverty and inequality measures are individual measures, calculated using per capita total household expenditure. Per capita total household expenditure was created by dividing total household expenditure by the number of people in the household (or household size). Two standard poverty lines are used in our analysis. The R322 line (in 2000 prices) has been derived using a cost-of-basic needs approach, while the R174 line is equivalent to \$2 dollar a day (again in 2000 prices) (See Hoozevee & Ozler, 2006). The 2000 poverty lines were adjusted for the impact of inflation both in 1995 and 2005 and these adjusted poverty lines were used to calculate the poverty measures in the two years.

rural areas and among certain social groups, such as ethnic minority populations. There are growing concerns about poverty and living conditions in Vietnam's cities and semi-urban areas due to high rates of urban population growth (including a heavy influx of migrant workers), excess demand for urban services and a continuing rise in the cost of living (World Bank, 2010).

4. Role of Agriculture in Poverty Reduction

The importance of agriculture in poverty reduction derives from the facts that (a) the incidence of poverty is disproportionately high in the developing countries, which still rely heavily on agriculture for employment and income generation, (b) the poorest households typically rely more on agriculture for farming or employment, and (c) because the poor have few assets and no skills other than manual labour to sell, they generally face many obstacles in connecting with non-agricultural economy for jobs, whereas agricultural growth can provide them jobs where they live. Social and economic exclusion further reduces the opportunities available to certain groups, generally including women, youth, ethnic minorities and indigenous people.

The impact of agriculture on poverty reduction depends on the interaction of several effects. First of all, the direct effect of growth in the agriculture sector is to raise income levels of those employed in this sector. Secondly, how much the poor people benefit from agricultural growth depends on the rate of participation of the poor in agriculture. This, in turn depends on the type of agriculture in a particular location. For example, in a highly mechanised agriculture, the participation of the poor and unskilled people may be minimal. On the other hand, in the subsistence agriculture, or in the fruits and vegetable farming, the rate of participation of the poor may be relatively high. Loayza and Raddatz (2006) emphasise the importance of unskilled labour intensity of agriculture in determining its ability to reduce poverty. Thirdly, the total contribution of agriculture to poverty reduction depends on the how large the agriculture sector is – i.e., the share of the agricultural sector in national economy.

Finally, there are the indirect contributions that agricultural sector makes to the growth of the rest of the economy and vice versa. The indirect growth effects from agriculture are based on the demand for its products in the non-agricultural economy, and may differ among countries and regions. The Engle's Law stipulates that as incomes rise, people spend falling proportions of income on agricultural products. However, it is also true that as urban incomes rise, consumption of several agricultural products, such as meat, eggs, vegetables and fruits also rises. The current awareness of climate change has increased the demand for agro-fuels, further strengthening the indirect multiplier effect of agriculture. Accordingly, Haggblade, Hazell and Dorosh (2007) estimated that 'best-guess generalizations (of the agricultural multiplier) probably lie in the range of 1.6 to 1.8 for Asia and 1.3 to 1.5 for Africa and Latin America'. This implies that every dollar in direct income generated in agriculture triggers another 30 to 80 cents in second round income gains elsewhere in the economy." They explain further that:

“As countries grow, the role of agriculture as a generator of overall growth declines, and new drivers emerge both in the rural non-farm economy (urban-to-rural subcontracting) as well as the urban economy (e.g., manufactured exports), a phenomenon widely observed over the past decades in the Asian economies. With rapid (urban) income growth comes a significant diversification of diets into higher value agricultural products such as meat, dairy, fruits and

vegetables, providing an additional demand boost for agriculture and thus larger reverse linkage effects.” p. 14

Cervantes-Godoy and Dewbre (2010) undertake a detailed examination of the importance of agricultural growth in poverty reduction in a sample of 25 countries that are selected on the basis of three criteria: (a) high initial rate of more than 10% poverty at USD 2.00 per day; (b) reductions in poverty rate in every year within 1980-2005 range; and (c) availability of at least two years of survey data for calculating trends. As a result of these criteria, India and South Africa were excluded from this study, while China, Indonesia, and Vietnam are included. The authors find that in comparison with the rest of the economy, agriculture appears especially powerful in lifting the poorer groups out of poverty, though its comparative edge declines substantially when it comes to those closer to the \$2-day poverty line.

The key finding of their paper is that growth in agriculture plays the leading role in the reduction of extreme poverty, but non-agricultural growth is more powerful in reducing poverty among the well-off poor (i.e., in reducing the \$2-day poverty headcount). The dominance of agriculture in reducing extreme poverty declines, however, as countries become richer and as income inequality increases. Non-agricultural growth originating in the extractive industry has lesser effect on poverty reduction with the result that agriculture is usually more powerful in reducing poverty, especially extreme poverty in resource rich countries. Even in resource-poor countries (where the extractive industry makes up less than 10 per cent of GDP), non-agricultural growth is found to be more powerful in reducing poverty among the better-off poor.

Of particular interest to this project is the finding that during 1980-2005, non-agricultural growth made the largest contribution to poverty reduction in China and Vietnam, whereas agricultural growth made the largest contribution in Indonesia. The finding by Cervantes-Godoy and Dewbre (2010) about China is in contrast to the results obtained by Ravallion and Chen (2007), who had found that over the period 1980-2001 the impact of the primary sector on headcount poverty reduction was 3.5 times higher than the impact of either the secondary sector or the tertiary sector. They estimated poverty elasticity of growth in China at -7.85 for agriculture and -2.25 for non-agricultural economy. Similarly, their finding also contradicts the finding by Suryahadi et al (2009) that urban services were the most important factor in poverty reduction in Indonesia.

Cervantes-Godoy and Dewbre (2010) disaggregate the overall income sources into agricultural GDP per worker, non-agricultural GDP per worker and remittances per capita, and calculate how much of the predicted change in poverty could be attributed to changes in each of the above sources. The paper finds that more than 52% of the average poverty reduction in 12 of the 25 countries studied was due to agricultural growth, while remittances contributed to 35% of the reduction and the rest was due to non-agricultural growth.

A number of other recent studies also support the above findings. For example, using the provincial panel data analysis of China, Motalvo and Ravallion (2010) observe that productivity and growth in agriculture improves social welfare and is vital to poverty reduction. They conclude that growth in primary sector, and not necessarily growth in the secondary or tertiary sectors, has contributed to a greater part in China's success against absolute poverty. Bresciani and Valdes (2007) also note that agricultural sector growth has a

higher multiplier effect due to its multifunctional nature and has been important strategy for countries that have achieved rapid success in poverty reduction so far.

Motalvo and Ravallion (2010) argue that “far larger reductions in poverty could have been possible if the same growth rate was more even across sectors and areas”. Thus, it is noted that China was able to put more priority on agriculture and rural development which were seen as essential in lifting masses out of poverty. As had been reported in Ravallion and Chen (2004), rural poverty in China had gotten worse in the 1960s and mid-1970s during the Great Leap Forward and the Cultural Revolution. Under the collective farming system, the rural population faced weak incentives to work and produce productively. The Government’s decision to de-collectivise agriculture and shifting the responsibility for farming to the households brought huge one-off gains to China’s poor. Continuous reforms and introduction of “household responsibility system” led to a relatively equitable allocation of land and when government’s direct investment increased agricultural productivity and output, this had a substantial impact on reducing poverty.

To shed light on the determinants of poverty dynamics in China using sub-national data for the period 1983-2001, Motalvo and Ravallion (2010) find that an increase in GDP in the primary sector has significant poverty-reducing effects (with elasticity of around -2.23), reaffirming the argument that growth in the agricultural sector is the key to fighting poverty and hunger. Cross- country evidence also supports these results. In a similar study but in the context of India, Ravallion and Datt (2002) had shown that marked growth in the primary sector (agriculture) was, on average, more poverty reducing compared to secondary (manufacturing) and tertiary (services) sectors.

In another study that involved countries from Sub-Saharan Africa and East Asia, Kurihara and Yamagata (2003) show that agricultural productivity plays a critical role in pro-poor growth through providing a greater share in employment of the poor. Their findings suggest that pro-poor growth in East Asia was significantly promoted by labour-intensive and export-oriented agricultural and manufacturing industries which increased employment opportunities for poor and uneducated workforce.

In a cross-country regression analysis involving many poorer developing countries, Thirtle *et al* (2001) reveal that, on average, every 1% increase in agricultural productivity reduces percentage of people living in less than a dollar a day by between 0.6 and 1.3%. This research notes that while agricultural growth stimulates the creation non-firm rural and urban employment, no other sector has such a stronger impact on poverty reduction, benefiting the poor.

Case studies on different individual countries show that there is direct correlation between agricultural productivity gain and increases in rural income. Dev (1998) estimates that when conditions were right and agriculture sector was performing better, average real income of farmers and rural people rose by about 90% in the case of India. The overall social benefits and spillover effects are even greater since it is estimated that the workforce engaged in agricultural and firm-related activities account for about 45% in East Asia, 55% in South Asia and more than 64% in Sub-Saharan Africa (see, DFID, 2005).

In a study of the relationship between output growth and poverty in more than 50 countries Loayza and Raddatz (2010) find that the composition of growth in terms of intensive use of unskilled labour, the kind of input that the poor can offer to the production process, matters

significantly for poverty reduction. Sectors that are more labour intensive (in relation to their size) tend to have stronger effects on poverty alleviation. They find that agriculture is the most poverty-reducing sector, followed by construction, and manufacturing; while mining, utilities and services by themselves do not seem to help poverty reduction (pp. 21-22).

Ravallion and Datt (1996) also found that growth in agriculture and rural economy had been highly beneficial to reducing rural poverty in India.⁴ In a subsequent study, Ravallion and Datt (2002) found that higher farm yields, higher state development spending, higher non-farm output and lower inflation were all poverty reducing in India. Differences in the rates of farm output growth mattered most for the poor and sectoral composition of growth was more important for poverty reduction in those states that had poor initial conditions. Non-farm growth was less effective in reducing poverty in these states. Similar evidence was reported by studies such as Topalova (2008) and Virmani (2007).

Suryahadi *et al* (2009) find that in Indonesia, growth in agriculture has been an important factor in reducing rural poverty in Indonesia, although growth in urban services has played a more significant role. They explain that urban services have benefited the rural poor, because these services are highly labour intensive and require low skills and low initial capital investment.

That growth in agricultural sector is important for poverty reduction is also supported by Warr (2002), who favours agricultural sector not only because of its low skill and competence requirements, but also because of its potential for stimulating growth in the secondary and tertiary sectors. For example, increased commercial agricultural activities may lead to expansion of small food processing industries and in turn increase labour mobility from rural to urban areas. In a similar vein, Pack (2009), who doubts whether South Asian countries would be able to follow the same path to the growth in manufacturing and exports as was followed by the East Asian countries, points out that in South Asia, growth in rural incomes and employment should be propelled by an expansion in agricultural productivity that gives rise to increased demand by rural families for many household products and agricultural inputs that can be efficiently produced in rural areas. He notes that even in China, Korea, and Taiwan a dramatic increase in agricultural productivity had supported growth in the small-and- medium-enterprise sector that sold its products to the farms.

De Janvry and Sadoulet (2010) find that labour productivity gains in agriculture (measured by the value added per worker) were large in East Asia during 1993 to 2002 when rural poverty rates also fell sharply. They find that agriculture productivity has much larger positive effect than other sectors on poverty reduction in developing countries of Sub-Saharan Africa and South Asia, but not so in Latin America and the Caribbean. For example, elasticities of poverty reduction of agriculture are reported to be -1.2 in China and India, but only -0.3 in Brazil. In Latin America and the Caribbean, agricultural productivity gains did not translate into lower rural poverty rates, as these gains were driven by capital and thereby created fewer employment opportunities. Janvry and Sadoulet estimate that when both direct and indirect effects of agriculture and non-agriculture sectors are considered, 1.0 percent growth in agriculture induces a 2.24 percent reduction in poverty. In comparison, 1.0 percent growth in all non-agricultural sectors taken together produces an overall poverty reduction of

⁴ Ravallion (2008) emphasises for China the role of strong state institutions implementing supportive policies and public investments, together with promoting agriculture and the rural economy.

2.85 percent. But, given that the share of agriculture in GDP is smaller than that of the all other sectors combined, its relative contribution to poverty is higher.⁵

Despite these major roles agriculture plays, Hasan and Quibria (2004) caution against what they call the misplaced “agricultural fundamentalism,” or the argument that agricultural growth always leads to more rapid poverty reduction, because they also find that whilst agriculture was the most effective in poverty reduction in South Asia and Sub-Saharan Africa, poverty reduction in East Asia resulted more from the industrial sector and in Latin America from the services sector.

The study of 15 Asian countries by Habito (2009) was noted above. Habito analyses sectoral contribution to poverty in two stages, first by using pair-wise correlations and then by using multiple regression equations. The pair-wise correlations reveal only weak evidence of any systematic relationship between sectoral growth and poverty reduction, especially for agriculture and services. However, when using multiple regression equations, Habito (2009) finds that:

... the joint effect of agriculture-driven growth, good governance, and social expenditures by the government appear to well explain the variation in PEG across Asian countries. Contrary to the puzzling results obtained under pair-wise correlation analysis, agriculture’s role this time emerges as a significant determinant of the poverty elasticity of growth, in the expected direction. However, its impact on the PEG is still considerably weaker than those of governance and public expenditures on education and health, with governance having the strongest effect.

Similarly, when Southeast Asian countries are examined by Habito individually, manufacturing sector is found to have played a more important role as a driver of employment and poverty reduction, especially in recent years. This contradicts the finding of Hasan and Quibria (2004) noted above, suggesting that possibly the aggregation of large number of disparate countries into a single group may provide misleading information about the key drivers of poverty reduction. It is also possible that because Habito’s study covers the more recent period of 2000-2006 that was not covered by Hasan et al, Habito may have found a shift favouring the role of manufacturing in the Southeast Asian countries.

These contrasting observations underscore the fact that results of empirical studies can vary between countries and regions and depend crucially on the methodologies used.

In summary, the literature on the impact of sectoral composition of growth on poverty reduction suggests that while the composition of growth matters, different sectors seem to have played leading roles in poverty reduction in different countries and at different periods. It is also clear from this literature that aggregation of disparate regions and countries into larger groups might reduce the value of a study, especially if the focus of the study is on the incidence of poverty, which happens to be disproportionately concentrated in certain area (e.g., the BIMARU states in India and the western provinces in China). The lesson appears to be to favour a study that is able to examine the incidence of poverty and the sectoral contributions at a disaggregated level.

4.2 Neglect of Agriculture

⁵ De Janvry and Sadoulet (2010) also observe that growth in agriculture is nearly three times more poverty reducing than growth in manufacturing and nearly double that of growth in construction.

The neglect of agriculture since the 1980s is associated with a broader shift in economic strategy in many countries, which focused single-mindedly on reduction in budget deficits and resulted in a reduction in public investment, especially in agriculture. The failure of this strategy to deliver on economic and social outcomes was acknowledged by the IMF in following terms:

“The share of public investment in GDP, and especially the share of infrastructure investment, has declined during the last three decades in a number of countries, particularly in Latin America. Since the private sector has not increased infrastructure investment as hoped for, significant infrastructure gaps have emerged in several countries. These gaps may adversely affect the growth potential of the affected countries and limit targeted improvements in social indicators.” (International Monetary Fund 2004, p. 3)

Many studies have also analysed whether the rise in inequality (e.g., skilled-unskilled wages; urban rural incomes; changes in Gini coefficient) in many developing countries is a result of globalisation (e.g., trade liberalisation, FDI flows) and structural adjustment programmes. Goldberg and Pavcnik (2007) provide a comprehensive survey of this literature.

According to the UN Report *Rethinking Poverty* (2009), “The IMF/World Bank programmes and policy advice improved the efficiency of tax administration but have done little to help raise tax revenues and have tended to result in the reduction of direct taxation in favour of indirect taxation” (UN 2009, p.87). The UN Report (2009) argues for a shift in macroeconomic policies and development strategies towards more inclusive growth, and for enhancing the roles of fiscal policy and fiscal space in addressing poverty:

Macroeconomic policies should strive for both short-run stability and long-term development. Therefore, public investment for building up infrastructure, technological capabilities and human resources is critical for growth and productive employment generation and, hence, for poverty reduction. Public expenditure must also give priority to primary health care, universal basic education and human security - all of which are pro-poor. There is a substantial body of research on pro-poor budgets and the poverty alleviating effects of fiscal policy (Roy and Weeks 2004; McKinley 2004, 2008). Such an approach does not focus on government spending *per se*, but on whether government expenditure reduces poverty by disproportionately benefiting the poor relative to the non-poor (Osmani 2005), explicitly linking macroeconomic policy with poverty reduction and human development. (p. 91)

The UN report also notes that promotion of full and productive employment was proclaimed as one of the three pillars of social development by the Copenhagen World Summit for Social Development in 1995. In 2008, a new employment target was added under the Millennium Development Goal of halving poverty by 2015, with the objective of achieving “full and productive employment and decent work for all, including women and young people

The contribution of the agriculture sector in poverty reduction can be witnessed in the historical patterns of economic development and poverty reduction in African and Asian countries. In early years of independence, most of the African economies relied heavily on agriculture to propel economic growth and provide income and employment opportunities to

the masses. Agriculture in Sub-Saharan African countries employed a large percentage of labour force in the 1970s and 1980s. As a result, agriculture output increased, providing export earnings, mainly from primary products, supporting livelihood of millions of people and giving direct employment to more than half of the labour force in these countries (UNDP 2002). Similarly, agriculture provided significant employment in Asian countries and was a major source of income for most of the population in the 1960s to 1980s (Rosegrant and Hazell 2000). Thus, agricultural development growth in the past three decades has contributed to a rapid reduction in poverty.

Government policies play a crucial role in agricultural development, through many channels, including, *inter alia*, land reforms, irrigation systems, electrification of rural areas, roads and telecommunication systems, pricing policies and fiscal support for agricultural inputs, research and development and support for new technologies, access to credit and markets for agricultural produce. As noted by the OECD (2006), there has been a substantial decline in public sector support for agriculture and many producers have lost access to key inputs and services. While public sector provision of these services was not very efficient, it often provided the sole linkages for markets to poor rural producers. Today, such links are tenuous and complicated by much greater integration of the global economy. Smallholder producers now compete in markets that are much more demanding in terms of quality and food safety, and are more concentrated and integrated than in the past. OECD agricultural subsidies further distort many of these same markets.” (Executive Summary, p.2)

Economic reforms of the early 1990s in Africa did not promote commercial farming to enhance growth of agriculture and therefore there were no major improvement in the lives of the rural population. As a result of the poor policies and governance, the number of people living in extreme poverty increased in Africa as agricultural productivity declined. In many countries, although agricultural sector employs large number of people, lack of access to formal financial services have hindered large, medium and small scale commercial agricultural productivity. Therefore, rural productive sector and small agricultural enterprises suffer and are exposed to multitude of market failures. This may include biased development policies toward urban areas and lending policies that are biased against small-scale agricultural firms and favouring urban big business and commercial activities. For example, Cromwell *et al.* (2005) examine the treatment of rural productive sectors in Malawi, Nicaragua and Vietnam in addressing rural poverty reduction and delivering pro-poor growth. They observe that even though agriculture is a major contributor to growth (about 40%, 18% and 22% of GDP respectively) and accounts for a larger percentage of total work force employment (about 80%, 31% and 63% respectively), adequate treatment, particularly in terms of funding and resource allocation, have not been given to rural productive sectors. Their study concludes that significant investment and long-term policy commitment in rural agriculture is required in order to assist the poor and enhance rural productive sectors. A more focused rural development strategy is needed that should deliver increased reliability to power supply, provision of transportation and storage equipment, better access to roads, investment in skills development, better coordination of information and marketing of produce. Overall, reforms and capacity building initiatives are needed in the developing world to encourage markets to provide agricultural sector better access to finance and promote land use so that it can support rural poverty alleviation.

In Asia, in contrast, the green revolution in India and Pakistan during the 1970s and 1980s transformed traditional agriculture through the adoption of science-based technologies into a modern growth sector raising crop yields and household incomes and reducing poverty. This

period was followed, however, by falling productivity in this sector, poor performance of many agricultural development projects (World Bank 2007), the secular decline in the world price of food and other primary commodities, and the rising appeal of East Asia's export-led manufacturing growth miracle. Together, these factors pushed the agriculture sector into the low-priority sectors when the development strategies focussed on export-oriented manufacturing and services as the key drivers of national economic growth.

In India, too, the agricultural sector fell into neglect from the 1990s onwards. Implementation fatigue has already been noted above as a reason for delays in the implementation of important policy initiatives. A second aspect of the neglect of Indian agriculture is the lack of sufficient R&D and extension services. Technology is recognised by the Government of India as one of the prime movers of agricultural productivity, but India's expenditure on it remains below the average rate for the developing countries (0.6 % in India as opposed to 1% of Agriculture-GDP in the latter). Technology generation in India is dominated by the public sector, which continues to follow a supply-driven process that is not meeting the farmers' needs, creating a widening gap between what is available on the shelf and what is need on the ground.

The neglect of agriculture is partly the result of an assumption that agriculture is inherently inferior sector, whose share in the economy is certain to decline economies grow. While the falling shares of agricultural GDP and employment are statistical facts that can be observed in the developed and developing economies, these facts do not suggest that agriculture is inherently an inferior or losing sector. Christiaensen, Demery and Kuhl (2010) show that between 1960 and 2003, world's labour productivity in the agricultural sector increased at average annual rate of 2.4% as compared with 0.74% in the non-agricultural sector. In East Asia and the Pacific region, the comparable rates were 2.9% versus 2.7%; in Latin America and the Caribbean they were 2.3 versus 0.5%. Only in South Asia, despite the Green Revolution, productivity rate was lower for agriculture at 1.2% as against 2.2% for non-agriculture sector. This study finds an evolving relationship between agriculture and the rest of the economy. At low levels of development, growth in agriculture encourages growth in the rest of the economy. This relation grows into a mutually supportive one and matures into one where the rest of the economy drives agricultural growth by absorbing surplus labour from agriculture.

Cervantes-Godoy and Dewbre (2010) also confirm that agriculture has suffered from neglect after the Asian financial crisis and agricultural growth performance has been especially weak. They argue that agricultural policy in Indonesia appears to have been aimed at achieving self-sufficiency and price stability for the import competing commodities, particularly rice, sugar and palm oil. The government policy has been narrowly focused and has used input subsidies and export taxes to achieve these objectives. The authors argue that both of these policy instruments have been shown to be highly inefficient and inequitable means for supporting rural incomes (p.30).

4.3 Linkages between Agriculture and Poverty

The next step is to analyse the linkages between the patterns of agricultural growth in different countries and the poverty outcomes achieved, with particular reference to multidimensional measures of poverty. This will involve a range of country- and region-specific investigations as well as a detailed econometric study.

Employment is one such link, which remains the crucial channel for reducing poverty and the key to rapid poverty reduction lies in the ability of economic growth to generate jobs for the unskilled and uneducated, as most of the poor fall into those categories. For example, the UN report *Rethinking Poverty* also notes that in China “trends in poverty have also been closely linked with trends in employment” (UN 2009a, p. 40). It is further noted that notwithstanding China’s outstanding achievements in poverty reduction since 1978, new forms of poverty have arisen due to the deteriorating quality of growth in terms of its employment-generation potential and an increase in the degree of inequality.

Migration also works as an important channel by enabling people to move (within their countries and abroad) in search of employment. Internal migration is known to be very high in both China and India. As most of the new jobs in China have been created in the cities of the coastal region, internal migration is estimated to have increased from 26 million in 1980 to more than 187 million in 2007. In India, figures based on the 2001 Census indicate that internal migration increased from 232 million in 1991 to 330 million in 2001 (GOI, 2006). In both countries, remittances by internal migrants have become a major source of funds from the host locations to support families in the home locations (Deshingkar 2006).

Access to credit is another channel that contributes to reduction in poverty by helping to create employment by facilitating the acquisition of assets, including self-employment by the poor who may then be able to start their own business (as street hawkers, owners of pavement tea stalls or driving rickshaws, etc.).

Public investments in education and health are considered pro-poor, because of their impact on improved employability and productivity. Access to affordable healthcare also improves the quality of life and reduces the loss of labour due to disease and illness. In this section, we review the literature on employment generation and other means of poverty reduction through sectoral patterns of growth and public expenditure on infrastructure and social services.

Fan (2006) finds that agricultural research, education, and rural infrastructure are three most effective public spending items in promoting agricultural growth and poverty reduction. Because returns to public investments vary significantly across different types of investment and regions within the same country, investments targeting regions with the highest returns can yield much greater success in poverty reduction. For example, the number of poor lifted out of poverty in rural India per unit of investment in roads varies from 1.6 in irrigated areas, to 3.5 in high potential rainfed areas to 9.5 in low potential rainfed areas. Similarly, the number of poor lifted out of poverty in rural China per unit of investment in agricultural research varies from 2 in Coastal provinces to 4.4 in Central region to 33 in Western region. Fan notes that very few studies include all or most types of public investment when assessing their impact on growth and poverty reduction. Government spending on anti-poverty programs generally is found to have small impact on poverty reduction, “mainly due to inefficiency in its targeting and misuse of the funds” (Fan 2006, p. 9).

The role played by literacy was found to be particularly notable by Ravallion and Datt (2002), who reported that nearly two-thirds of the difference between the elasticity of the headcount index of poverty to non-farm output for Bihar (the state with lowest absolute elasticity) and Kerala was attributable to the latter’s substantially higher initial literacy rate. Trivedi (2002) finds that for the period 1965–1992, secondary school enrolment rates are positively and significantly related to economic growth across Indian states. Topalova (2008) also finds that growth becomes relatively more pro-poor as a larger share of the population

completes primary and especially secondary education and above. India's Eleventh Five Year Plan also envisions a stronger focus on secondary, higher and technical education to promote faster and more inclusiveness growth. The aim is to increase the supply of educated workers and to ease the current pressure on the skilled wage premium as demand for skilled labour rises, thereby leading to more evenly balanced pattern of growth. As suggested by Basu and Maertens (2009) for example, India needs "to promote basic literacy, which would enable its labour force to find employment outside of agriculture and especially in industry". Literacy in India also varies significantly across states, genders and rural-urban areas. For example, Kerala has more than 90 per cent literacy compared with Bihar at around 50 per cent. There are large differences in urban – rural literacy rates in different age groups. It is disturbing, however, to note that literacy rate actually declined between 2001 and 2004-05 particularly in male literacy in most states, including Kerala.

5. Conclusions

Several conclusions flow from the literature reviewed in the previous sections. First, poverty needs to be measured more broadly than just in terms of income or consumption. A country's ranking according to income poverty may not be the same in terms of MPI. Second, income poverty has been falling, and its geography has been changing, and major challenges remain. There is no corresponding time series data on multidimensional poverty to judge whether how and where it has fallen or risen in the past 20-30 years. Third, China, Indonesia and Vietnam have achieved impressive reductions in poverty, whereas India is now home to the largest number of poor. Poverty reduction in South Africa is slow and heavily dependent on social protection, rather than on generation of sustainable employment. Even in China, Indonesia and Vietnam, achieving further reductions in poverty is a major challenge.

Fourth, growth in agriculture has been a leading source poverty reduction, especially in the case of extreme poverty and in rural areas. While it is true that as economies grow, demand for non-agricultural products and services grows faster than for agricultural products, the full potential of agricultural sector has not yet been exploited in most developing countries. Indeed, it is a broadly shared view among the experts that agriculture has been neglected in the past three decades and investment in rural infrastructure has fallen, reducing the capacity of rural economies to generate incomes and employment. Agriculture contributes to poverty reduction because it provides employment to the poor, who have also generally low skills and education. Growth in agriculture also contributes to greater supply of food-stuffs and lower food prices, and benefits both rural and urban poor.

Fifth, studies that are conducted at an aggregated level are often unable to unmask the role played by certain sectors or policies as clearly as a disaggregated study should be able to do. The impact of many of the location-specific diversities is overwhelmed by the process of aggregation. For example, it should be recalled that Habito (2009) was able to find that it was manufacturing sector, not agriculture, which played a more important role in poverty reduction in the Southeast Asian countries after he examined these countries separately from the larger South Asian region. Earlier, Hasan and Quibria (2004), who had examined these countries as part of the larger South Asian region had found that the leading driver was agricultural growth. There is need, therefore, to conduct the research in this study at a sufficiently disaggregated level, preferably at the state or provincial level, so as to get more meaningful results.

The sixth conclusion is that analysing the impact of a sector in isolation, instead of simultaneously with other sectors and broader economy wide policies, may not be able to capture the full effect of forward and backward linkages among sectors and policies and hence yield misleading results. Here again, the paper by Habito (2009) provides a good example. When using pair-wise correlations, Habito found no significant contribution of agriculture or industry to poverty reduction. This result changed, however, when the sectors are analysed by simultaneous equation regressions together with social expenditures and governance indicators.⁶

The seventh conclusion is that there is need to increase the level and effectiveness of public investment on infrastructure and expenditures on education, health care, other social services and safety nets for vulnerable groups. When considered together with sectoral growth and employment generation policies, the impact of public expenditures cannot be ignored. Public investment in agriculture and public support for farmers has fallen around the world despite the demonstrated high rates of return and the reduction in poverty that come with such investments.

The eighth conclusion is that as stressed by the OECD (2006) report on pro-poor growth, capacity of public institutions should be strengthened so that an appropriate blend of policies, regulatory frameworks and investments can be developed to re-launch the agricultural sector. Traditional agricultural policies have concentrated on increasing agricultural production, neglecting investment in post-harvest enterprises and non-agricultural assets for more diversified rural economy. In the absence of diversified sources of income, rural communities remain vulnerable to a variety of shocks. Pro-poor policies should remove the barriers that increase these vulnerabilities and risks.

Finally, the ninth conclusion is that agriculture is not a homogeneous sector and does not lend itself to uniform policies and approaches. Policies for agricultural growth and rejuvenation need to be framed in recognition of the diversity of this sector, which includes several distinct sub-sectors that require different policy responses. Thus, there is the large-scale commercial agriculture, traditional agriculture that is not internationally competitive, subsistence agriculture, landless rural households and micro-enterprises, and chronically poor rural households many of whom are no longer economically active.

6. Some Outstanding Issues

Four outstanding issues warrant special mention. First, while the neglect of agriculture in development strategies of most countries has been noted, the benefits of higher public investment in agriculture for the poor remain to be analysed and quantified. It is not clear, for example, what type of public investment provides the maximum benefits to the poor. It is often argued that higher levels of public investment should be a part of a broader strategy that includes not only new investment in transport and communication, but also in agricultural R&D and new technologies. The downside of these arguments may be that the lumping of so many things into the list may also make the governments of the developing countries reluctant to undertake such reforms, simply because of the high cost of the package. If it were possible to show on the basis of some empirical studies that relatively small packages of new investment targeted on one or two aspects of rural economy can deliver large benefits to the poor, the chances of such investment getting on the budgetary strategies may improve.

⁶ Other examples are provided by Fran (2006, p.9).

Secondly, there is a need for a better understanding of the mechanisms for encouraging agriculture income stabilization to reduce ‘transient’ or short-term poverty. In particular, interactions among institutions, targeted expenditures and different types of assets possessed by the rural poor need to be understood in order to guide more effective intervention(s) in the future. A mixture of case studies and empirical analyses based on the MPI approach and the use of disaggregated data from diverse group of countries would facilitate a deeper understanding of linkages between agriculture and poverty and how to achieve rural income diversification.

Thirdly, the impact of urbanisation on agriculture and on poverty reduction needs to be investigated in greater detail. Not only in China and India, but also in many other developing countries, the feverish pace of urbanisation is affecting agriculture in many ways⁷, including the conversion of farm land into non-farm land, job creation in the construction industry, additional demand for high value agricultural products, such as fruits and vegetables, meat and eggs, milk and other dairy products, and more recently for agro-fuels. Similarly, urbanisation is also creating new opportunities for unskilled workers not only in industry, but also in services, including domestic services. While it is generally acknowledged that these effects are likely to be beneficial for the agriculture sector and for unskilled workers, less is known about how these effects relate to the size of urban centres or distances from rural areas, and how these effects translate into poverty reduction. For example, it is not clear whether growth in mega cities or in medium sized cities or small towns is relatively more beneficial for the rural poor. In the absence of sufficient knowledge about these effects, government strategies for urbanisation remain de-coupled from the strategies for poverty reduction. As most of the literature follows the sectoral division of the economy into agriculture, industry and services, the impact of urban centres on poverty reduction and on rural economic growth has not been brought under sharper focus. There are exceptions, of course, like the study by Suryahadi *et al* (2009), which suggests that in Indonesia, urban services have contributed the most to rural poverty reduction in the period following the East Asian financial crisis.

Finally, the composition of the multidimensional poverty index, which needs to be examined more closely⁸. As summarised in Table 2, Alkire and Seth (2010) use eleven indicators and weights distributed equally across the education, health and standard of living dimensions and classify a household as multi-dimensionally poor if the weights on the indicators for which it is deprived sum to 30% or more. The MPI is created as the product of the head count ratio (the proportion of households that are poor) and the average deprivation share among the poor (the average fraction of indicators in which the poor are deprived). Thus the MPI reflects both the number of households who are poor and the average intensity of that poverty. It also has the advantage that the overall MPI level can be decomposed into measures for separate population sub-groups. Some of these indicators, such as school enrolments, may not apply to all households surveyed, as not all household have school-age children. It would be desirable therefore to ensure that only those indicators are selected that apply to all households in the surveys.

⁷ It is estimated in the OECD-FAO (2006), *Agricultural Outlook 2004-2015*, that by 2015, well over half of the world’s population is expected to dwell in cities, and three-quarters of all urban inhabitants are foreseen to be located in developing countries.

⁸ We are grateful to Dr Yu Jiantuo for drawing attention to this point.

Table 2: Indicators, cut-offs and weights of the MPI

Indicator	Deprived <i>if</i> ...	Relative Weight
Years of schooling	No household member has completed five years of schooling.	16.7%
Child enrolment	Any school-aged child is not attending school in years 1 to 8.	16.7%
Mortality	Any child has died in the family.	16.7%
Nutrition	Any adult or child is malnourished.	16.7%
Electricity	The household has no electricity.	5.6%
Sanitation	The household's sanitation facility is not improved, or is shared	5.6%
Water	No ready access to clean drinking water or clean water.	5.6%
Floor	The household has dirt, sand or dung floor.	5.6%
Cooking fuel	The household cooks with dung, wood or charcoal.	5.6%
Assets	Very limited access to household and transport durable goods.	5.6%

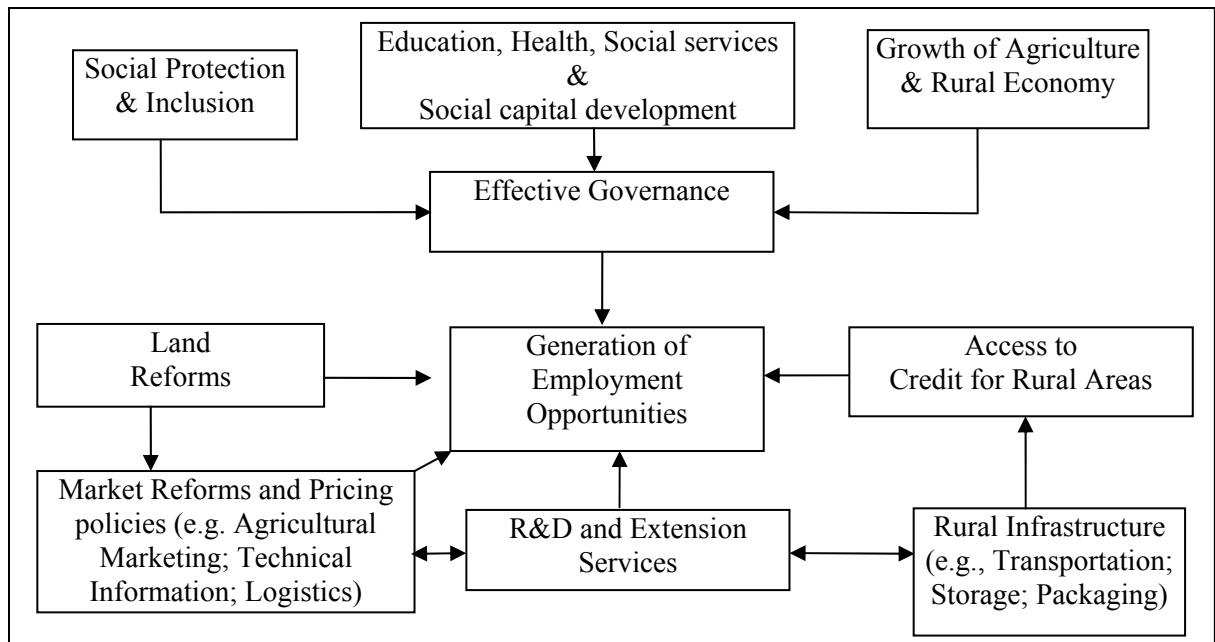
Source: Alkire and Santos (2010).

7. The Way Forward: A Co-ordinated Strategy for Inclusive Growth

It seems clear from the above discussion that growth in agriculture and rural economy can still play a major role in poverty reduction in the developing countries. The mission of a strategy for poverty reduction and inclusive growth must be two-fold: to address the urgent need for social protection as well as the longer-term needs for developing new capabilities and employment opportunities for the poor population. The role of good governance lies at the core of such a strategy, because the poor people have neither the assets nor the necessary skills required for organisation. The governments at all levels need to take the lead in providing public expenditure and investment, but also facilitate involvement of the private sector enterprises and civil society in assisting the poor. The key elements of such a co-ordinated strategy are summarised in Figure 1.

The main messages of Figure 1 are that generation of employment opportunities, social protection and development of social capital are crucial for sustainable reduction in poverty. Development of social capital will occur over time and will involve development of social services, particularly education and health services. A package of targeted social protection is also essential for providing immediate relief to the poor while the development of social capital is under way. The role of market reforms, access to finance and infrastructure for the development of agriculture and rural economy is also important. Obviously, these elements require strong support of good governance to make sure that corruption and rent seeking behaviour do not allow benefits of growth to be siphoned off by vested interests. Effective governmental interventions at national and local level are crucial to minimise the leakages resulting from sloppy implementation or bureaucratic corruption.

Figure 1: Agricultural Growth for Poverty Reduction: Key Elements of a Strategy



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