Chapter 12

Rural Transformation Index: Measuring Rural–Urban Disparities

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Introduction

Since the 1950s, the notion of development has framed our thinking about issues of human well-being and happiness. In this period, several developing countries particularly in the Asia/Pacific region have witnessed unprecedented development. Some countries in this region have modernised at a steady pace. The per capita incomes of a significant population, for example, in Republic of Korea, Singapore, Malaysia, and Thailand, now compare with incomes in the developed world.

Despite these phenomenal developments, it will not be unfair to imagine that we also live in a world with remarkable deprivation, destitution, oppression, increasing inequalities, loss of livelihoods, and new forms of exploitation. In addition to the persistence of poverty and unfulfilled basic and elementary needs, inequality across, between, and within countries appears to be growing. The per cent of population at risk of multidimensional poverty ranges from as low as 0.8% in the Russian Federation to as high as 23.2% in Kenya, and its intensity ranges between 35.3% in the United Arab Emirates to 57.3% in Senegal. The share of the poorest 20% in national consumption decreased dramatically in all the major regions of the world with the exception of the Arab Region where it remained constant. More than 1.4 billion people live in poverty so extreme that they can barely survive, and around 25,000 people die from hunger each day while a new billionaire is created every second day (World Bank 2010).

Overcoming these problems and issues is a part of the exercise of development. As the UNESCO Commission on Culture and Development (UNESCO 1995: pp. 19–21) points out, ‘*In spite of four decades of development efforts, poverty*

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remains high. Although the proportion of poor people has diminished significantly in all continents except Africa, absolute numbers have increased'. Nearly 40% (2.6 billion) of the world total population (6.46 billion) live in abject poverty (less than US\$2.0 a day). Over a billion people have been largely bypassed by the globalisation process. Involuntary poverty and exclusion are unmitigated evils. All development efforts aim at eradicating them and enabling all people to develop their full potential. Yet, all too often in the process of development, it is the poor who shoulder the heaviest burden (Javier Perez de Cuellar 1996: pp. 7–11). That our children, youth, and adults in rural areas bear the major burden of poverty, affecting every aspect of their physical, social, economic, and emotional development, requires no further evidence but also immediate assertive actions.

This chapter suggests a methodological framework for the construction of a *rural transformation index* so as to assess rural–urban differentials and gaps in the overall well-being of people in these areas. The chapter is to investigate rural inequalities and development policies in developing countries. The aims of this chapter are (1) to establish indicators systems that can measure rural transformation (RT) in developing countries and (2) to discuss some of the major implications for achieving coordinated urban–rural development in the future.

Rural People: Some Facts

Rural areas are usually referred to as small, inward-looking, and idyllic communities held together by kinship relations and supporting basic agricultural occupations. The characteristic features that differentiate rural from urban areas include size, particularly areas inhabited by the people, low population density, homogeneity, presence of few social classes, low standard of living, and presence of few/no social amenities such as electricity, pipe-borne water, low social mobility, and mainly agrarian in nature—producing the bulk of food consumed in urban areas and the attendant drifting of young able-men to cities in order to benefit from the urban resources and modern life.

People living in rural areas are characterised by low capital investment, low savings, and low production. The poverty level is usually higher among women than men. Women continue to struggle with dual responsibilities of economic production and domestic labour, while most of them are confronted by poverty, illiteracy, high health risks, inadequate access to productive resources, and lack of credit/market access. Land ownership in rural areas determines the asset for production as well as access to credit and agricultural support services and the social power to negotiate for resources and membership in decision-making agencies. Paradoxically, most developing countries still lack adequate provision for women to hold land rights independently of their husbands or male relatives. Statutory laws often do not ensure independent land rights for women. Also, technological development and extension programmes have not been responsive to household drudgery associated with different production activities undertaken by women. Persisting gender biases, deep-seated community dynamics, and time constraints prevent

women from actively participating in programmes intended to bring about social capital benefits and female empowerment.

Several attempts and approaches have been adopted to bring about rural development. Most of these are top-down approaches which impact little on rural development and most especially on the womenfolk. Usually, community development programmes should aim at creating awareness of rural possibilities; providing information on resources, inputs, and infrastructure; deploying technical assistance; skills acquisition and development; increasing literacy levels; improving productivity and productive systems; and adapting appropriate technology in agriculture; sensitising potential volunteers and donors as well as focusing on peoples' felt needs and basic amenities such as the provision of good roads, electricity, health clinics, markets, school buildings, and farm settlements, among others. An attempt to achieve these laudable goals requires the intervention of good leadership. When good leadership is provided, the people would participate voluntarily in the accomplishment of stated objectives.

A careful study reveals that rural concerns have not been given the predominance they deserve, especially in the cases of South Asia and sub-Saharan Africa, where in demographic terms, national educational problems are largely rural problems. The analysis presented herein highlights the rural scenario and throw up for debate, for introspection, and for the formulation of viable strategies; the raft of challenges that plague the balanced growth of educational facilities; and the delivery of quality education systems.

The analysis serves to highlight the major problem areas and examine in some detail the many constituents of each of them and how the construction of a rural transformation index as a tool to assess and examine extreme rural–urban discrepancies in both socio-economic development and geographical and biophysical conditions. The analysis is replete with charts, graphs, and tables that provide a visual and pictorial representation of what is being stated in the main body of this chapter. There are also examples selected from different research studies which show regions of the world that depict the poignancy of the ground situation and serve to underscore the harsh realities of the rural condition.

Mounting Demographic Pressure

The population of the developing world is still more rural than urban: some 3.1 billion people, or 55% of the total population, live in rural areas. However, between 2020 and 2025, the total rural population will peak and then start to decline, and the developing world's urban population will overtake its rural population. In Latin America and the Caribbean, and in East and Southeast, the number of rural people is already in decline. Elsewhere, the growth of rural populations is slowing. Numbers will start to decline around 2025 in the Middle East and North Africa and in South and Central Asia and around 2045 in sub-Saharan Africa (IFAD 2011). Thus, the population in developing regions will remain predominantly rural until 2020. After

Fig. 12.1 Total and rural population—1999 and 2010

Table 12.1 World^a population 1999–2010

Regions	Population (Million)		Rural population (% in total)	
	Total			
	1999	2010	1999	2010
Arab States	271.6	347.6	29.9	30.9
Southwest Asia	1,434.6	1,704.2	72.8	67.2
Central and Eastern Europe	401.6	400.6	36.7	37.7
Central Asia	73.3	80.1	50.1	51.5
East Asia and the Pacific	2,006.3	2,176.6	46.7	47.4
Latin America and the Caribbean	508.6	584.8	36.1	38.5
North America and Western Europe	704.2	763.3	22.5	21.3
Sub-Saharan Africa	614.8	807.2	65.8	60.8
World	6,015.0	6,908.7	53.1	50.1

Source: *UNDP Human Development Report* (2011). Socio-economic Indicators Table 1

^aNote: The total of regions may not add to the world total as countries with half a million or less population are not included in the regional totals

that, the size of the rural population is expected to decline due to slower population growth and rapid urbanisation in most countries. The share of the population living in rural areas is declining on all continents (Fig. 12.1), although it is projected to remain above 50% in South and Central Asia and sub-Saharan Africa until 2030 (UN 2008) (Table 12.1).

Figure 12.1 shows that the world population increased from 6 billion in 1999 to 6.9 billion in 2010—the highest increase (269.6 million) being recorded by the Southwest Asian region followed by East Asia and the Pacific (170.3 million). Central and Eastern Europe is the only region recording a decline (one million) in total population reflecting sustained reductions in fertility in this region during the period under consideration.

Fig. 12.2 Rural population and fertility per woman

Figure 12.1b represents the proportion of rural population in the total population during 1999–2010. Among the developing regions, Southwest Asia and sub-Saharan Africa are the only regions with mounting rural population. Rural population in these two regions accounts for nearly one-third of total population. Rural population has also grown in the North American and Western European region. However, this increase can be associated with recent efforts in the European Union (EU) towards changes in the concept of rural areas. It is also explained by the prevalence of the current financial crisis; as a result, most migrant workers in European Union are returning back to rural areas (OECD 2008).

Figure 12.2 shows the relationship between rural population and women's fertility. It highlights that high rural population proportions are positively and significantly related with each other. Rural areas are generally characterised with high fertility rates which in turn have historically been strongly correlated with poverty, high childhood mortality rates, low status and educational levels of women, deficiencies in reproductive health services, and inadequate availability and acceptance of contraceptives. Falling fertility rates and the demographic transition are generally associated with improved standards of living, such as increased per capita incomes, increased life expectancy, lowered infant mortality, increased adult literacy, and higher rates of female education and employment.

Even with improved economic conditions, nations, regions, and societies will experience different demographic patterns due to varying cultural influences. The value placed upon large families (especially among underprivileged rural populations in less developed countries who benefit least from the process of development), the assurance of security for the elderly, the ability of women to control reproduction, and the status and rights of women within families and within societies are significant cultural factors affecting family size and the demand for family planning services.

Fig. 12.3 Rural population and infant mortality

Even with a demand for family planning services, the adequate availability of and access to family planning and other reproductive health services are essential in facilitating slowing of the population growth rate. Also, other factors include access to education and the ability of women to determine their own economic security influence their reproductive decisions.

The relationship between infant mortality and size of rural population is shown in Fig. 12.3. The figure clearly shows a significant direct relation between the two. That is, developing countries with high infant mortality rates are those having relatively high rural population.

The World Health Organization (WHO) estimates that in 2005 over 500,000 women died from pregnancy- and birth-related causes. A woman in a developing country is 97 times more likely to die as a result of pregnancy than a woman in a developed country. The majority of these deaths occur during and immediately following birth: 25% are caused by severe bleeding, 15% by infection, 12% by eclampsia (a seizure disorder), and 8% by obstructed labour. The remaining deaths are due to unsafe abortion (13%), other direct causes (8%), and indirect causes such as HIV and malaria which may be aggravated by pregnancy. The technologies needed to prevent deaths from most of these causes exist (WHO 2009).

Figure 12.4 highlights the relationship between rural population and the average expectancy of life. The graph clearly shows a negative relationship between them.

Population ageing is poised to become a major issue in developing countries, which are projected to age swiftly in the first half of the twenty-first century. The proportion of older persons is expected to rise from 8 to 19% by 2050, while that of children will fall from 33 to 22%. This demographic shift presents a major resource challenge. Though developed countries have been able to age gradually, they face challenges resulting from the relationship between ageing and unemployment and sustainability of pension systems, while developing countries face the challenge of simultaneous development and population ageing (UN/DESA 2002).

Fig. 12.4 Rural population and life expectancy at birth

While today the overwhelming proportion of older persons in developed countries live in areas classified as urban, the majority of older persons in developing countries live in rural areas. Demographic projections suggest that, by 2025, 82% of the population of developed countries will live in urban areas, while less than half of the population of developing countries will live there. In developing countries, the proportion of older persons in rural areas is higher than in urban areas. Although further study is needed on the relationship between ageing and urbanisation, the trends suggest that in the future in rural areas of many developing countries, there will be a larger population of older persons (UN/DESA 2002).

Significant differences also exist between developed and developing countries in terms of the kinds of households in which older persons live. In developing countries, a large proportion of older persons live in multigenerational households. These differences imply that policy actions will be different in developing and developed countries.

Rural Poverty and Deprivation

The Human Development Index (HDI) decreases with every increase in rural population in developing countries as highlighted in Fig. 12.5. However, it is difficult to demonstrate precisely the magnitude of rural poverty in terms of HDI as it contains several indicators and gives the measurement of development in relation to those indicators.

The Rural Poverty Report 2011 states that ‘today a little less than 35% of the total rural population of developing countries is classified as extremely poor, down from around 54% in 1988; while the corresponding percentage for the US\$2/day

Fig. 12.5 Rural population and Human Development Index

Fig. 12.6 Rural share of total poverty (rural people as percentage of those living on less than US\$1.25/day) (Source: Rural Poverty Report, 2011)

poverty line is now just above 60%, down from over 80% in 1988 (Figs. 12.6, 12.7 and 12.8). This is mainly due to a massive reduction in rural poverty in East Asia, where today the incidence of rural poverty is around 15% for the US\$1.25/day line and 35% for the US\$2/day line.

Rural poverty has declined more slowly in South Asia, where the incidence is still more than 45% for extreme poverty and over 80% for US\$2/day poverty, and in sub-Saharan Africa, where more than 60% of the rural population lives on less than US\$1.25 a day, and almost 90% lives on less than US\$2/day. In Latin America and the Caribbean, and the Middle East and North Africa the incidence of extreme rural

Fig. 12.7 Incidence of extreme rural poverty (percentage of rural people living on less than US\$1.25/day) (Source: Rural Poverty Report 2011)

Fig. 12.8 Rural people living in extreme poverty (millions of rural people living on less than US\$1.25/day) (Source: Rural Poverty Report 2011)

poverty is less than 10 and 5% respectively, with declines in both regions over the past decade (even though one-fifth of the rural population in Latin America and the Caribbean, and one in eight in the Middle East and North Africa, live on less than US\$2/day). Within each region, some countries and subregions performed better than others over the past two decades. In sub-Saharan Africa, for instance, rural poverty declined in much of East and West Africa but increased in Middle Africa; in North Africa rural poverty declined, while it increased in the conflict-affected Middle East (IFAD 2011: pp. 47–48).

Fig. 12.9 Population of primary school age by sex, area of residence, and wealth quintile, India 2006 (Source: India Demographic and Health Survey 2005–2006)

Despite massive progress in reducing poverty in some parts of the world over the past couple of decades—notably in East Asia—there are still about 1.4 billion people living on less than US\$1.25 a day and close to 1 billion people suffering from hunger. At least 70% of the world’s very poor people are rural, and a large proportion of the poor and hungry are children and young people (IFAD 2011). Neither of these facts is likely to change in the immediate future, despite widespread urbanisation and demographic changes in all regions. Southwest Asia, with the greatest number of poor rural people, and sub-Saharan Africa, with the highest incidence of rural poverty, are the regions worst affected by poverty and hunger. Levels of poverty vary considerably, however, not just across regions and countries but also within countries.

As mentioned above, nearly one-sixth of the world total population is living in abject poverty and suffering from hunger and illiteracy—majority of them finding their abode in the sub-Saharan African and the Asia/Pacific regions. Within the Millennium Development Goals (MDGs) framework, education and training policies play a crucial role in reducing poverty and ensuring an equitable distribution of economic resources. The UNESCO Education for All Global Monitoring Report 2011 (p.79) estimates worldwide some 72 million children of primary school age are still out of school and over four out of five of them live in rural areas.

A comparison of the composition of the total population of primary school age and the population of children out of school in India, for instance, shows which group of children are disproportionately more likely to miss out on education. Figure 12.9 shows the composition of the Indian population aged 6–10 years. 52% of all children in this age group are boys, and forty-eight percent are girls. About one-quarter of all children of primary school age live in urban areas and the remaining three-quarters in rural areas (Hueber 2007).

Wealth quintiles are constructed by ranking the entire population of India, regardless of age, according to household wealth and dividing them into five equally sized groups with 20% each of the total population. As Fig. 12.10 shows, households from poorer quintiles are more likely to have children than households from richer quintiles. Overall, 26% of all children between 6 and 10 years live in the bottom quintile and a further 23% in the second quintile.

Fig. 12.10 Children of primary school age out of school by sex, area of residence, and wealth quintile, India 2006 (Source: India Demographic and Health Survey 2005–2006)

Figure 12.10 shows the composition of the group of children aged 6–10 years that are out of school in India. Although girls only account for 48% of the total number of children in this age group, they make up 54% of the children out of school. Rural children are disproportionately more likely to be out of school than urban children. Most strikingly, children from the poorest quintile make up almost half of all children out of school. 48%—10 million of the 21 million children out of school—live in the poorest quintile. Seventy-four percent of all children out of school live in the two poorest quintiles.

These numbers emphasise the close link between poverty and school attendance in India. School attendance rates have increased among the poorest households between 2000 and 2006, but the increase was not large enough to keep pace with population growth. Unless India places more emphasis on school attendance among the poor, the country will miss the EFA of universal primary education by 2015.

Who are these victims of development? Indigenous people, women, those living in remote and mountainous regions, slum dwellers living in abysmal living conditions within glitzy metros, young girls and boys lured away from their homes by the promise of jobs, and peasants displaced from their land to make away for large government projects or private concerns, the list is long. Clearly, economic change and developmental priorities have come in conflict with people's right to survive.

Rural areas suffer from outmigration of both young and highly skilled workers, leaving an ageing population, women, and strained public services (including public education). Most areas have difficulty providing the capital and infrastructure to encourage and sustain new rural entrepreneurs. As a result, many rural areas are searching for local features that can spur new growth, such as scenic amenities, environmental virtues, or unique products that reflect the cultural heritage of a particular region. Expanding agricultural opportunities will be important through value-added processing and new specialised crops. Better educated residents and improved rural economic networks are essential to the development of new rural businesses.

Rural populations in the developing countries today have attained high levels of education as compared to their participation rates in 2000, yet rural education still lags urban levels, and large regional and racial differences persist. Rural schools still face a host of challenges, from poverty, under-financing, and isolation to a decreasing pool of experienced teachers and high turnover among teachers and administrators. Many rural schools have successfully met these challenges and are well prepared for the future. Others have failed to meet these challenges and are poorly positioned for the future. In addition, some rural communities are reticent about reform efforts that are not locally initiated, perhaps because of ill-conceived reform efforts of the past. As a result, there is considerable concern among policy makers and educators about the future success of rural schools.

Although rural schools constitute a significant portion of public elementary and secondary education in the developing countries, relatively little is known about them, in part because rural education issues receive little attention from policy makers and scholars. This lack of knowledge puts rural communities and schools at a disadvantage because policy makers often lack the information they need to develop sound policies to assist rural schools.

Contrary to these issues and challenges, the skill requirements of rural jobs, however, continue to rise along with education levels. Although less educated rural adults fared well in the 1990s all over the globe due to positive economic trends, their prospects however are uncertain. Many rural jobs historically held by workers with limited education have been lost to changes in (a) production technology, (b) overseas competition, and (c) changing consumer demand. Prospective employers are increasingly attracted to areas offering a concentration of well-educated and skilled workers, just as better educated youth and adults are still drawn to places—often in cities—that offer better jobs with higher salaries. Although investments in education are not a panacea for places struggling to attract jobs and residents, they can be an important part of a broader economic development strategy.

On average, rural students perform about as well as urban students on national standardised tests. Specialised and advanced course offerings in rural schools are more limited, on average, than in urban schools due to the shortage of (1) appropriately trained teachers and (2) financial constraints. But rural schools often experience closer ties among teachers, parents, and students, fostering a supportive academic environment. It has been observed that educational attainment also varies sharply by race and ethnicity.

Evidence also reveals that education is increasingly rewarded in rural labour markets. The labour market rewards to a college degree have greatly increased in the past 20 years. Rural undergraduates now make more than rural high school dropouts and have far lower unemployment rates. Undergraduates, however, still earn much more in cities, making it harder for rural communities to build their human capital base (World Bank 2010).

Just as urban and rural education levels differ, there is also great variation within and inside rural areas. Low education levels pose a challenge for many rural areas seeking economic development. Raising education levels—and the quality of that education—is essential to improving the economic life of rural communities and

Fig. 12.11 Patterns of literacy are related to household's location and wealth (UNESCO 2010)

the well-being of the rural population. The outmigration of rural youth to places with better job opportunities limits the effects of schooling investments on local communities.

As regards the state of nonformal education in rural areas, almost all the developing countries have made concerted efforts in this direction. Some developing countries (People's Republic of China, Thailand, the Philippines, India, Brazil, Morocco, and Mauritania) have made remarkable progress in planning and implementing nonformal education programmes for addressing rural poverty issues and challenges. However, in a majority of the Arab States (UNESCO 2008), current nonformal education programmes (literacy and adult education) looked upon essentially as 'educational' programmes that address poverty concerns, if at all, only marginally. There are deep-rooted inadequacies in the design and implementation of these programmes. The programme content lacks 'teeth' to address poverty eradication concerns with force. They do not cover the multidimensional needs of the poor and are generally presented as bits of information. The focus is on knowledge, and there is little effort on skill or attitude development. Literacy programmes are organised as single package interventions to impart literacy and numeracy skills only. Traditional rote learning with no opportunity for learners to interact, to analyse information to understand their poverty situation, or to develop decision-making skills characterises the typical adult education learning setting. At best, the empowerment issue is treated marginally and only in the periphery of curricular and pedagogic considerations of most ongoing literacy programmes in these countries. This is clearly shown in Fig. 12.11.

An essential change about which all are agreed is that literacy and numeracy skills alone are quite inadequate and should be accompanied by the acquisition of certain attitudes and knowledge and skills relating not only to vocations and income generation but also to management and social, political, and cultural life. This conception is more than what is implied by functional literacy which countries have been implementing. Functional literacy puts the emphasis on the acquisition of primarily economically and socially useful skills. The need to develop attitudes and values was not at the forefront.

It is felt that attitudes and values are important and critical to the poor in their attempts to better their condition. Even the attempt may not be made without some conviction of their inherent worth and ability and potential. They need to understand their situation and be convinced that it could be changed for better (UNESCO-PROAP 1998). They need to be self-dependent and not other-dependent. The teaching–learning approach should support the development of these desirable values and attitudes. Since the poverty groups tend to be less confident in their abilities and less expressive, the learning approach should encourage them to express their point of view in a mutual atmosphere so that they can be gradually more expressive. No matter how they are, they should also be treated with respect to self-dignity. Values and attitudes need to be supported with thinking and analytical skills (Suvit 1997).

The emphasis on practical skills and not just mere knowledge is from the perspective that the poor may take some meaningful action immediately, under their present conditions without waiting for the day when the situation is expected to improve. If their soil is poor, what may be done immediately about it? What other crops may be grown? Such questions as they have not only need answers but the development of the necessary skills along with the supply of other resources which may be needed. Among the attitudes and skills which need to be further supported, developed, and refined (the poor already have them) are those relating to cooperative action. Management and entrepreneurial skills also need to be developed. This is particularly important if the poor are to take the initiative (UNESCO-PROAP 1998).

The evidence on record demonstrates a pattern of discrimination against and neglect of educational provisions and their quality in rural localities in general and in the Asia-Pacific and sub-Saharan African countries in particular. Far too many children in rural areas of these two major regions are denied basic school facilities including a permanent building, teaching personnel, and learning materials. A near-universal tendency is to overload curricula and syllabi, reflecting an academic view of standards and lack of appreciation of rural conditions. The centralised control of curriculum development and state-produced textbooks—the norms in most countries—fails to recognise the diversity of rural circumstances. Also, the general weakness in governance adversely affects national education systems and harms educational development in rural areas more severely.

On the basis of the above, it can fairly be deduced that (a) consolidation may not be a solution, (b) effective solutions are multidimensional, (c) one-size-fits-all policies are inappropriate, and (d) better understanding of rural issues is needed.

The Origin of Education for Rural Transformation (ERT)

In 2001, the report published by the UNESCO International Research and Training Centre for Rural Education (INRULED) titled '*Education for Rural Transformation: Towards a Policy Framework*' made a plea for rethinking education in rural areas and rural people with a focus on 'rural transformation'.

The term rural transformation—rather than rural development, rural change, or rural education—was used advisedly to convey a vision of proactive and positive process of change and development of rural communities in the context of national and global changes in which education is seen as a key instrument for shaping and fulfilling the goal of rural transformation. However, breakdown of numbers for rural areas on several socio-economic indicators of transformation was often not reported—a sign of neglect of the problem. Urban–rural disparity in educational investments and in the quality of service delivery was widespread *and* persistent (INRULED 2001).

Stockholm Education for Rural Transformation (ERT) Symposium, 2010

In November 2010, the International Symposium on ERT, with the theme of national, international, and comparative perspectives and lessons in ERT, was hosted by University of Stockholm. The general conclusion from Stockholm was clear that in the discourse on policy and strategy and, more importantly, in action, we did not move very much from where we were in 2001. Meanwhile, the challenges became more acute and urgent.

International Fund for Agricultural Development (IFFAD) Rural Poverty Report 2011

The basic premise of this report is that poor rural people find it very difficult to manage the multiple risks they face arising from their personal and household circumstances, the natural and climatic hazards, and economic and development factors at national

and global levels. The rural poor, the majority in most countries, therefore, cannot seize the opportunities in agriculture and the nonfarm economy alike.

Participation in the rural nonfarm economy—both wage employment and non-farm self-employment—is an important route out of poverty for growing numbers of rural people but has remained neglected by policy makers in many countries.

The report argues for a more systemic approach to growth for rural poverty reduction and ‘a new approach to agricultural intensification that is both market-oriented and sustainable’. It also suggests for the construction of a rural transformation index (RTI) to highlight the progress made overtime by rural areas in alleviating poverty and improving the socio-economic condition of rural people. The methodology for constructing the RTI is discussed below.

What Now?

As mentioned earlier, the 2001 report urged UNESCO and INRULED to give priority and be active in building a grand alliance for ERT. It is now necessary to consider critically and objectively how far this has happened and what should be done.

UNESCO–INRULED and their national and international partners need to develop a research, advocacy, and action agenda to build the coalition and promote practices in ERT. Exploration in constructing a ‘rural transformation index (RTI)’ and its analysis has to be undertaken for understanding analytically the rural–urban disparities and in turn for improving the social and economic development prospects and quality of life of rural people in the context of the changing global scenario. On the basis of this index, a policy framework for programme focus and strategies for developing countries need to be developed and refined.

Construction of a Rural Transformation Index

Why do we need a rural transformation index? What the specific aims, and thus the indicators, of rural transformation should be. First, the RTI should comprise all those variables that present relevant statistical information which support, illustrate, elaborate, and explain as much as possible the key issues and challenges faced by the rural communities in both developed and developing countries. In respect of this aim, the simplest RTI will comprise a statistical analysis listing the countries by proportion of their rural population and showing their ranking on various relevant indicators. However, one of the serious limitations of this index would be its inability to explain and highlight regional discrepancies in both socio-economic development and geographical and biophysical conditions in any given country.

Second, the RTI should try to indicate distinctly the trends, or change the policy makers would like to see, in relevant indicators to show progress or lack of progress in respect of rural transformation, if relevant, reliable disaggregated data by rural–urban breakdown become available on several determinants of transformation for a sufficient number of countries from all developing regions. This can constitute a rural transformation index (RTI).

Among other things, the key message here is the need to move away from the present lopsided growth and development, with majority of the people still in rural areas, employed in agriculture and related informal sector activities, but receiving (and contributing to) a disproportionately low share of GNP and also are characterised by low values in various development indicators.

It should be emphasised that the rural transformation indicators have to be about rural people and rural areas but seen within a national perspective. It can be justifiably argued that there has to be a more balanced growth and development, marked by reduction of three kinds of gaps to overcome the present disparity between the situation of the rural people and the rest in each country. These gaps to be narrowed and eliminated are:

- The gap between per capita rural GDP and per capita national GDP
- The gap between rural HDI and national HDI
- The gap between the ratio of agricultural GDP/total GDP and the ratio of agricultural employment/total employment

If it is agreed that the reduction of these gaps, thus moving towards a balance in development and well-being of rural and urban populations, as the thrust of rural transformation, RTI can be the composite value of these three measures. RTI can indicate the present status of a country and can provide the basis for setting goals for change in various indicators in respect of rural transformation.

Besides looking at the present status, the targets for rural transformation, reflected in indicators, would be to reduce the proportion of people described as rural, to reduce the population employed in agriculture (albeit in a planned and deliberate way), and increase the income level of those who remain in rural areas and in the rural economy, and ensure that they enjoy a higher level of human development, at least equal to the total average national values for HDIs.

Data are available for the rural population by country. To construct RTI,¹ therefore, data are needed for rural GDP, agricultural GDP, and rural HDI

¹ An analogy for the RTI may be the statistical annex of the annual Human Development Report of UNDP and the GMR put out by UNESCO. In the latter case, a set of tables with relevant country data are presented. In addition, GMR has designed an Education Development Index (similar to the Human Development Index of HDR) for countries, and a table with EDI for the countries is presented, placing each country on an international league table.

(or at least components of HDI) to ascertain the gap between the rural and national values of these indicators. We can then take the consolidated averages of these and relate these to ranking of countries by rural population.

Some of the measures of skills used at present relate to quantitative proxies for skills such as years of education or the level of qualification attained. These measures are based on the assumption that each additional year of education and different qualifications represent the same amount and quality of skills regardless of institutions and locations. Moreover, they ignore skills acquired informally and outside the education and training systems.

Increased access to education and training does not necessarily lead to better economic outcomes, as revealed by several research studies (IFAD 2011). In order to make skills supply relevant for the economy, information is needed about demands for skills in the first place. Distribution of employment by education/training background and by occupations provides indications regarding the match between supply and demand. Usually, census and labour force and household surveys provide this kind of information. An important challenge in this regard arises, as noted earlier, from the fact that large parts of the economy are in the informal sector.

A number of measures of economic performance and labour market and health outcomes can provide information on the links between skills and these outcomes. In respect of economic performance, measures could focus on production and productivity growth at the local level for different sectors and types of economic activities. Labour market outcomes are seen in employment, unemployment, and underemployment rates and earnings.

Measures of health outcomes could be about general health and nutrition and disease burdens for specific diseases with high prevalence. Clearly, to be meaningful for the purposes of assessing the role of skills development for rural transformation, it is essential that systems are established to collect these statistics at the local level and consolidated regionally and nationally showing urban–rural breakdown.

It should be noted that in some studies, rural transformation is explained by the inclusion of percentage of the population in employment (or in labour force) and enrolment in vocational/technical education. Regarding labour force, can it be justified that a higher proportion in work force is necessarily a desirable goal? In practical discourse, it is related to the demographic structure of the country. Moreover, cross-country comparability of the data is generally low. Similarly with respect to enrolment in TVET, again the statistics across countries are not very comparable. And thus, it is difficult to say that a higher ratio is necessarily better, especially in the kinds of programmes many countries have. One can see the logic of including this item in studies focusing on skill development. But while doing so, we are making the argument that the kind of formal TVET we have now in many countries is not particularly useful.

Another issue is the use of Human Development Index (HDI) as a measure of rural transformation. HDI subsumes some of the items that are generally presented separately, such as literacy, mortality, and GNP. There may be a value in presenting these separately also in addition to HDI. These statistics primarily make the point that a high proportion of rural population is associated with low human development indicators. These also support the argument that high rural population ratios are both the cause and the consequence of low development indicators of a country. Because of these interactive and complex relationships, simple and rapid urbanisation is not the answer to the problem. The concern which deserves special attention here is how both rural and urban areas are transformed and how the various relevant development indicators are affected and influenced in the desirable direction.

Recognising the importance of a coordinated and strategic approach, OECD has initiated the development of a global skills strategy—a systematic, evidence-based approach to promoting in countries the formulation of sound skills policy and programme development.

Methodological Aspects

Traditionally, rural development is viewed differently by different people, and such the concept is difficult to specify, measure, and evaluate (Kassioumis et al. 2004). The current structure of rural economy and its social systems appear to be much more diverse, complex, sophisticated, and global than those of the last century (Kennedy et al. 2001). Rural development is now seen and considered as a multi-level, multi-actor, and multifaceted process that requires an understanding of the agricultural developmental model, the relationship between agriculture and society, the regional socio-economic structure and rural economic status, individual farm households and their behaviours, and local policies and institutions (Muilu and Rusanen 2003; van der Ploeg et al. 2000; Rizov 2004; Long et al. 2011).

Available evidence suggests that several attempts have been made by researchers to examine and study the issues related to measuring rural development. For instance, during the period 1970–1980, England and Wales developed an index of rurality for local government districts for identifying some of the differences between degrees of rurality. The main components of this index comprised indicators such as population, household amenities, occupational structure, commuting patterns, and the distance to urban centres using the data from 1971 and 1981 censuses (Cloke 1977; Cloke and Edwards 1986). But Cloke himself asserted (Cloke 1994: p.156) that this methodology for indexing and categorising the rural is

Fig. 12.12 Conceptual framework for the measurement of skills (Source: Hoeckel (undated))

naïve and inappropriate. A similar rurality degree index (RDI) was used to differentiate degrees of rurality in eastern coastal PRC (Long et al. 2009). A corresponding index has also been developed to measure and explain both urban and rural development (Liu et al. 2009; Mann and Smaller 2009).

In their recent efforts, the World Bank and OECD are jointly working on a conceptual framework for the measurement of skills for people in rural transformation. OECD suggests the need for deciding a broad range of measurement instruments to guide skills policies for rural transformation beyond a simple estimation of the stock of skills (expressed in terms of educational attainment) available to an economy at any given point in time. They argue that the process of skills development for rural transformation should involve both the supply and the demand side perspective. The proposed conceptual framework for the measurement of skills covers several dimensions as presented in Fig. 12.12. There are various sources for the supply of skills comprising the education and training system as well as migration of skilled workers and participation in the labour market. The demand for skills on the other hand is affected by a number of factors. Skills measures also need to consider the match of skills demand and supply which in turn will have an impact on economic performance as well as on individual economic and social outcomes. Finally, there are a number of contextual factors underpinning skills development which vary from one country to the other and need to be taken into consideration in the design of skills measures.

Table 12.2 Criteria for the development of skills indicators in least developed countries

<i>Relevance.</i>	The indicators should furnish information that provides a useful comparative backdrop for assisting developing countries, particularly least developed countries (LDCs), to identify priorities for skills development and to monitor the impact of their strategies in this regard.
<i>Feasibility.</i>	The focus of the indicators should be on those for which data are available for a reasonable number of countries from existing international and national data collections or that are feasible to generate from (low-cost) new data collection initiatives and/or modifications to existing surveys.
<i>Comparability.</i>	The indicators should be internationally comparable in concept and measurement. This criterion rules out the use of a number of potential sources such as national employer surveys which are rarely implemented in a comparable way across countries.
<i>Timeliness.</i>	The indicators should include those for which data are available or can be collected for a recent year such that the current or future situation in each country is represented in a reasonably accurate manner.

Source: OECD and World Bank (in collaboration with ILO and UNESCO) ([forthcoming](#))

Recognising this need to build up capacity to gather data, OECD has developed an Action Plan which aims to provide a basic indicator framework for monitoring skills issues that should guide least developed countries in the development of their statistical collections according to a set of realistic criteria over the next years (see Table 12.2).

The OECD blueprint provides guidelines for countries or localities not only regarding which kind of information they would need in order to evaluate their current supply and demand of skills, skills match, and outcomes of investment in skills but also on how to deploy this information to support policies that make the most of each country's or region's human capital by nurturing, and using, the skills of its citizens to foster development and promote rural transformation.

Another recent attempt in this direction is by the Chinese Academy of Sciences. The proposed model aims to (1) establish indicator systems that can measure rural transformation development (RTD) in the PRC during the 2000–2008 period, (2) analyse the spatiotemporal characteristics and internal mechanisms of the PRC RTD in the early twenty-first century, and (3) highlight some of the major implications for achieving coordinated urban–rural development (Long et al. 2011).

The term RTD captures changes in traditional rural industries, the employment consumption structure, and the social structure. RTD assessment involves measuring of three major components: the development of a distinctively rural economic system; the transformation of rural social, economic consumption structures; and the improvement of the urban–rural relationship. The relationship among these three critical dimensions is shown in Fig. 12.13.

The study concludes that with the socio-economic development, regional rural development level (RDL) is enhanced, thus promoting the transformation of the rural socio-economic structure, which ultimately affects the progress of regional urban–rural coordination development (URCL). Accordingly, the initial RDL conditions influence the consequent RTL and ultimately change the urban–rural relationship and the regional development patterns (see Fig. 12.13).

Fig. 12.13 Three Dimensions Measuring RTD, RTL and URCL (Source: Long et al. 2011: p. 1096)

The above approach is designed to measure an improvement in the economic and social life of a specific group of people—the rural poor. Four major factors appear to have influenced the rural transformation: increased concerns about the persistent and deepening of rural poverty, changing views on the meaning of the concept of development itself, emergence of a more diversified rural economy in which rural nonfarm enterprises play an increasingly important role, and increased recognition of the importance of reducing the non-income dimensions of poverty to achieve sustainable improvements in the socio-economic well-being of the poor.

Because regional RTD is composed of three dimensions (RDL, RTL, and URCL), indicator systems corresponding to each dimension have been established to comprehensively measure them. The indicators for RDL measurement (see Table 12.3) reflect changes within the rural society, economy, culture, resources, and environment (Liu et al. 2009). Considering the availability of relative socio-economic data, the model uses eight representative indicators belonging to three rule layer factors: rural economic development, agricultural production investment, and rural livelihood. All of these indicators in Table 12.3 are positively related with regional RDL assessment (Long et al. 2011).

As the variables are expressed in different units, they have to be transformed into comparable common units by normalising all measures. For this, the following Eq. 12.1 is used:

$$X'_{ij} = \frac{X_{ij} - X_{i,\min}}{X_{i,\max} - X_{i,\min}} \quad (12.1)$$

where X'_{ij} is the standardised value of the indicator, ij means the indicator, i means the indicator i in the rule layer j , X'_{ij} is the value of the indicator ij , $X_{i,\max}$ is the maximum value of indicator ij for all prefectures, and $X_{i,\min}$ is the minimum value of indicator ij for all prefectures.

Table 12.3 Indicator system for rural transformation level (RTL) assessment

Indicator	Definition	Explanation
Urbanisation level change rate	$\frac{UL_l UL_e}{UL_e}$	UL_l = the proportion of the nonagricultural population in the total population for the later period UL_e = UL for the early period A positive indicator; the higher the value, the higher the RTL.
Industrial structure change rate	$\frac{IS_l IS_e}{IS_e}$	IS_l = the proportion of the output value of primary industry in the total gross domestic product for the later period IS_e = IS for the early period. A negative indicator; the lower the value, the higher the RTL
Employment structure change rate	$\frac{ES_l ES_e}{ES_e}$	ES_l = the proportion of labourers employed in farming, forestry, animal husbandry, and fishery among the total labourers for the later period ES_e = ES for the early period. A negative indicator; the lower the value, the higher the RTL
Consumption structure change rate	$\frac{CS_l CS_e}{CS_e}$	CS_l = the Engle coefficient for rural residents for the later period CS_e = CS for the early period. A negative indicator; the lower the value, the higher the RTL
Grain-farmland index change rate	$\frac{GI_l GI_e}{GI_e}$	GI_l = the proportion of grain-crop area in the total crop are for the later period GI_e = GI for the early period. A negative indicator; the lower the value, the higher the RTL
Multi-cropping index change rate	$\frac{MI_l MI_e}{MI_e}$	MI_l = the proportion of the crop are in the area of farmland for the later period MI_e = MI for the early period. A positive indicator; the higher the value, the higher the RTL

Source: Long et al. (2011: p. 1096)

The indicators show relative indices, without dimensions. To render them comparable, values of indicators were ranged from -1 to 1 using the general normalisation method, according to Eq. 12.2:

$$X'_i = \frac{X_i}{X_{i,\max}} \tag{12.2}$$

where X'_i is the standardised value of the indicator i , X_i is the value of the indicator i , and $X_{i,\max}$ is the maximum value of the absolute value of the indicator i for all prefectures.

After multiplying each negative indicator by -1 , weight and normalised value of each indicator were used to calculate the RDL, RTL, and URCL scores for each prefecture, using the following equations:

$$\text{RDL} = \sum_{j=1}^n \left(\sum_{i=1}^m (x'_{ij} \times W_{ij}) \times W_j \right) \tag{12.3}$$

$$\text{RTL} = \sum_{k=1}^t X'_k \times W_k \quad (12.4)$$

$$\text{URCL} = \sum_{k=1}^t X'_k \times W_K \quad (12.5)$$

where x'_{ij} is the standardised value of the RDL indicator, W_{ij} is the weight for indicator layer factor ij , W_j is weight of rule layer factor j , n is number of the rule layer factors, and m is the number of indicators in each rule layer, is the standardised value of RTL or URCL indicator, and t is the number of RTL or URCL indicators.

On the basis of this methodology, the study established indicator systems for three dimensions used to measure the PRC *rural transformation development (RTD)*, the *rural development level (RDL)*, and the *urban–rural coordination level (URCL)* during the period 2000–2008.

The model used is significantly appropriate for measuring the regional urban–rural disparities within a given country. When we have to measure and compare rural transformation in various major geographical regions of the world, the following methodology is proposed. The methodology proposed herein is not conclusive and is open for further improvement. Once the disaggregated data on several indicators become available for majority of the developing countries, this model can be used, and its applicability can be assessed.

RTI Model

Rural transformation implies as the movement from agriculture (farm) to manufacturing and then to services. As an economy advances technologically over time, importance of the farm sector in terms of its share in GDP and share in total employment gets reduced and share of other two sectors increase gradually. The question that needs to be analysed is whether the rural economic transformation follows the overall economic transformation or otherwise.

It is worthwhile to highlight those factors which have direct or indirect impact on rural transformation or development. These factors comprise primarily the following: (1) technological progress, (2) commercialisation/capitalisation of farm economy, and (3) urbanisation and globalisation. Improved technology and commercialisation of agriculture, coupled with growing urbanisation and global integration, lead to the growth of the rural nonfarm sector. Though rural nonfarm growth is farm led, however, with growing urbanisation and globalisation, rural nonfarm sector transforms gradually and becomes more and more service oriented. Rural nonfarm sector (RNFS) plays an important role in reducing the widespread

rural poverty through generation of employment and income and creation of effective demand for goods and services. The role becomes important as it can provide diverse employment opportunities to the rural people and in the process, transform the rural economy in the desired direction of inclusive growth (Paul and Biswas undated).

In order to investigate the inter-temporal changes in the structure of a particular variable, a macro index called rural transformation index is suggested. The RTI helps to examine (1) whether the rural economy of a given country has been transformed or tending to be transformed overtime; (2) the pattern and nature of such transformation—whether the importance of the service-sector-oriented activities are on the rise in rural areas or whether the importance of non-service and/or non-agrobusiness has been rising; and (3) whether the role of farm and nonfarm sectors are complementary or substitutable in the context of overall economic development—the interdependence of the farm and nonfarm sector. The methodology for the construction of this type of RTI is presented below. The RTI developed on the basis of this methodology also helps to investigate the inter-temporal changes in the structure of a given indicator.

Let ‘ a ’ and ‘ b ’ be two non-negative vectors denoting two different states of a particular rural development indicator, say, for example, ‘ x ’, θ be the angle between ‘ a ’ and ‘ b ’. Then

$$\cos \theta = \frac{\sum ab}{||a|| ||b||} = \frac{\sum ab}{\sqrt{\sum a^2} \sqrt{\sum b^2}} \quad (12.6)$$

$$\text{so that } \theta = \cos^{-1} \left[\frac{\sum ab}{\sqrt{\sum a^2} \sqrt{\sum b^2}} \right] \quad \text{for } a \geq 0, b \geq 0, ab \geq 0 \quad (12.7)$$

when $\theta = 0^\circ$, then a and b coincide meaning there is no change in the state of the variable x .

When $\theta = 90^\circ$, the angular distance between a and b is 90° ; two vectors are perpendicular to each other. Thus,

$$0^\circ \leq \cos^{-1} \left[\frac{\sum ab}{\sqrt{\sum a^2} \sqrt{\sum b^2}} \right] \leq 90^\circ \text{ and then} \quad (12.8)$$

$$0 \leq \cos^{-1} \left[\frac{\sum ab}{\sqrt{\sum a^2} \sqrt{\sum b^2}} \right] \leq 90^\circ \quad (12.9)$$

$$\text{Or } 0 \leq \lambda \leq 1, \text{ where } \lambda = \frac{\cos^{-1} \left[\frac{\sum ab}{\sqrt{\sum a^2} \sqrt{\sum b^2}} \right]}{90^\circ} \quad (12.10)$$

λ is called the transformation index. It is unit free and a pure number. Here, in this case a , b may be interpreted as vectors of a relevant variable with the stipulation that each element of a and b denotes the value share in total (ratio) so that $\sum a = 1 = \sum b$. Thus, λ will measure the overall change in the structure of the relevant variable. It is to be noted that the higher the value of λ , the higher is the degree of structural change and vice versa. Likewise, for the vectors (of output/employment) at two time points, $\lambda = 0$ implying no change at all. A value of λ equal to 1 means a complete structural change. Thus, the value of λ ranges between 0 and 1.

Conclusions

Poverty in the developing countries is a predominantly rural phenomenon. The rural poor are not only income poor. They are also deprived of basic necessities. The majority of the rural population is marginalised in terms of access to physical and social assets and in terms of institutions and equality. The rural poor are also capability poor. They lack essential capabilities and have little access to productive assets and instruments to mitigate shocks that affect their well-being and their ability to come out of poverty. Gender and rural–urban differences in human development and poverty are substantial. The agricultural sector, the major source of economic growth, employment, and livelihood, is suffering from low productivity.

Successful strategies for transforming rural areas facing persistent poverty are diverse and context dependent. Rural communities of poverty must be understood in terms of regional and community assets rather than from a deficit analysis. Although many on-the-ground coalitions of partners are working regionally, most are not working at a scale or capacity to achieve and measure outcomes beyond the community level and require assistance in utilising baseline data for measuring their work.

Due to insufficiently formulated demand by the rural population, most extension topics though are still supply side oriented. Rural development is a complex process. It requires simultaneous action in various sectors: agriculture, nonagriculture, infrastructure, and technology, as well as human resource development. It also requires the creation of a dynamic environment for transforming the rural economy. As a result, rural development must be properly integrated into the national economy. New performance measures must be developed to adequately and appropriately measure rural ‘opportunity’ and rural ‘success’. Ministries of rural development alone cannot promote sustainable rural development; a coordinated effort is required.

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