

PART I RURAL DEVELOPMENT STATISTICS

II NATIONAL AND INTERNATIONAL RURAL DEVELOPMENT POLICIES

II.1 A few examples of national rural development policies

A system of rural development statistics and its associated indicators must closely map the objectives indicated in the policies formulated by governments. Where policies are not very clearly formulated, statisticians have to anticipate indicators being demanded. In setting them up, they should apply international standards of good practice, as illustrated in this Handbook.

To this end a number of national policy formulations are listed below as illustrations of the level of concreteness in the policies.

The stated national objectives for rural and countryside policy in **England (United Kingdom)** (the UK's constituent countries have their own rural development policies) are as follows (DEFRA, 2004):

- **Economic and Social Regeneration** – supporting enterprises across rural England, but targeting greater resources at areas of greatest need;
- **Social Justice for All** – tackling rural social exclusion wherever it occurs and providing fair access to services and opportunities for all rural people;
- **Enhancing the Value of our Countryside** – protecting the natural environment for this and future generations.

In **Sweden** the regional policy aims at creating conditions for sustainable economic growth, equity and freedom of choice so that similar living conditions are created for all citizens in the country. To this end the Swedish government has given the National Rural Development Agency the following task: “... *to coordinate different sectors of society and working for good living conditions and development opportunities for rural areas and rural populations ...*”. One of the ways in which the Agency is managing this task is by providing information about the situation in rural and sparsely populated areas so that it can be monitored and analysed (Jönrup, 2003).

In 1999, **Ireland's** Department of Agriculture and Food published a White Paper on rural development ‘Providing for the future: a strategy for rural development in Ireland’ (McMahon, 2003). This set out a vision and framework for the development of rural communities in Ireland into the next millennium, concentrating on defining a strategic direction for Government in this area. The White Paper identified a policy agenda with six areas of concern. These are referred to in very general terms in extract shown in Box II.1.

These three national examples must be seen against the background of rural development policy for the European Union as a whole and its aims and objectives. The framework is provided by the Rural Development Regulation (Council Regulation (EC) No 1257/1999 and amendments in Council Regulation (EC) No. 1783/2003(1257/99) and other legislation. Annex 2 of this Handbook gives more details.

Box II.I Ireland’s “Future Vision and Policy Agenda”

The Government is committed to ensuring the economic and social well-being of rural communities, to providing the conditions for a meaningful and fulfilling life for all people living in rural areas and to striving to achieve a rural Ireland in which:

1. There will be vibrant sustainable communities with the range of age, income and occupational groups, such as to allow them to adapt to ongoing economic, social, cultural and environmental change and to enjoy a standard of living and a quality of life which will make them attractive communities in which to live and work; the maximum number of rural households and especially family farms, will be retained; there will be equity in terms of opportunity both between rural and urban communities and between communities in rural areas; individuals and families will have a real choice as to whether to stay in, leave, or move to rural Ireland.
2. There will be sufficient income and employment opportunities to allow individuals and families to live with dignity.
3. Rural communities will enjoy access to education, training and lifelong learning and to an adequate level of social and other services and infrastructures.
4. Rural communities will participate effectively in the structures and decision-making processes affecting them in an inclusive society based on the principles of equity, particularly in relation to gender balance and social justice.
5. The cultural identity of rural communities, in particular the language, traditions, heritage and sense of community will be valued and retained.
6. The rural environment will be respected and development in rural areas will take place in a sustainable manner (McMahon, 2003).

In addition to these EU/OECD country cases, a small sample of developing countries has likewise been covered (cf. section XIII.2.2). Some of their rural development policies are reported below.

According to **India’s** Ministry of Rural Development, India has been a welfare state ever since her independence and the primary objective of all governmental endeavours has been the welfare of its millions. Planning has been one of the pillars of Indian policy since independence and the country’s strength is derived from the achievement of planning. The policies and programmes have been designed to alleviate rural poverty, one of the primary objectives of planned development in India. It was realized that a sustainable strategy of poverty alleviation had to be based on increasing the productive employment opportunities in the process of growth itself. Elimination of poverty, ignorance, disease and inequality of opportunities and providing a better and higher quality of life were the basic premises upon which all the plans and blueprints of development were built.

For India rural development implies both the improved quality of life in rural areas as well as greater social transformation. In order to provide rural people with better prospects for economic development, increased participation of people in the rural development programmes, decentralization of planning, better enforcement of land reforms and greater access to credit are envisaged. In order to ensure that the fruits of economic reform are shared by all sections of society, five elements of social and economic infrastructure, critical to the quality of life in rural areas, were identified (health, education, drinking water, housing and roads).¹

A partnership between the Government of the Republic of **Zambia** and the International Fund for Agricultural Development (IFAD) in implementing projects in Zambia has contributed to bringing about new approaches in the agricultural sector aimed at empowering local communities. This is being done in line with the Poverty Reduction Strategy Paper (PRSP).

According to a first progress report of the **Zambian PRSP** (January 2002 – June 2003) (GRZ, 2004), agriculture is a key sector in Zambia's poverty reduction efforts, since most of the poor are in agriculture and also because of the presence of a large resource endowment and conditions suited for agriculture development. The strategy for agriculture is two pronged: (i) ensuring food security and (ii) diversifying agriculture production through promotion of both large-scale and small-scale producers (under out-grower schemes as well as opening up farm blocks). The PRSP also aims at developing water resource infrastructure such as dams, boreholes and wells for improvement in water supply in rural areas and for agricultural use. However, the improvement of water and sanitation in rural areas has been constrained by lack of funding (GRZ, 2004).

An internal **World Bank review** of the first round of 12 PRSPs, covering both Africa and Latin America, indicates major gaps in understanding rural poverty, in particular the linkage between defined actions and outcomes for specific groups of the rural poor and effective mechanisms for selecting and sequencing public sector choice to achieve desired outcomes.² The review concludes that much more work is needed to underpin the PRSP process itself in the upcoming PRSP rounds and with implementation to secure, over time, the desired outcomes. This requires greater consensus building between development agencies and state governments on core principles. While much has been done in taking forwards strategic thinking within agencies, the dialogue between agencies and state governments must be strengthened for deepening the analytical underpinning and for shared learning on generic issues.³

II.2 Rural development - a sectoral based (agriculture) approach

II.2.1 The agriculture perspective

Historically, agricultural policy has been synonymous with rural policy, or at least has been perceived as such. Although farming is still important in shaping land use, employment opportunities in agriculture are declining in relative and absolute terms, at least in the OECD countries (OECD, 2003).

¹ <http://rural.nic.in/i1.htm>

² The review used as its framework the treatment of rural content issues under the headings of participatory processes; poverty diagnosis; the targets and indicators; and priority public actions – these being the framework set by the World Bank and Fund Joint Staff Assessment (JSA) guidelines. It included an assessment of the PRSP documents and the related JSA documents but did not review related and underpinning working papers and reports.

Annex 1 in Proctor (2002) provides further specific detail.

³ <http://europa.eu.int>

Historically, economists saw the main role of agriculture as the supply of labour for the industrialized sectors (Lewis, 1954) and, indeed, it is a necessary precondition for the development process. But by emphasizing this as the only important contribution, other significant functions of the agricultural sector tended to be overlooked.

Whereas most rural territorial units in most OECD countries depended on agriculture as their leading economic engine a half-century ago, today maybe only between one in five and one in every ten, depending on the country, rural countries is “farm dependent”, or counts agriculture as its leading source of income. Agricultural policy thus provides less and less stimulus to the viability of the rural economy (OECD, 2003).

Rural employment patterns and perspectives can therefore not be properly understood by focusing analytical attention exclusively on agricultural sector employment. But it is important, whether for a developed OECD country or a developing country, to monitor the share of agriculture in regional employment and to compare the national average with predominately rural, significantly rural and predominately urban areas, both in absolute terms and in annual changes (OECD, 1994).

Data should also be recorded on territorial differences in part-time and **pluriactive farming**, including agriculture/forestry and agriculture/fishery activities. A large proportion of farm labourers are employed part-time and sometimes engaged in other gainful activities. These include the following:

- Processing of agricultural products, for example, cheese making;
- Non-agricultural activities on the farm, for example, agro-tourism on the farm;
- Employment on other farms;
- Off-farm activities (OECD, 1994).

II.2.2 Trends in agriculture in the last 50 years – employment and productivity

Looking at the period from end of World War II until now, agriculture in OECD countries (and many others) has gone through structural change on a scale that hardly any other sector can match. It can be characterized by the following keywords:

- **Plummeting employment** (including self-employed);⁴ and
- **Skyrocketing productivity increase**; whilst in the same time
- **Cultivated farmland has been more or less stable.**

In Canada, for instance, about 1.2 million people worked on a farm as a main-job in 1946. By 1976, that number had dropped to a little under a half a million and to 367,400 in 2000 (Trant, 2002). One of the more interesting features is that employment in agriculture declined the most among self-employed farmers with no employees, a group more likely to have smaller farms that can probably more easily be run as a second job. The 1996 Canadian Census of Agriculture reported that 46% of all farmers worked off-farm work at some point in the previous year. The comparable figure in 1941 was 36%. Farmers were initially to be found in the forest, fishing, mining and petroleum industries but they are now participating in all sectors. Falling farm employment, however, has not resulted in the large-scale abandonment of farmland.

Improvements in **agricultural labour productivity** have been quite remarkable in many OECD countries. Again taking Canada as an example, agricultural labour productivity increased more than 5-fold

⁴ This is of course not unique for agriculture. Manufacturing has followed the same path but with a lag. See Chapter V “Industrialization, trade and structural change,” in UNCTAD’s Trade and Development Report 2003. Capital Accumulation, Growth and Structural Change.

between 1961 and 2000, largely out-performing the 3-fold productivity gains in the goods producing sector and surpassing the gains in the service sector, which had somewhat less than a 2-fold increase.

Another way to view productivity is to measure labour costs per unit produced. Again agriculture clearly appears to have led industrial sectors in terms of productivity gains.⁵ In 1961, agriculture was labour intensive in comparison to the goods producing and service sectors of the Canadian economy, sectors which at that time required half the labour of agriculture, to produce a unit of value added production. By the year 2000 that relationship had changed. Labour costs had increased for all sectors as had production. Agriculture was the only sector however where production increased while employment declined. The result was only a 2-fold increase in labour costs per unit of real GDP produced in agriculture in comparison to a 4-fold increase in the goods producing sector and close to a 6-fold increase in the service sector (Trant, 2002).

II.2.3 The current situation for agriculture

Several different and emerging forces affect agriculture. First is the **globalization** of the world economy led by several factors including rising incomes in developing countries, reduction in trade barriers, and large countries moving from planned to market driven economies. For a country's farmers and agribusinesses to compete effectively in global markets, a competitive agricultural system is needed. More than ever, the competitive structure of agriculture is affected by rules of trade, domestic policies, infrastructure development and new technologies (Vogel, 2002).

Second is the concern with the **environmental consequences** of the intensive use of land and water resources and the application of agricultural chemicals. Policymakers are faced with difficult decisions about appropriate actions to ensure that their agriculture system is competitive in the world market, yet is sustainable and in harmony with the environment.

A third force affecting agriculture in many countries is a rising political awareness of the **social implications** of the changing structure of the nation's farms into fewer but larger operations. This is happening to the extent that it is affecting the social structure of rural communities as the displaced farmers move elsewhere. On the other hand, there is a growing population of part-time farmers around urban areas who have employment elsewhere but desire the agricultural life style. While these producers may contribute little to overall agricultural production, they do account for a considerable amount of the land. In economics in transition and parts of the developing world, substantial proportions of total production may be generated by subsistence production. This non-marketed output may play a social role in rural communities that greatly exceeds its nominal significance in national accounts.

The primary issue facing statisticians is that all three forces are operating at the same time. Unfortunately, many countries have reduced the resources devoted to statistics on agriculture, based on its declining share in the national accounts. This is an inappropriate response in that it fails to recognize the wider social roles of agriculture and the need for statistics that relate to them. In particular:

⁵ The 3rd edition of the ILO's Key Indicator of Labour Market (KILM) provides estimates of productivity in agriculture, forestry and fisheries (table 18e). Labour productivity is defined as output - measured by gross domestic product (GDP) - per unit of labour input. For a substantial number of economies, the productivity measures for the total economy and manufacturing are complemented with measures of unit labour cost, i.e. labour cost per unit of output. The estimates of the agriculture, forestry and fisheries sector are of an experimental nature.

- Agriculture is at the centre of issues concerning land use and the environment.
- Agriculture is the major user of a nation's land and water resources whilst at the same time it is requested to provide an adequate, safe, and nutritious supply of food - a basic goal of every country.
- Agriculture is an important part of many countries' trade balances.
- Agricultural production, more than any other sector, is very volatile as it suffers from the vagaries of weather on top of market and policy driven effects.

In view of this, a well-designed statistics system needs to provide data to guide governmental policy decisions on agriculture as they relate to food security, economic sustainability, trade and other and economic issues that stretch beyond the narrow confines of farming. Conversely, as policymakers grapple with food safety, land use and environmental issues, they will want to know more about how their policies affect the economic and social well-being of farms and farm households. They will want to know about the geographic distribution of agriculture and its supporting infrastructure so that policy can be made more directly to sub-sectors or geographic regions (Vogel, 2002).

II.2.4 Other characteristics of agriculture

Multifunctionality and agriculture

The term multifunctionality is used to convey the notion that agriculture can play several roles in our societies in addition to its primary function of producing food. It implies "...*the existence of multiple commodity and non-commodity outputs that are jointly produced by agriculture, and the fact that some of the non-commodity outputs exhibit the characteristics of externalities or public goods* (OECD, 2001)."

Multifunctionality also applies to fishing and forestry policies as well as other economic activities but the examples used here will be drawn from agriculture.

The policy context lies in the increased demand for certain of the non-commodity outputs of agriculture. These include not only the environmental goods alluded to above but also social attributes such as the contribution that agriculture makes to the vibrancy, vitality and cohesion of rural society. Thus a statistical system should be capable of the following (after OECD, 2003):

- *Distinguishing public from private goods.* Private goods mean that farmers' production belongs to them. On the other hand, farmers are seen increasingly as agents producing public goods in the course of their private activity: landscape, environment, culture, and so on.
- *Distinguishing material from immaterial wealth.* The agricultural world produces material wealth along with immaterial wealth as, for example, landscape management of the soil and the subsoil, biodiversity, etc.

II.2.5 Perspectives on agricultural policy reform and the rural economy

Developed countries

Agricultural policy reform can imply significant adjustment costs for some individuals and areas in the short term, but the long-term benefits to both farm and non-farm households, and to rural areas generally, can be considerable. While the agricultural sector continues to shed employment, in part the result of long

term pressures (mainly arising from technological advance and static demand) and in part arising from shocks that include rounds of policy reform, jobs are not being created fast enough in other sectors in rural areas to absorb the individuals concerned. In consequence, many rural communities in Europe have a rate of unemployment above the national average.

Rural development policies, even if much more comprehensive and wide ranging than purely agricultural policies, are not a panacea for all the problems of rural areas. The most important task of national governments is to pursue macroeconomic policies conducive to sustained economic growth. The second major responsibility is to implement programmes aimed at reducing the isolation of rural areas, such as ensuring access to educational institutions at all levels, good public transport and accessible modern communication systems (OECD, 2003).

Developing countries

Countries outside the OECD are in general, characterized by an agricultural sector that is much more important in economic terms, and perhaps also in social terms, to rural areas and to the economy and society overall (OECD, 2003). Even in the late 1990s, on average, more than 75% of the labour force in the least developed countries and other low-income countries was engaged in the agricultural sector while the figure was about 35% in other developing countries. Agriculture is thus a very important source of employment and income, with implications for other sectors of the economy, in these countries. Raising agriculture productivity is important for reducing poverty and promoting food security and nutritional well-being (cf. Chapter 3 in ILO, 2004).

Having said this, it is also clear that non-farm activities, which usually grow faster than farm production, will play an increasingly important role in expanding rural employment and income. Rural employment strategies should therefore also be developed in order to spur off-farm employment opportunities (UN, 2003).

II.2.6 The farm policy dilemma

In many countries, agriculture policies are, or have been, overwhelmingly focused on subsidies to commodity growers. In other countries, trade issues or food security are the main focuses of agriculture policies. Broader rural development initiatives only receive a fraction of the subsidies⁶ (OECD, 2003).

Countries are, however, becoming increasingly aware of the need for further progressive reductions in domestic agricultural support and border protection, and to shift away from policy measures that encourage higher levels of food production and input use, towards measures that are less distorting of markets and trade.

If productivity gains in agriculture tend to reduce the sector's capacity to create jobs, then viable rural communities may be assured more by comprehensive area-targeted programmes than by traditional agricultural production-linked payments. In other words, a shift from a sectoral to a territorial policy approach is called for (OECD, 2001).

⁶ In 2001, total support to OECD agriculture was USD 311 billion, representing 1.3% of GDP across the OECD area (OECD, 2003).

II.3 Rural development - a territorial based approach

II.3.1 Employment – the driving force of rural development

Labour force participation rates are generally lower in rural regions compared to urban regions. Moreover, in most countries, rural women are underrepresented in the labour force. On the other hand, a salient point in many developing countries is that women are typically more likely than men to work in the agricultural sector. For example, women in rural Africa produce, process and store up to 80 % of total foodstuffs, while in South and South-East Asia they undertake 60 % of cultivation work and other food production. As mentioned above, rural areas in developed countries will be confronted with substantial increases in the working age population. This will generate uneven territorial pressures for labour market adjustments (OECD, 1994).

In rural areas there are large variations in employment creation performance. In the OECD area, it has been noted that a group of dynamic predominantly rural regions, representing between 5% and 15% of the total national work force, has experienced employment growth considerably higher than the national economy as a whole. Thus, **rurality in itself is not a handicap for job creation** (OECD, 1994).

To this end the OECD recommends that more attention should be given to studies which examine intra-regional populations and employment dynamics. These studies should address the following questions:

- What role do towns and cities play in rural labour markets and rural development?
- Are there specific patterns of rural, as opposed to urban, employment and population developments?
- What is the economic base of urban and rural structures? Are there significant differences between urban and rural economic bases? (OECD, 1994).

II.3.2 Trends for rural regions

One of the main conclusions drawn from analysing rural development is that rural areas and their economies are very heterogeneous, with large variations from one area to another. In the United States, for instance, most of the economic growth is concentrated in roughly four of every ten rural counties. Counties that are enjoying robust economic growth tend to have one of three characteristics: scenic amenities (such as in the Rocky Mountains), proximity to metro areas (common to the fringe areas of nearly all major metro areas), or are emerging retail and financial hubs (the solitary growth centres scattered throughout the nation).

Outmigration of young people caused by lack of employment opportunities and inadequate access to educational and leisure facilities, along with the in-migration of retirees in some places, has led to significant ageing of the population. Moreover, most rural regions have difficulty in establishing the necessary critical mass of facilities, producer services and infrastructures to support economic development. Consequently, entrepreneurs face specific obstacles in starting up enterprises in rural regions.

Some rural regions perform very well, even better than urban ones. A central question is therefore why certain rural regions perform better than others? Transport infrastructures and towns in the region or the vicinity of a major urban centre are often mentioned as important factors. Each region has different combinations and levels of capital endowment (physical, financial, human and social). What counts is the availability of one form of **capital** or another as much as the ability to properly exploit it. In some cases, **intangible aspects** (entrepreneurship, cultural identity, participation and partnerships) are the most important in making the difference.

Some regions succeed well in exploiting their natural resources such as wood, oil, minerals or hydro-electricity or to attract major public infrastructure investments. Another successful strategy has been to focus on amenity-based development schemes. The success of some rural regions has been due to their ability to valorise public or quasi-public goods such as a clean environment, attractive landscapes and cultural heritage (including food).

Farming can continue to play a role in, and remains a tool for, rural development. It is important to dispel the outdated notion of the “full-time farm business” with the household wholly dependent upon agricultural income (see Chapter IX).⁷ Farm households often have multiple income sources (see Chapter X). In other words, the health of the farm and non-farm economies in rural areas is inexorably linked.

Dramatic shifts in populations provide another piece of evidence that a new approach to rural policy is needed. Many rural places with strong economic gains also experienced strong in-migration, while weak economies often saw an outright loss in population. Labour market statistics also show that unemployment remains highest in the most remote rural places while the suburbs to large cities had the lowest unemployment rates (OECD, 2003).

In this context, the OECD recommends that analyses should be made of **demographic pressure indices** (such as the population between 5 and 14 in relation to the population between 55 and 64) that indicate potential new workers per retiring worker. Another key measure is the **dependency ratio**, which is defined as the population between 0 and 14 plus over 65 in relation to the active population in the age range of 15-64.

II.3.3 Entrepreneurship and job creation in rural areas

Factors often cited as associated with successful rural areas include well-established inter-firm relations within clusters, and accessible and valuable natural and cultural resources that increase the sustainable attractiveness of places.

Amenity-based development and industrial clustering seem also to offer sustainable prospects for an increasing number of rural areas. Together with increased connectivity due to information technologies, a greater and diversified social demand on rural areas has widened the range of regions considered as having marketable values.

Commuting has always separated where people live and work (Johnson, 1999). Improved transportation allows the distance between work and home to grow. Tele-commuting opportunities allow this distance to grow still more. Furthermore, spatially separated production, using information technology to coordinate production activities, splits the traditional workplace.⁸ E-commerce, which is growing rapidly

⁷ In this context, Ray Bollman from Statistics Canada has an interesting observation: “Historically, at least in Canada since the period of European settlement, a significant share of farm operators worked off the farm. Also, historically, a relatively small share of the time of farming families was involved in growing plants and husbanding animals. A large share of the time was involved in the manufacturing of horsepower (i.e. raising and maintaining horses) and in the production of fuel (i.e. growing and harvesting hay and oats) and in food processing (washing and sorting eggs, churning butter, separating the cream from the milk, canning fruits and vegetables) – today, work in these manufacturing sectors is classified as “off-farm work” but this manufacturing activity used to take place on farms. Thus, perhaps, the same share of farm household time is still allocated to tending crops and livestock – the difference today is that the manufacturing of farm inputs and the processing of farm products tends to take place off the farm.”

⁸ See ILO’s World Employment Report 2001, which examines the employment challenges and opportunities emerging from the rapid growth of information and communication technologies (ICT) around the world. Recognized as among

both in volume and in the range of goods and services traded (from stock to groceries), also tends to separate where people live and spend their money. .

The development of rural areas is based more and more on interactions with adjacent areas. Co-operation between communities and the setting up of horizontal partnerships between public and private actors over areas sufficiently large to define coherent, common strategies have been seen as the most effective means to enable these new forms of territorial development (OECD, 2003).

II.3.4 Are manufacturing and services now the pillars of rural development?

While agriculture, forestry and fishing formed the traditional economic base of rural areas, the set of externally-oriented economic activities in rural space is now much larger. Manufacturing, tourism, and senior level government facilities of various types are now important sources of external income in many rural areas. Indeed those areas that still depend on farming and the other traditional primary sectors are typically less well off in terms of a broad range of economic indicators.

Moreover, in some rural communities there is no tradition of an indigenous **entrepreneurial class** and little experience in small-scale manufacturing. In these places, especially those with limited natural amenities, the potential to diversify beyond agriculture is mainly a function of the ability to attract outside industry.

Nevertheless, manufacturing will likely remain a central element in rural development. While many places are trying to expand the role of tourism this is not a real option for rural communities that are too inaccessible or lack a high enough level of amenities to attract visitors. Similarly there is little potential for producer services to play a major role in most rural places. Almost by default, the survival of many rural communities will depend upon maintaining a manufacturing base.

Large firms, relative to the size of the community, can present significant development problems. Entrepreneurship tends to be reduced if there is one dominant firm in the community. Further, the closing of a single, dominant firm represents considerable risk to the entire community.

II.3.5 Merging industry sectors

Just as the computer industry merged with the telecommunication industry the same phenomena has happened with agriculture and agri-food. The potential for synergies also exist between agriculture and pharmaceuticals, agri-tourism and agri-environment. As an example, the pharmaceutical industry is introducing processes where pharmaceutical inputs are grown in crops or animals instead of being produced in factories.

the major drivers of economic growth and wealth creation, ICT are raising productivity, reducing costs and increasing the speed of communications to help shape the new global economy. The effects of ICT on the emergence of new enterprises and the demand for new skills and knowledge are profound, and this study illustrates how they have changed labour market conditions and industrial relations as well. While analysing how new technologies influence the quantity, quality and location of work, the book also looks at where jobs will be lost and created in industrialized and developing countries.

II.3.6 Industrial structures and characteristics of rural and urban economies

In all countries, establishment size, in terms of persons employed, is smaller in rural than in urbanized regions. The average size of establishments differs considerably and systematically among types of regions and countries, the smallest establishments are found in predominately rural regions. As a result, the average size and structure of enterprises and establishments in relation to employment change should be highlighted (OECD, 1994).

In the context of industrial structure, it should be noted that **specialization** in many rural economies has made them particularly vulnerable to business cycles and resource depletion, for instance in mining and forestry. A mix of business with respect to size and industrial and service sector variety seems to better lay the foundation for a more stable labour market (OECD, 1996).

II.3.7 Sectoral mix and territorial dynamics

Analysis by the OECD has shown that the economic structure, i.e. the mix of different types of economic activities and size of particular activities, restrains employment growth in predominantly rural regions. At the same time, it is region-specific factors that make a predominantly rural region leading or lagging (Bollman, 2003).

It has been further shown that 78% of OECD territorial disparity in GDP per capita is due to disparities in labour productivity (GDP per worker). In some countries, such as Denmark, Netherlands, Ireland and Canada, it exceeds 90%. Even among a fairly homogeneous group of countries such as the OECD there is a wide range in territorial disparities of GDP per capita, ranging from an adjusted Gini coefficient of between 0.15-0.20 in Italy, Hungary, United States and Mexico to below 0.05 in Norway, Czech Republic and Sweden (Bollman, 2003).

The large differences in the performance of dynamic and lagging rural regions cannot primarily be explained by differences in their sectoral mix. Other characteristics such as networking and governance as well as a range of additional characteristics, often not yet identified or well understood, are responsible for generating positive territorial development dynamics, which more than offset the disadvantages stemming from unfavourable sectoral structures in rural regions (OECD, 1994).⁹

II.3.8 Education and employment in rural regions

The level of education of the rural labour force is an important indicator in any assessment of rural employment conditions and trends. Unemployment rates differ significantly according to educational attainment levels.¹⁰ People in rural regions tend to have lower education levels and are more likely to work in industries with low-skill jobs (OECD, 1994).

⁹ See the current research activities of Vincenzo Spiezia, Head of the OECD Territorial Indicators and Statistics Unit, which focus on the analysis of regional comparative advantages and the assessment of policies for regional competitiveness (cf. OECD, 2004).

¹⁰ See the ILO KILM 11 'Unemployment by educational attainment,' which focuses on unemployment among workers categorized by their level of educational attainment. Specifically, the indicator is the percentage distribution of an economy's total unemployed according to five levels of schooling - less than one year, less than primary level, primary level, secondary level and tertiary level. Information for the indicator is given in table 11 for 105 economies, to some extent (Source: <http://www.ilo.org/public/english/employment/strat/kilm/kilm11.htm>).

More than half of the world's population and more than 70 % of the world's poor are to be found in rural areas where hunger, illiteracy and low school achievement are common. Educating a large number of people in rural areas is crucial for achieving sustainable development. Poverty reduction strategies are now placing emphasis on rural development that encompasses all those who live in rural areas. Such strategies need to address the provision of education for the many target groups: children, youth and adults, giving priority to gender imbalances. This complex and urgent challenge should be addressed systematically, through an intricate set of policy measures, at all levels of education systems.

Rapidly changing technologies and increasing globalization also suggest that better education and training have become essential for sustainable livelihoods and the competitiveness of the rural economy. For many years, the approach followed by policymakers and education specialists has been to focus on practical and occupational agricultural skill training provided mainly at the secondary and tertiary levels. Yet, in a spatial and economic environment increasingly shaped by non-farming activities, and in a policy context dominated by the poverty reduction agenda, education for rural development requires a holistic approach going beyond the narrow boundaries of the traditional agricultural education and training concept.

II.3.9 The role of tourism

Although there are many methodological problems in measuring tourism, and few hard figures exist to support claims, it is clear that it is a powerful force of change in the economy in both the developed as well as in the least developed countries (OECD, 1994). Tourism is a growth sector in terms of employment. Overall, it grows faster than total employment, two to ten times faster than for the labour force as a whole, and is often considered an important potential source of employment for many rural areas. When successful, it helps to preserve local jobs in marginal rural areas, creates new jobs where the activity prospers, and diversifies employment.

Tourism related statistics are hard to identify. There is an international definition but the delimitation is very unclear. In ISIC revision 3, which is the international activity classification, tourism covers:

- ISIC 55: hotels, restaurants and cafes;
- ISIC 60-63: transport and travel;
- ISIC 92: recreational, cultural and sporting activities (market and non-market services).

Of course not all jobs in the above industries can be attributed to tourism.

When analysing the contribution of tourism to rural employment large differences between countries are noted. These, however, are partly due to differences in the content of the statistical categories (OECD, 1994).

Agri-tourism constitutes a significant opportunity where agriculture coincides with scenic or heritage amenities (OECD, 2003). The popular tourist regions in the predominately rural group all have in common a very low population density (OECD, 1994). The interdependence between agriculture and tourism can be illustrated by the example of the **United Kingdom**. The economic consequences of the outbreak of foot-and-mouth disease in the UK negatively affected farming as well as other rural economic activities. In the UK, income from farming has declined, leaving tourism as the predominant rural economic activity (OECD, 2003). Rural tourism is worth nearly £14 billion a year. It is estimated to support 380,000 jobs in the English countryside, compared to 374,000 in farming in 2000 – including farmers and their spouses. Rural England is home to some 28% of the population and 35% of registered businesses (OECD, 2003).

A contrasting example comes from **Zambia**. The **Zambian Poverty Reduction Strategy Paper (PRSP)** (2002-2004) section on tourism sets out a plan that envisages two broad interventions – national and zonal, both of which are expected to encourage investment in the sector. National interventions include rehabilitation of roads in tourist areas, rehabilitation of museums, tourist marketing, and human resource development. Zonal development refers to intense development work in identified tourist areas to make them attractive to tourist investment. It includes building or rehabilitating access roads, tourist roads, and airports where appropriate, and the provision of power (rural electrification).

Significantly, it also includes finding world-class investors (comparable in status to the Sun International) in the respective development zone, who will be the key engine in the area. Smaller lodges can feed off them. Within this framework, formulae have been designed regarding how the local people can participate in and benefit from the tourism expansion. The first priority zone is the Livingstone and Victoria Falls area because it promises the greatest impact with spillover effects to other parts of Zambia. It is followed by Kafue National Park (physically linked to Livingstone), the Lower Zambezi, and the Lusaka area. Other areas will follow in subsequent PRSPs.

II.3.10 The importance of communications

The lack of access to frequent and reliable transport is a key factor in contributing to disadvantage and social exclusion in rural areas (OECD, 2003). However, scarce public funding must be prioritized. In this context, it could very well be argued that places that are growing “deserve” more public investment in their infrastructure and places that are declining have (almost by definition) too much infrastructure.

The **Zambian PRSP** (2002-2004) is once again a case in point on the issue of prioritization of public resources. The Government of Zambia pledges that the PRSP places a high premium on infrastructure development, particularly rural roads, in order to facilitate faster and diversified agricultural activity. This is well reflected in the scarce resource allocation pattern during the PRSP period. To encourage rural-based agricultural processing and mechanization, the energy sector is also receiving priority attention.

In any analysis of the employment situation and development trends in rural regions, **mobility** plays a significant role as a regional balancing mechanism for the labour market. Increased mobility in the form of commuting has consequences, not only for the labour market and for social policy, but also in inducing additional traffic and the creation of new challenges for transportation infrastructure policy (OECD, 1994). Commuters are defined as persons who cross regional borders to get from their place of residence to their place of work.

Peripherality has been defined in terms of distance from centres of economic activity. As such it is closely related to, but distinct from rurality, which is defined more often in terms of (low) population density (since rural areas may be very accessible, and some peripheral regions may contain major cities). It is also distinct from the density-based definitions of rurality in being a continuous (as opposed to dichotomous) concept (Bryden, 2001).

The simplest measurements of the impact of location on the development of an area are those which consider the transport infrastructure itself, expressed by distance or travel time to nearest nodes of inter-regional transport networks, for example:

- Road length by class;
- Distance from an international airport;
- Distance from a mainline railway station;

- Travel time to nearest urban centre (Bryden, 2001).¹¹

There are, however, many more types of measurement of **accessibility** that have been utilized by researchers and policy practitioners. These include access to networks, distance to the nearest network node, number of direct connections, number of lines arriving at node, travel cost to one other node, average travel cost to all nodes, expected value of utility of visit to all nodes, potential accessibility, number of people reachable with a certain travel cost, inverse of balancing factor in spatial interaction model, and accessibility assessed by expert judgement.

II.3.11 The role of information technology for rural development

Access to information technology is not universal, not even within the same country. The Canadian case study shown in Chapter IV of this Handbook shows that overall household Internet connectivity and use of computers are lower in rural and small town communities than in their urban counterparts. One reason for this is the difference in educational attainment between rural and urban areas.

Information technology provides possibilities for rural communities to have access to a whole range of services without being hampered by their distance to providers. It also provides increased opportunity to work from any physical location, which has favoured rural areas with excess labour supply, lower wages and a lower cost of living. This is a feature of teleworking from home, but it also refers to the relocation of jobs from industrialized to developing countries, such as "back-office" staff located in call centres, data entry and processing functions and software development. These kinds of services tended to move first to rural areas in developed countries and then to certain developing countries, India in particular.

Work that is independent of location constitutes a growing share of employment in industrialized countries. Almost one fourth of the workforce in the United Kingdom now carries out at least some of its work at home. By 2003, there will be an estimated 1.3 million employed in call centres in the EU, up from an estimated 670,000 in 2001. The technology is, however, universal. What constituted a chance for rural communities in developed countries to have access to a new labour market also represents an opportunity for developing countries.

More than 850 million people in developing countries are excluded from a wide range of information and knowledge, with the rural poor in particular remaining isolated from both traditional media and new information and communication technologies which would improve their livelihoods.¹²

Studies on information systems serving rural communities have focused on specific sectors such as agriculture or health, instead of covering rural community needs in a holistic manner. Rural information systems must involve rural communities and local content must be of prime importance (Mchombu, 1993). Traditional media have been used very successfully in developing countries, and rural radio¹³ in particular has played a major role in delivering agricultural messages (Munyua, 2000).

¹¹ There are many arguments from traditional location theory and more recent trade theory (Krugman, 1991) about where new development is likely to take place. Geographic concentration relies on the interaction between increasing returns, transport costs and demand. For an extensive discussion of the accessibility issue see Banister and Berechman (2000:50-54).

¹² Source: Communication for Development. http://www.rdfs.net/themes/communication_en.htm

¹³ Using a popular radio programme called "*Kumuzi Kwathu*," (Our Village) and "*Chikaya chitu*" in Chewa and Tumbuka respectively, the Zambia Community Radio Project (ZCRP) (a United States Aid - funded project under the Education Development Centre (EDC) Africa) is reaching out to thousands of villagers, passing on life-saving

The Internet is rapidly expanding in developing countries. This expansion is, however, largely an urban phenomenon and most rural communities are not yet able to take advantage of the services available to their urban neighbours. Pilot projects linked to rural and agricultural organizations can help ensure that rural communities and agricultural organizations remain part of regional and national Internet initiatives.

In 2003 and 2005, the United Nations organized the World Summit on the Information Society with the aim of developing strategies to reduce the “digital divide” (Munyua, 2000).

II.3.12 Rural services standards

People in rural areas have a right to reasonable access to a range of services to meet their various needs (OECD, 2003). These include not only basic services such as health care, schools, postal services and other communication means, and security (police, fire-brigades etc.) but also retail outlets of private goods and services as well as access to leisure and cultural activities and participation in the political process.

II.3.13 Objectives for rural policies

The focus for promoting rural development and employment should be on transforming and developing new and distinctive economic functions (OECD, 2003). The interests of the majority of rural citizens, and even most farm families, seem to be best served by a development strategy based on investments to build local assets. In this context focus should be on:

- Enhancing “competitiveness” of rural regions by targeting local collective goods;
- Shifting from an approach based on subsidizing declining sectors to one based on strategic investments;
- Shifting from a sectoral to a place-based approach;
- Enhancing business assistance and networks of knowledge;
- Developing human resources through vocational training, including an important emphasis on entrepreneurial skills, and “capacity building” for policy actors at local levels;
- Ensuring new ways of providing public services in scarcely populated areas (OECD, 2003).

II.3.14 New issues in rural policymaking

Past public policies have made simplistic distinctions between rural and urban areas. Furthermore, they have tended to regard rural areas as homogenous, with uniform problems and similar opportunities. In fact every rural place has different assets (OECD, 2001).

Why do regions have such distinct performance profiles? Regions have certain basic resources and characteristics such as potential-geographical location, proximity to markets, topography and climate, natural resource endowments, industrial heritage and endowments of human, social and physical capital that to a large extent shape their development trajectory. Even the new information technologies that make the factor of distance less important do not necessarily lead to more uniform spatial patterns (OECD, 2001).

information on HIV/AIDS and inspiring people to fight poverty through motivational success stories they profile on selected villages (Chanda, 2004).

The need to develop tailor-made regional policies has been implicitly recognized by central governments and by, for instance, the EU (for example, the LEADER initiative follows a bottom-up approach).

The development of rural areas is increasingly based on interactions with adjacent areas. The inter-regional aspect is not always taken into account at the international level because these cross-border zones do not coincide with traditional administrative divisions.

In practice, a wide variety of institutional arrangements for the delivery of rural policy have been noted in OECD countries, but some common features are:

- Decentralization towards regions and localities;
- Support for “bottom-up” development initiatives;
- Attempts at better coordination of policies affecting rural areas at central levels through inter-departmental and inter-ministerial working groups;
- Greater coordination and cooperation at regional and local levels usually through partnerships (OECD, 2001).

It is widely argued that development policy and practice must allow for diversity in the goals and objectives of development, must acknowledge that it should include social, cultural, environmental as well as economic dimensions, and should allow for democratic processes at all levels (OECD, 2001).

II.4 Conclusions

The main characteristic of rural policies, at least in developing countries, is the **shift from a sectoral to a territorial policy approach**, including attempts to improve coordination and to integrate the various sectoral policies at regional and local levels. There is a shift from an approach based on subsidising declining sectors to one based on strategic investments to develop new activities. More attention is given to quasi-public goods and “framework conditions” which support enterprise indirectly. To this end there is an increased focus on local specificities as a means of generating new competitive advantages, such as amenities of an environmental or cultural nature or traditional or labelled local products (OECD, 2001).

Another salient feature of present rural policies is the increased use of partnerships between public, private and voluntary sectors in the development and implementation of local and regional policies. This has also implied decentralization of policy administration and, within limits, policy design to those levels (OECD, 2001). There are clear moves away from centralized “top-down” policy and delivery towards more local “bottom-up” approaches within an agreed policy framework, although there are still issues about the balance between these and what institutions and governance are needed in support.

Regional policies play an important role but they need to understand and be sensitive to the differences between urban and rural areas within the region (and between different types of rural area), which may require different approaches. Regions may, in themselves, be at too high a level and sub-regional approaches may be needed, as demonstrated by Mexico’s focus on microregions. It is essential to identify, on an individual basis, each particular area’s opportunities and advantages as well as its disadvantages.

Agriculture continues to play an important role in rural economies - in many developing countries it is the key sector - and its impact on the landscape, the environment and rural amenities is critical.

Rural areas are not just problems; they also present opportunities and the potential to contribute positively to competitiveness, for example through the growth of microbusinesses, niche markets and the increasing role of women entrepreneurs (OECD, 2003).

The provision of infrastructure (such as transport, telecommunications, water and sanitation, power and gas, and major water works) and the enhancement of social capital designed to increase the competitiveness of rural areas are more and more the focuses of rural policies. An important part of these policies is the creation of a good environment for entrepreneurship and local initiatives (OECD, 2003). Rural development initiatives do not necessarily need to come from the “capital”, although there is a need for the central coordination of a wide range of policies affecting rural citizens through institutional arrangements for inter-departmental and inter-ministerial coordination (OECD, 2001). Central support needs to provide more flexible arrangements for rural development.

Other conclusions, partly overlapping what was said above, drawn from experiences of rural policies are in short:

- Efforts to create new institutional arrangements at local and regional levels to define policy objectives priorities and strategies, and implement policies and programmes at these levels.
- A new focus on trying to improve the “competitiveness” of rural areas.
- Attempts to divert resources from programmes which focused on subsidies to maintain existing rural activities to programmes which focus on support for investment in human and social capital, diversification of economic activity and the related creation of new enterprises, key infrastructure, the environment, and innovation.
- Efforts to reinforce rural economies, principally through diversification of economic activities.
- Enhancing business assistance, especially efforts to diffuse new technologies through R&D and the development of specialized regional institutes or centres.
- Developing human resources through vocational training.
- Developing and commercializing natural and cultural “amenities.”
- Creation of local products based on local identity and aiming at a market niche.
- New ways of providing public services in rural areas.
- The increasing use of programme evaluation procedures both as a control and a learning mechanism (OECD, 2001).

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III CONCEPTUAL FRAMEWORK

III.1 Definitions of rural

III.1.1 Introduction

Chapter III reviews the conceptual framework of rural development indicators selected by various international organizations. Each of the subsections of the chapter starts with the work carried out by the OECD followed by that of the other organizations. In order to avoid repetition of common features and issues that have been accounted for in the OECD subsection, they will not be repeated again in the successive subsections covering the other organizations. This approach implies that the OECD write-up will be substantially more extensive, which should not be taken as an indication of any qualitative or quantitative preference for the OECD material.

III.1.2 OECD

The design of the territorial scheme, which provides the geographic grids for the collection, aggregation and presentation of statistical data, is of key importance for all kinds of rural analysis. The territorial scheme applied by the OECD distinguishes two levels of geographic detail: **local communities** and **regions** (OECD, 1996).

It also defines a **rural area** as a local community with a population density **below 150 habitants/km²** (500 in the case of Japan) (OECD, 1994).

Replies to an OECD Rural Data Survey and an evaluation of other sources, lead to the following observations (see also Annex 1):

- **The notion of "rural" is universally used by OECD Member Countries.** It describes certain parts of the country that are characterized by a relatively low number or density of population, or by certain socio-economic features (OECD, 1996).
- **An official definition of "rural" does not always exist.** Definitions used vary significantly. In most cases they treat rural as a residual category. In this instance, it is defined negatively in the sense of not being "urban" or "agglomerated", rather than being explicitly specified by its own properties.

When analysing the different national approaches to defining "rural" it is appropriate to distinguish the following three aspects:

- The size of the territorial units and the level of geographic hierarchy;
- The criteria used to characterize the units at the respective levels;
- The quantitative thresholds used to define the boundary between rural and other areas (OECD, 1996).

The basic territorial units used in national definitions of rural vary considerably in size, both with regard to population and area. For example, French Communes, which are the smallest administrative units in Europe, have an average population of 1,500 inhabitants and a surface area of 15 square kilometres while English Districts encompass 118,000 inhabitants in areas of more than 500 square kilometres. Counties, which in the United States are used as the basic building blocks for rural analysis, have an average

population of 80,000 inhabitants and an average surface area of almost 3,000 square kilometres. In terms of area, these American Counties are much smaller in the East than in the West (OECD, 1996).

As a simplification, one can roughly distinguish two levels of territorial hierarchy used for rural classification and analysis. If Member Countries try to identify homogeneous “rural” areas as being distinct from “urban” places, they tend to use small geographic units at the local community level as the statistical building blocks. On the other hand, larger geographic units at the regional level are used where the emphasis is on analysing functional relations. Usually these larger zones cannot be classified in terms of either rural or urban but as more or less rural, according to their **degree of rurality**.

A priori, neither level of territorial detail is more appropriate than the other. The “right” choice will depend on the analytical purpose or on the policy problems that have to be solved. Consequently many Member Countries apply both territorial grids.

An additional difficulty arises from the fact that in most Member Countries the territorial grids do not remain constant over longer periods of time. **Boundaries are frequently changed**, often as a consequence of administrative reforms. Also, a given unit may be reclassified due to changes in population, making time series analysis on the basis of aggregated rural data particularly difficult, if not impossible.

Member Countries use a **wide range of criteria** for the designation of “rural” areas. For example:

- Size of population (total or agglomerated, absolute or relative);
- Population density (in relation to total or usable area);
- Commuting intensity (towards major cities or labour market centres);
- Share of agriculture (either in employment or in value added) (OECD, 1996).

The choice of criteria used to identify rural areas is not independent of the size or hierarchical level of the territorial units to which they are applied. To define rural at the local community level, most countries use a population size criterion. For larger functional or administrative regions, which in most cases will include at least some urban elements, criteria such as density and distance or others such as economic base are more commonly applied (OECD, 1996).

Even when the same criteria are used, the thresholds set for defining the boundary between rural other categories vary considerably. For population, the size of the agglomerated units used by Member Countries varies between 1,000 (Australia and New Zealand) and 10,000 (Italy); 2,000 is the most common threshold. The share of agricultural employment considered as the minimum for classifying an area as rural differs between 1.5% (Luxemburg) and about 20% (Greece).

It is clear that the use of alternative definitions will not only yield different results with regard to the scope of rural areas but will also create different pictures of their problems and perspectives:

- If the share of “rural” population in **France** were to be calculated using the French, Italian, Spanish and Greek definitions, the respective results would be: 27%, 51%, 30% and 27%. None of these definitions or their results, not even the French one, should be considered the “right” one (OECD, 1996).
- In the **United States**, rural analysis relies on two different definitions. The one distinguishing “rural” from “urban” places, the other differentiating “metropolitan” or “metro” from “nonmetro” counties. Both definitions result in roughly similar numbers of residents, 22% and 27% of the total United States population. The overlap, however, is small with only about 50% of the “rural” population residing in “nonmetro” counties.

- In **Canada**, the “official” definition of “rural” applies to individuals that live outside centres of 1,000 or more population. One third of these “rural” individuals are living within the commuting zone of “larger urban centres” (specifically, Census Metropolitan Areas with an urban core population of 100,000 or more or a Census Agglomeration with an urban core population of 10,000 to 99,999). Thus, these individuals are “rural” in the sense of living outside a centre of 1,000 or more but, from a labour market perspective, they are living within commuting distance of a larger urban centre. From this perspective they might be classified as “metro”.

As these few examples show, there is more than one “correct” definition of rural. National definitions are continuously under debate and are in fact adjusted from time to time, reflecting, for example, changes in socio-economic and administrative structures or in mobility and communication (OECD, 1996).

Since the review of national approaches showed that rural is often considered as the corresponding residual to “urban”, studies have been conducted into whether the OECD could base its definition of rural on past OECD attempts to describe urban.

OECD statistics on urban population revealed the following results:

- Two different approaches to measuring “urban” can be identified: one focusing on Urban Communities, the other dealing with Urban Areas and their Urban Centres;
- Population size was the decisive criterion in both approaches;
- The share of “urban” population reported by the two projects differs considerably;
- The ranking of OECD Member Countries by share of urban population varies according to the sources used.

The limitations of these statistics, at least for the purposes of rural analysis, can be demonstrated by a few examples. According to the OECD Urban Affairs statistics, only 18% of the Dutch population live in urban areas – the Netherlands being the most densely populated Member Country in the OECD – whereas the highest share of urban population is attributed to Canada (50%) and Greece (38%). In contrast, according to the Social Indicators statistics, Sweden and Denmark are ranked amongst the most urban OECD Member Countries, with urban populations of more than 80%. Italy with 53% and the Netherlands with 66% show up as being the least urban countries (OECD, 1996).

The definitions used may be considered reasonable for urban analysis. For rural analysis they seem to be a false starting point. Three main conclusions can be derived from this short review:

- “Rural” cannot be well defined as the residual of “urban”;
- Population size alone is not a sufficient criterion for describing “rural”;
- Statistics that are not based on commonly applied definitions tend to produce seriously inconsistent results (OECD, 1996).

Territorial coverage

There are various reasons why it is appropriate to study the entire territory of the Member Countries and not just their rural parts. Even when focusing on rural analysis, the underlying territorial database should be structured neutrally, in such a way that it can also be used for other purposes, such as for urban or regional statistics. The database should, in principle, allow for **alternative groupings** of areas according to multiple analytical needs.

Also, from a purely rural perspective, there are good reasons for covering the entire territory. Rural analysis relies on the ability to describe the differences and the interrelationships between the rural areas and the other parts of the country. Only if data is available for all parts can consistency of results be confirmed (OECD, 1996).

Hierarchical levels

Within Member Countries, the OECD scheme distinguishes two hierarchical levels of geographic detail:

- Local community level - At this level, the territorial grid is very detailed. It consists of small, though not necessarily the smallest possible, basic administrative or statistical units. Rural analysis is usually based on these local units when it is concerned with characteristics of “homogeneous” areas that can be classified as being **either rural or urban**.
- Regional level - Here the territorial grid is less detailed. The geographic building blocks are larger administrative units or functional zones, such as provinces or labour market areas. At this level, the emphasis of rural analysis is on functional relations and on the wider context in which rural development takes place. Regions can usually be characterized only as being more or less rural.

This distinction between two hierarchical levels of territorial detail is central to the conceptual approach. Without this distinction, it would be impossible to accurately describe the complexity of rural problems in their various national and regional contexts. A too narrowly designed scheme for territorial analysis would not **properly reflect the diversity** of analytical and policy perspectives concerning rural development both within and between Member Countries.

Within Member Countries, local and regional administrations perceive rural issues and implement rural policies mostly with reference to the geographic detail at the local community level. National, as well as supra-national administrations often deal with rural issues at the more aggregate regional level (OECD, 1996).¹

Criteria for classification

For the purpose of rural analysis, the geographic units must be grouped into different types. In doing so, it is crucial not to confuse two logical steps:

- Identify the object of observation – rural population and area;
- Describe their status and development.

Since rural is about people and territory, the OECD selected population density, calculated as inhabitants per square kilometre, as the most relevant and practical criterion for identifying **rural at the level of local communities**. Population density reflects characteristics of settlement, distance and even intensity of communication and land use.

Population density is a concept that is both intuitive to users and simple for providers of rural indicators in all Member Countries to calculate. Whatever the specific national or regional contexts may be,

¹ In total, the territory of the 24 OECD Member Countries has been structured into more than 50,000 local communities and over 2,000 regions (OECD, 1996).

rural areas will always have a lower population density than urban areas. Contrary to the population size criterion that is applied in most national definitions, the use of population density as the classification criterion for local community units neutralises some of the distorting effects of the differences in the size of these units.

Population density also has the advantage of being policy neutral. It does not refer to any specific perception of rural problems and potentials. In an OECD-wide context rural cannot automatically be considered as in decline, poor, agriculture-based or peripheral.

Once rural is neutrally defined, the performance of rural areas can be measured by the use of indicators. With descriptions provided by the indicators, it may be of interest to create problem- or policy related - typologies. This should not be confused, however, with the question of what "rural" is. It would be misleading to embed preconceived outcomes of rural analysis in the very definition of rural.

To distinguish between rural and urban communities, not only must the classification criterion be selected but also a quantitative threshold has to be determined. The density threshold was set at 150 inhabitants per square kilometres for Europe, North America, Australia and New Zealand, and 500 inhabitants per square kilometre for Japan. Setting thresholds always involves some arbitrary judgment. The decision to use 150 (in the case of Japan 500) as the dividing line was, however, based on a series of considerations.

The analysis of the national distributions of local communities by density class showed that for most countries changing the threshold to 100 or 200 inhabitants per square kilometre would not lead to major changes in the share of the rural population. Only for a few countries would the ranking by share of rural population be different.

Under the OECD's working definition, rural areas are homogeneous in one dimension: their density is relatively low. This does not mean, of course, that their problems and perspectives are homogeneous. On the contrary, rural areas in the OECD are heterogeneous in several dimensions and it is an important task to understand this diversity further. The differences cannot, however, be explained only by the characteristics of the rural areas themselves. They often result from the type and intensity of relationship the rural communities have to other places in the wider region of which they are a part (OECD, 1996).

III.1.3 European Union

So far the EU does not have a harmonized definition of what is rural. In a Eurostat working paper it was proposed to use population density alone as the distinguishing factor of 'rural' with a threshold of 200 inhabitants per square kilometre (Vidal *et al.*, 2001). Had the OECD definition of 150 inhabitants been used, for example, over fifty per cent of the Nomenclature of Territorial Units for Statistics (Level Three) (NUTS 3) regions would have been excluded from the analysis.² In some respects, therefore, 200 inhabitants per square kilometre represented a compromise between the various definitions of 'rural' and the data available. From 455 NUTS regions at the NUTS 2 or 3-level comprising the entire territory of the EU, 355 were included in this analysis (Vidal *et al.*, 2001). If the 150 inhabitants per square kilometre approach is applied to the resulting 1,214 NUTS 3 regions in the EU 25 and if 2001 census data is mostly used (for 59 NUTS 3 regions 1991 data had to be used), the following result was obtained:

² In principle, all variables available at Eurostat refer to the Nomenclature of Territorial Units for Statistics (NUTS [1995 and 1999]). In order to ensure that regions of comparable size are analysed, the statistical data refers to NUTS 3 level, except for Germany, Belgium and The Netherlands where data is related to NUTS 2 regions (Vidal *et al.*, 2001).

- 385 NUTS 3 regions (32%) are classified as “predominantly rural”;
- 424 NUTS 3 regions (35%) are classified as “significantly rural”;
- 405 NUTS 3 regions (33%) are classified as “predominantly urban” regions.

However, another official EU spatial concept exists for the Labour Force Survey (LFS) and will also be used for the Survey on Income and Living Conditions in the EU (EU-SILC). This concept is called “Degree of urbanization.” It distinguishes between densely, intermediate and thinly populated areas. The different areas are defined as follows:

- a. Densely populated area: contiguous set of local areas (communes) with a population density of at least 500 inhabitants per square kilometre and a total population of 50,000 or more.
- b. Intermediate area: contiguous set of local areas (communes) with a population density of at least 100 inhabitants per square kilometre and a total population of 50,000 or more or being adjacent to a densely populated area.
- c. Thinly populated area: contiguous set of local areas (communes), not belonging to a) or b).

As long as no official definition is available, Eurostat will partly base its work on this concept.

In the Hay report (see Chapter V), it is also suggested that only data at a NUTS 3 level or lower (NUTS4/Local Administrative Unit 1 (LAU 1) or NUTS5/Local Administrative Unit 2 (LAU 2) should be used. Another option is to further categorize into **rural and non-rural NUTS 3 regions**. This could result in even more representative NUTS3 data, when combined with a population density threshold (Hay, 2002). However, it has to be kept in mind that certain urban centres fulfil important functions for their rural hinterland and vice versa. In other words, functional interdependence might be present. Such “country towns” should be covered by the term rural.

In summer 2004, in the context of the preparation of the post 2006 programming period for rural development programmes, the Director General for Agriculture (DG AGRI) made an attempt to use land cover data to distinguish rural from non-rural areas. The importance of agricultural land, forests and natural areas for land use in the EU derives from the fact that combined they constitute 90% of the territory of the EU 25. In order to link to a territorial administrative unit and illustrate the potential policy area in the EU 25, the land cover approach was applied at the ‘cantonal’ (in France) or communal level (LAU 1 or 2, or NUTS 4 and 5). Municipalities which had at least 90% of their territory classified as agricultural, forestry or natural were flagged as rural. Areas with more than 10% of their territory not belonging to agricultural land, forests or natural areas were classified as non-rural or urban municipalities (EC, 2004).

III.1.4 FAO

Rural development has for many years been recognized as an essential element in the eradication of poverty, hunger and malnutrition. The World Conference on Agrarian Reform and Rural Development (WCARRD) held in Rome in 1979 provided the impetus for the work on rural development statistics for the next decade. The World Conference recommended under Section ID (i) dealing with monitoring and evaluation that countries:

- Collect on a regular basis quantitative data and develop appropriate indicators on a number of specific items pertaining to the progress of agrarian reform and rural development;
- Establish benchmarks relating to the indicators for the years around 1980; and report on changes pertaining to these indicators at every other FAO biennial Conference.

The Programme of Action also recommended that the United Nations organizations, with FAO as the lead agency, consider the adoption of specific measures to assist countries in the above-mentioned tasks.

The FAO Statistics Division has started work on reviewing the underlying definitions and statistical frameworks for evaluating and monitoring rural development. Current work is focusing on developing a definition of rurality that provides a better basis on which to develop indicators. Current definitions focus on population related concepts and these definitions are proving to have little value in developing countries where spatial concepts are more important in evaluating and monitoring progress towards the overall goal of measuring rural welfare. In this context, the FAO is developing a rural definition that uses spatial aspects of rurality on a rural - urban continuum concept. Indicators which use distance as a dimension will be evaluated in the context of creating a statistical framework for rural development, i.e. distance to markets, employment, health services, education etc. The FAO rural development statistical framework will include between 15 and 25 indicators.

III.2 Typologies

III.2.1 OECD

A **typology of regions** is based on their degree of rurality according to the share of their population living in rural communities. The typology selected by the OECD follows a two-step procedure. In the first step communes are divided into rural and non-rural depending on their population densities using the figure of 150 inhabitants per square kilometre as the threshold value. The second step qualifies the regions (on NUTS3 level) as follows:

- **Predominantly rural** – more than 50% of the population in rural communities;
- **Significantly rural** – between 15 and 50%;
- **Predominantly urban** – below 15% (OECD, 1994).

Rural areas within each type of region retain the defining characteristics of their rurality – low population density – but they differ with regard to the regional context in which they are placed.

The **criterion** used to create the typology at the regional level is the share of the population of the region living in rural communities, as defined above. Thus, the typology reflects the **degree of rurality** of the whole region (OECD, 1996).

About a third of the OECD population lives in rural communities that cover over 90% of the OECD territory. About a quarter live in predominantly rural regions (OECD, 1994).

Refinements

The geographic scheme shown here can serve as a tool to structure the OECD territory and generate internationally comparable data. No doubt, however, it could and should be refined and improved in the course of future work. The following have already been discussed extensively:

- The interdependence of the size of the geographic units and classification threshold in defining rural;
- The options for alternative or more comprehensive sets of classification criteria;
- The implications of selecting modulated rather than uniform thresholds (OECD, 1996).

The descriptive quality of the results generated by the OECD scheme not only depends on the selection of the classification criteria and thresholds but also on the detail of the territorial grids to which they are applied. With regard to this interdependence in the choice of the geographic units and the thresholds, it was concluded that efforts should be concentrated more on establishing equivalent grids than on modulating thresholds (OECD, 1996).

It is evident that the sub-national units and the characteristics of the territorial grids vary among Member Countries. In an international context, however, the **equivalence of territorial grids** cannot simply be judged on average data for population and area. The choice of grids should always reflect what is considered a reasonable regional or local community context for rural analysis and policy. Not surprisingly, the perception of what might be the appropriate area for territorial units differs considerably between countries like Australia or Canada at the one extreme and most European countries or Japan at the other.

Topography, history and administrative tradition, language or other cultural distinctions have often created territorial entities which are small in area and population but which are nevertheless appropriate units for description of rural problems and policies. In any case, in selecting the territorial grids, a balance must be found between the aim of reflecting diversity and the risk of ignoring important functional relations.

Whereas at the local community level all Member Countries applied a single criterion for the classification of geographic units (**population density**), at the regional level, in addition to the main criterion (**regional share of rural population**), a secondary criterion (**size of the urban center**) was used. Regions with a centre of more than 500,000 inhabitants are usually better characterized as predominantly urbanized. With an urban centre of more than 200,000 inhabitants, it becomes reasonable to classify regions at least into the intermediate category of significantly rural regions.

The additional criterion of urban centre size shifts the distribution by type of region towards the urbanized end. At the other extreme, for regions with a very low density – below ten or even five inhabitants per square kilometre – it might be reasonable to create an additional category or a sub-category of the predominantly rural areas. The characteristics and perspectives of these **very low density regions** - mostly located in Australia, Canada, and parts of the United States but also in the northern parts of Scandinavia - will probably be quite distinct from those of the predominantly rural regions in the EC. In addition, these regions are usually also very remote from any urban agglomerations. Since, this fourth type of region would probably only be relevant for a limited number of Member Countries, it was decided not to introduce it in the tables of this Handbook. Further details could, however, be of interest in future stages of the Project's work.

In the attempt to apply a common approach to all Member Countries, particular attention was paid to the specific conditions of the **Japanese rural areas**. Japanese farm structure, and, as a result, agricultural population density, is very distinct from that of other OECD Member Countries. Japan is not only one of the three OECD countries where average national population density exceeds 300 inhabitants per square kilometre, but, in addition, its settlement pattern is extremely diverse. While the population tends to be concentrated in certain parts of the country, other parts remain unpopulated. Mountains and islands create many natural barriers that limit accessibility. After intensive explorations, it was decided to use the same criteria and methodologies but to apply a higher density threshold of 500 inhabitants per square kilometre (OECD, 1996).

Some results: Rural communities – population and area

About one third of the total OECD population (250 to 300 million people) are living in rural communities, occupying over 90% of the territory. National shares differ, of course, ranging from a rural population of just under 10% in the Netherlands and Belgium to about 60% in Finland, Norway and Turkey while the rural area varies from about 35% to almost 100%. For most Member Countries, the results for rural population and area as defined by the Project differ from those based on national definitions. They are, however, intuitive in an OECD context where international comparability is necessary

In some Member Countries, the rural area is very large but only a small fraction of the population lives there. In others, the rural population is large and more equally distributed. Whereas for the OECD as a whole the ratio of the rural-to-urban population is about 1:3, it is less than 1:2 in Turkey or Norway and as much as 1:5 in New Zealand (OECD, 1996).

Three types of region – degrees of rurality

Table III.1 shows the spatial distribution of total population and area by the three types of regions. On average, one quarter of the OECD population dwell in predominantly rural regions. These are those regions where the majority of people live in rural communities. At the other extreme, about 40% of the OECD population is concentrated in 3% of the territory in predominantly urbanized regions. The remaining one third inhabits the significantly rural, intermediate regions.³ It should be remembered that even in the predominantly urbanized regions a certain share of the population, up to 15%, live in rural communities and that in the predominantly rural regions part of the population live in urban places (OECD, 1996).

Information on the differences in the territorial distribution of population between the three types of region provides another insight into the spatial organization of Member Countries. The graphical presentation in the form of a triangle in Figure III.1 gives an overall impression of the national differences in the degree of rurality at the regional level.

For many OECD countries - in particular the Netherlands, Belgium, Germany, the United Kingdom and Switzerland - the population share increases from predominantly rural to predominantly urbanized regions. For Austria and the Scandinavian countries, however, the opposite is the case. Here, less than a quarter of the population live in predominantly urbanized regions. In other Member Countries - France and Spain, for example - the largest share of population is in the intermediate, significantly rural regions. Conversely, Ireland, Iceland, Greece and Portugal and also Canada and Australia have a dual structure with a greater share of their population inhabiting the rural and urban extremes and a smaller fraction living in the intermediate regions.

Even this simple comparison reveals certain commonalities and differences in settlement pattern amongst Member Countries. It facilitates a better understanding of their perceptions of rural and their respective policy approaches (OECD, 1996).

³ The OECD now uses the term “intermediate” instead of “significantly rural”.

Table III.1
Typology of regions by degree of rurality:
Shares of population and area in national totals*

| Country | Population | | | Area | | |
|----------------|-----------------------------|-----------------------------|---------------------------------|-----------------------------|-----------------------------|---------------------------------|
| | Predominantly rural regions | Significantly rural regions | Predominantly urbanized regions | Predominantly rural regions | Significantly rural regions | Predominantly urbanized regions |
| | National total = 100 | | | National total = 100 | | |
| Australia | 23 | 22 | 55 | 92 | 8 | 0 |
| Austria | 40 | 39 | 22 | 71 | 28 | 1 |
| Belgium | 2 | 17 | 81 | 15 | 28 | 57 |
| Canada | 33 | 23 | 44 | 95 | 4 | 1 |
| Denmark | 39 | 38 | 23 | 68 | 31 | 1 |
| Finland | 47 | 32 | 21 | 83 | 16 | 1 |
| France | 30 | 41 | 29 | 61 | 34 | 5 |
| Germany | 8 | 26 | 66 | 19 | 39 | 42 |
| Greece | 47 | 18 | 35 | 81 | 16 | 3 |
| Iceland | 35 | 8 | 57 | 75 | 24 | 1 |
| Ireland | 62 | - | 38 | 91 | - | 9 |
| Italy | 9 | 44 | 47 | 26 | 54 | 20 |
| Japan | 23 | 34 | 43 | 59 | 33 | 8 |
| Luxembourg | - | 100 | - | - | 100 | - |
| Netherlands | - | 15 | 85 | - | 34 | 66 |
| New Zealand | - | 61 | 39 | - | 95 | 5 |
| Norway | 51 | 38 | 11 | 84 | 16 | 0 |
| Portugal | 35 | 24 | 41 | 81 | 13 | 6 |
| Spain | 19 | 46 | 35 | 55 | 39 | 6 |
| Sweden | 49 | 32 | 19 | 88 | 10 | 2 |
| Switzerland | 14 | 25 | 61 | 54 | 29 | 17 |
| Turkey | 58 | 30 | 12 | 82 | 17 | 1 |
| United Kingdom | 15 | 17 | 68 | 52 | 22 | 26 |
| United States | 36 | 34 | 30 | 85 | 10 | 5 |
| EC average | 17 | 31 | 52 | 49 | 34 | 16 |
| OECD average** | 28 | 32 | 40 | 87 | 10 | 3 |

Source: OECD. "Creating rural indicators for shaping territorial policy". Paris, 1996.

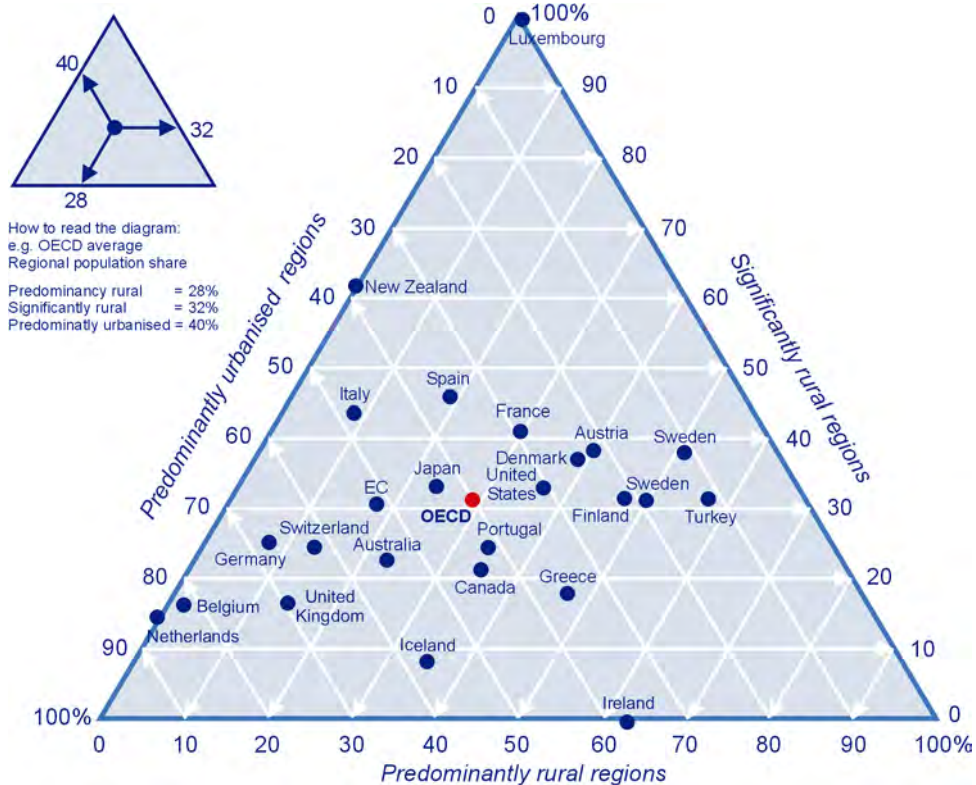
"Rural" communities = local communities with population density below 150 inhab./km², 500 inhab./km² in the case of Japan. For explanation see Annex 2.

Typology of regions according to the share of rural population: "predominantly rural" = more than 50%; "significantly rural" = 15-50%; "predominantly urbanized" = below 15%.

* Calculations based on most recent data available.

** Japan not included; see note above.

Figure III.1
Distribution of population by type of region
(Regional populations share in national totals,%)



Source: OECD. "Creating rural indicators for shaping territorial policy". Paris, 1996.

Two-level approach – an explanation

Since the use of two levels of geographic hierarchy is central to the analytical concept, it seems appropriate to explain in further detail the importance of taking such an approach.

The **appropriate level for territorial analysis** always depends on the question under review. If, for example, territorial differences in employment opportunities are to be assessed from an economic policy perspective, information should be made available at the regional level. In fact, unemployment rates are usually reported at this level rather than at the local community level. The implicit premise is that, within reasonable distances, workers should be prepared to commute between their place of residence and their place of work. This may imply commuting from a rural to an urban area.

It would not be a realistic rural policy objective to provide jobs for rural citizens only in their own, or even only in rural communities. A reasonable aim would be for rural citizens to find jobs within an acceptable commuting distance from where they live. The place of work could well be urban but it should be within the same region or labour market area. The distinction between three types of region, however, allows an analysis of job opportunities under the different regional conditions.

The fact that unemployment rates at the local community level are usually not considered as an appropriate measure for judging economic policy performance does not, of course, mean that such figures

would not be of interest in a different policy context. From the perspective of social policy, for example, it might be relevant to know whether there are rural/urban differences in crime and suicide rates and to what extent these rates correlate with unemployment.

A **numerical example** may help to underline the advantages, or even the need for, a two level approach. In Germany, the total population grew by 1.7% from 1980 to 1990. At the local community level, when growth is measured for both the total rural and the total urban populations, the picture looks rather bad for rural; the growth rate for the urban population was almost double that for the rural population (1.9% cent as compared with 1.0%). At the regional level, however, it was the predominantly rural regions, which had the highest increase (2.2%), much higher than that in the significantly rural regions (0.6%) and even slightly larger than in the predominantly urbanized regions (2.1%) (OECD, 1996).

This example shows clearly that the results of rural analysis and the consequent policy conclusions can be quite different, depending on the choice of the territorial level at which rural conditions are analysed. Taking the example even further, both aggregated views may be misleading. Only by pursuing the analysis at both levels, thus allowing the six different types of area to be distinguished, can a clearer picture be gained.

A closer look shows that the good performance of the predominantly rural regions is due to a very high growth rate in their urban communities; at 6.0 per cent they had by far the highest increase in population. But also the rural communities in the predominantly rural regions did better (1.5%) than the average rural communities (1.0 %) and almost attained the average growth rate of the national total (1.7 %). The fastest growing rural communities were those in the predominantly urbanized regions (1.8 %) almost reaching the growth rate of the urban communities in those regions (2.2 %). The stagnating rural communities were in fact those in the intermediate, significantly rural regions (0.2 %). Within these regions, growth in the urban communities was not much better either (0.8 %) (OECD, 1996).

These few results generated for only one simple but important indicator - population change - may give an idea of the complexity of rural development issues and of the need for different strategies for different rural areas, depending on their specific regional contexts (OECD, 1996).

III.2.2 European Union

So far no official typology for the European Union exists despite several attempts to create one in the past - for example, adapting the OECD typology for certain purposes (Vidal *et al.*, 2001).

In the *Proposal on Agri-Environmental Indicators* (PAIS) report (see Chapter V), it is said that if one wants to move away from typologies based on spatial criteria, there are more sophisticated rural typologies based on structural approaches that take into account a variety of characteristics to describe rural areas.⁴ A number of multivariate analyses of a broad range of socio-economic indicator variables have been used to develop more sophisticated definitions of rurality at national and European levels. Reference is also made to a multivariate index of rurality, based primarily on Census data (Bryden, 2001).

Similar structural approaches to rural-urban classifications have been used for targeting resources to rural areas. In demarcating areas for Objective 2 Structural Fund assistance, for example, **rural areas are**

⁴ The overall objective of the PAIS project is to contribute to the on-going development of Agri-Environmental indicators of the European Commission, as outlined in COM (2000) 20 and COM (2001) 144. A specific focus of the PAIS project is directed at the following three indicator themes: Landscapes, Agricultural Practices, and Rural Development.

defined by either (low) population density or a percentage share of the workforce employed in agriculture (Bryden, 2001).

DG AGRI tried recently to use the OECD population density method and a land cover method (using Coordination of Information on the Environment (CORINE)) to come up with a first proposal combining the two approaches. However, for the time being this has to be seen as a pure academic exercise, which probably will be continued (Vard *et al.*, 2005).

The relationships between rural and urban areas extend beyond labour market flows however, as explored by the Study Programme on European Spatial Planning (SPESP). They include home-work relationships, rural areas as urban consumption landscapes, rural areas as suppliers of natural resources for urban areas and central place dynamics. The SPESP identifies **a six-fold typology of European territories** based on population statistics and takes its point of departure from urban and rural relationships, although it utilizes normative regions. Using NUTS II and III data, territories are distinguished on the basis of urbanization rate, rural population density, the degree of contrast in the distribution of settlement size, average distance to urban settlement, the primacy of the largest city and the size of the largest centre. The study stresses that more refined typologies are needed (NUTS IV and V) to be relevant for the analysis of sparsely populated areas where relationships are formed between small and medium-sized towns and rural areas (Bryden, 2001).

III.3 Requirements of indicators and their assessment

III.3.1 Introduction

Indicators are statistical variables that help to transform data into relevant information. Indicators have meaning within defined conceptual frameworks and for specific analytical or administrative purposes. To provide meaningful information, they have to be interpreted in the context of these frameworks and purposes.

Indicators can be powerful tools for analysis, planning and monitoring if the trade-off between their strength - reduction of complexity - and their weakness - (over-)simplification - is carefully considered. Thorough interpretation, therefore, is a necessary prerequisite to any reasonable indicator use. Often indicators can be interpreted adequately only as part of a more comprehensive set of indicators.

Without explicit reference to a specific analytical task or policy objective, indicators are just statistical data or variables that provide only potentially useful information. The underlying logic relating certain statistical data to specified purposes must be based, at the very least, on a hypothesis, if not on a more elaborate theory or model. In fact, indicators can often be seen as a first attempt to structure complex interrelationships that may, in the end, help to formulate more sophisticated theories (OECD, 1996).

Indicators on rural development need to be based on **(1) published statistics** that are **(2) consistently collected** in **(3) comparable areas**, using the **(4) same unit** of measurement and based on a **(5) clear definition**. Indicators should also be sensitive to changes and trends over time that can inform future policy direction. To meet these demands, descriptive indicators for rural development often involve re-valuing well-known concepts and data sets in the rural policy context. In some cases, this process is accompanied by a definition of 'rural' (Bryden, 2001).

In particular the following three questions should be addressed in the selection process:

- What are the basic requirements for the construction of any indicator?
- What are the specific rural development dimensions that have to be captured by rural indicators?
- What are the purposes of collecting and providing international indicators? (OECD, 1996).

In this context particular attention must be paid to the quality of statistical data and their sources, availability of metadata and suitability for international benchmarking

III.3.2 OECD

The OECD has formulated the following requirements on rural indicators:

- **Communication:** OECD rural indicators shall enable Member Countries to better communicate and discuss their national rural development problems and prospects.
- **Comparison:** OECD rural indicators shall facilitate the identification among Member Countries, of similarities and differences in rural development based on comparable statistics, so that a fruitful exchange of views and experience is possible.
- **Cooperation:** OECD rural indicators may even encourage Member Countries to cooperate in the design and assessment of their rural, development strategies.

The Project on Rural Indicators will provide information on sub-national (rural) areas in a multinational (OECD) context. It aims to establish a consistent information basis for systematic general description as well as for cross-national analysis of rural conditions and trends, which form the background for the design, implementation and impact of rural policies in OECD Member Countries.

OECD indicators should not be considered as imposing uniform concepts at the national level but rather as helping to provide a common language that allows international communication of similarities and differences. To meet this task:

- The statistics on which the calculation of indicators is based must be harmonized and comparable to the degree needed to make international communication meaningful.
- The results generated from these sources should be sufficiently differentiated and specific to the degree that they adequately reflect the whole range of territorial variety and distinctiveness.

From the above considerations the OECD derived three basic principles, which are important for any attempt to develop and operationalise a set of indicators:

- **Relevance:** To be relevant, indicators must serve a **clearly defined purpose**. Thus, the analytical and/or policy objectives for developing and using the indicators should be specified. Consideration of the relevance of indicators always implies an identification of their potential users. For those indicators that are designed to shape, implement or monitor policies, relevance also implies taking into account the administrative context, whether (inter-)national, regional or local, in which they can usefully be interpreted.

- **Reliability:** To be reliable, indicators must have a **sound scientific basis**. The reliability of indicators and their underlying analytical concepts depends on the quality of the theoretical foundations or models on which they are based: Validity of measurement must be ensured. As far as possible, the explanatory power of the indicator should be intuitive to potential users and not only to trained specialists in the field. This is more likely to be achieved if the measurement is as direct and close as possible to the observed phenomenon.
- **Realizability:** To be realizable, indicators must **be built on available statistical data**. Availability depends on the degree to which the analytical concept can be operationalized, on the type of data source, and on the possibility of assembling data within reasonable limits of time and resources. Realizability thus focuses on the producers of indicators and on the feasibility of data collection and processing (OECD, 1996).

III.3.3 European Union

In the PAIS report a set of criteria very similar to that of the OECD is used for assessing indicators. It can be summarized as follows:

- **Sensitivity:** An indicator should be able to respond to a broad range of conditions within an appropriate time scale and geographic scale.
- **Analytical Soundness:** An indicator should be based on sound scientific methods.
- **Comprehensibility:** An indicator should be in a format that the target audience can understand; for example it should be non-technical if the target audience is the general public.
- **Relevance:** The indicator should be relevant to the desired goal, issues or mission. This is particularly the case for policy related indicators. For descriptive indicators the indicator is assessed in the particular light of the rural development issue to be addressed.
- **Reference value:** The indicator should have a guidance level or benchmark against which to measure change over time.
- **Generality:** The applicability of the indicator to the European level.
- **Data availability:** Indication of the availability of the data at the European level.
- **Conceptual Requirements:** Indication of how the conceptual basis of the indicator may need to be developed (Bryden, 2001).

Eurostat will exploit all available data sources and existing surveys. At the moment the focus is on exploiting the Labour Force Survey. It is also proposed to add questions and the Labour Force Survey coding to existing surveys.

Another approach to be discussed with EU Member States is to build up a data network within Member States. Member States should establish either a database for a number of variables (to be defined) or link existing databases in order to be able to extract the necessary data on NUTS 5 (LAU 2) level, if possible. The sources of these data are administrative registers or census data. This would allow Eurostat to react in a flexible manner, once an official harmonized definition for “rural areas” is agreed.

III.3.4 FAO

The World Conference on Agrarian Reform and Rural Development (WCARRD) held in Rome in 1979. The following properties were considered necessary for the selection of socio-economic indicators for the purpose of monitoring activities:

- Relevant;
- Valid;
- Objective and verifiable;
- Sensitive;
- Feasible;
- Timely; and
- Simple.

If an indicator was weak in one of these properties a secondary indicator was also included.

III.4 Themes and set of indicators

III.4.1 OECD

If the selection of rural indicators must be guided in part by the principles applicable to any set of indicators, it must be driven even more by characteristics that are specific to rural development. There are three basic dimensions of rural development, which any reasonable assessment of rural conditions and trends must take into account:

- ***Territory***: Rural development is a **spatial concept**. It deals with territorial differences in problems and perspectives, options and opportunities. Such differences can be considered positively (diversity) or negatively (disparities). In either case, the territorial distribution determines the overall performance and viability of economic, social and environmental systems as well as the effectiveness and efficiency of related policies.
- ***Themes***: Rural development is a **multisectoral concept**. It is concerned with a wide range of demographic, economic, social and environmental issues. It stresses the importance of a cross-sectoral perspective and often provides an appropriate framework for the horizontal integration of various activities and policies.
- ***Time***: Rural development is a **dynamic concept**. It is concerned not with the mere passing of time but with concrete, historical dynamics which are reflected in changing technological options, economic structures, or social attitudes and perceptions.

Any set of rural indicators, therefore, has to provide information on a variety of economic and societal subjects. It has to do so in a territorially differentiated manner and it should be capable of reflecting changes over time (OECD, 1996).

Based on the above geographical definitions, the set of basic rural indicators is classified into four main themes, see Figure III.2.

For each region a “**development dimension**” can be defined. Each region can then be classified as a **dynamic region** or a **lagging region**, implying performance above and below average, respectively (OECD, 1996).

Figure III.2
OECD's basic rural development indicators classified by themes

| Population and migration | Social well-being and equity |
|---|---------------------------------------|
| Density | Income |
| Change | Consumption |
| Structure | Housing |
| Households | Health |
| Communities | Safety |
| | Culture and recreation |
| | Communications |
| | |
| Economic structure and performance | Environment and sustainability |
| | |
| Labour force | Topography and climate |
| Employment | Land use and its change |
| Employment and enterprise structure | Habitants and species |
| Sectoral share | Soils and water |
| Productivity | Air quality |
| Investment | |

Source: OECD (1994). "Territorial Indicators of Employment. Focusing on Rural Development", OECD Paris, 1996.

III.4.2 European Union

In the PAIS report the following key rural development issues are defined:

- **Social well-being – Quality of life:** Environmental features, service availability, housing, safety, income and deprivation.
- **Economic structure:**
 - General:* Sectoral shares, enterprise, investment, labour force attributes, performance and competitiveness, innovation, business infrastructure.
 - Primary sector activity:*
 - Multifunctionality of agriculture, diversification and productivity, financial resources.
 - Tourism sector activity:*
 - Physical features of consumption, physical features of supply, employment features and other monetary features.
- **Demographics:** Population density, change and structures, commuting patterns, cultural issues, educational attainment (Bryden, 2001).

In the Hay report (2002), the main aim of which was to characterize the spatial components of rural areas within Europe through the development of a set of indicators, the following ten general themes were proposed:

- Demographic characteristics and changes;
- Employment and human capital;
- Welfare, income and quality of life;
- Agriculture and structural change;
- Multifunctionality of agriculture;
- Rural economic diversification;
- Innovation and enterprise;
- Policy;
- Rural environment and landscapes;
- Infrastructure and peripherality.

Based on the experience from the Hay report and the PAIS project, Eurostat will launch a data collection exercise involving, if possible, all Member States in order to collect data on the following themes:

- Demography - Migration;
- Economy - Human capital;
- Economic structure and performance (primary sector);
- Accessibility to services - Infrastructure;
- Social well-being.

In total, data for about 25 indicators will be collected from Member States in the first phase. It is planned to enrich the list of indicators in further phases covering topics like environment, landscape and the competitiveness of agriculture.

III.4.3 The World Bank

Rural poverty is a pervasive problem in many developing countries. There is therefore a need to systematically monitor its reduction. To this end, the World Bank uses a core set of indicators that captures the myriad of aspects of rural development and poverty. This template of indicators is intended to be used by policymakers in assessing the performance of their country's rural development programs (see Annex 5 for the core set of indicators). Unfortunately, disaggregated urban-rural data are rarely available. In most cases national aggregated data are used.

In developing countries some 70% of the poor reside in rural areas. Therefore, a country in this group cannot expect to raise itself out of poverty without specifically addressing poverty in rural areas (World Bank, 2000).

The World Bank has identified a number of key factors, which drive improvements in rural well-being, and grouped them into the following categories:

1. *Improvement in the rural economy.* This necessitates improving agriculture productivity, fostering non-farm activities, expanding the market base, fostering the private sector, and developing rural infrastructure.
2. *Sustainable natural resource base.* In most countries, rural economies are dominated by agricultural and natural resource-based activities. Many producers are already concerned about the deteriorating land and water base in their areas, and public awareness of

environmental issues adds urgency to the search for solutions to conservation issues. There is therefore a general consensus that unless the natural resource-base is managed in a manner that ensures its continued productivity and environmental quality, growth in the rural economy will not be sustainable.

3. *Fostering an enabling environment for broad-based and sustainable rural growth.* An appropriate overall macroeconomic policy and a supportive institutional framework are essential to growth and poverty reduction, and for the success of development activities in rural areas. Policy frameworks and good governance that enable rural people to effectively influence public decisions that affect them are needed. Public investments are also more effective if they are provided in a decentralized and participatory way.
4. *Improving social well-being, managing and mitigating risk, and reducing vulnerability.* To improve social well-being and minimize the vulnerability of the rural poor, developing countries should endeavour to improve access to nutrition and health services, help mitigate the effects of HIV/AIDS, increase access to rural education and improve its quality, and help improve food security for the rural poor. To achieve these objectives and foster broad-based growth and sustainable management of natural resources, it is essential to promote inclusiveness and remove barriers that exclude individuals on the basis of gender or ethnicity from economic and social opportunities.

In developing countries, it is expected that agriculture will remain the foundation of the rural economy for the foreseeable future. In sub-Saharan Africa, for instance, agriculture accounts for 30% of GDP, 40% of exports, and 70% of employment (World Bank, 2000). Of China's total population of 1,276 million people, almost 800 million, or 62.3%, are living in rural areas. The first Chinese Agriculture Census showed that as many as 34% of the 230 million rural households were engaged in both agricultural and non-agricultural activities.

Improved productivity in the agriculture sector is therefore essential for economic growth and for reducing poverty whether it is China or sub-Saharan Africa. However, this cannot be done by agriculture alone, which, in particular, the Chinese experience has shown. It has to go hand in hand with important contributions from non-agriculture activities and non-farm rural employment opportunities (Zhiqian, 2002; World Bank, 2000).

In 2001, the per capita net income of Chinese rural households was 2,366 yuan, which was less than one quarter of the urban counterpart. Looking at the expenditure side, rural households accounted for only 25% of total retail sales. On the other hand, it is worth noting the tremendous success in reducing poverty in China - from some 250 million individuals living in poverty to about 30 million in just a few decades.

In China, **agriculture**, **rural development** and **rural residence** are considered three dimensions of an **integrated rural system**, each with a set of core indicators being monitored.

Rural areas in China are defined as a residual to urban areas, which are defined as:

- Cities, where county level government (or higher administrative level) is located, districts directly under municipal government and with population density more than 1500 persons per square kilometre and the extension areas of districts directly under municipal government; and
- Small towns and special areas with non-agricultural population (more than 3,000 persons), including industrial and mining areas and development zones (Zhiqian, 2002).

Data issues

The World Bank recognizes that there are considerable data problems not only with the quality and reliability of rural data in many developing countries but also with the non-existence of vital data. Even when data are collected, most are aggregated at the national level with no possibility of breaking this down to urban-rural and regional levels.

The World Bank also stresses that improved monitoring of rural development will require a significant effort in data collection on a long-term basis. It advises against ad hoc surveys because these do not provide consistent coverage of the different aspects of rural development. Instead the World Bank proposes comprehensive household surveys and extended coverage of the agricultural censuses, focusing on family status, access to services, economic activities, production practices, expenditures and social activity. Such census should be complemented by regular panel surveys using sub-samples (World Bank, 2000).

III.4.4 FAO

Following the WCARRD, the FAO produced Guidelines on Socio-Economic Indicators for Monitoring and Evaluating Agrarian Reform and Rural Development (1988). The guidelines were the result of extensive collaborative work by UN agencies and countries. The provisional list of indicators was made available to countries for the preparation of their reports on progress in agrarian reform and rural development to the biennial FAO Conferences in 1983 and 1987. The final guidelines were then submitted for comments to the UN agencies through members of the ACC Task Force on Rural Development (1984).

The WCARRD Programme of Action stated that the primary objectives of rural development are the eradication of poverty, hunger and malnutrition. Other contributory objectives include growth with equity, national self-reliance (especially in food), ecological harmony and the conservation of finite resources.

Indicators covering the following goals and areas of concern were selected (see Chapter V for full list):

Poverty alleviation with equity:

- Income/consumption;
- Nutrition;
- Health;
- Education;
- Housing;
- Access to community services;
- Access to land, water and other natural resources;
- Access to inputs, markets and services;
- Development of non-farm rural activities;
- Education, training and extension;
- Growth.

The primary indicators are grouped according to WCARRD goals and areas of concern. Notable omissions from the list of primary indicators are those related to people's participation, including women's participation, as they had not been fully developed at that time. It was noted that not all primary indicators would be relevant or meaningful to a particular country so that countries would have to choose among them and substitute or supplement them as necessary.

A selection was made from the primary indicators of a smaller number of “core indicators” that were considered crucial for monitoring poverty alleviation, relevant to most countries and feasible from the data collection point of view. The “core indicators” cover the levels of living items, including access to essential social services, as well as other indicators pertinent to rural conditions of life. On these indicators, countries were requested to establish benchmarks and report changes to the FAO Conference.

During the 1990's, the FAO Conference discontinued the requirement of countries to report on the WCARRD indicators on a biennial basis. The focus shifted to reporting on under-nourishment. Countries however continue to use many of the indicators established in the WCARRD framework.

In 2003, the United Nations Economic and Social Council – High-level segment focused on rural development. The Report of the Secretary-General, “Promoting an integrated approach to rural development in developing countries for poverty eradication and sustainable development” (2003) provides detailed analysis of the issues facing developing countries. In particular it highlights the following elements of an integrated approach to rural development:

- Strengthening the rural economy;
- Social development;
- Sustainable use of natural resources and protection of the environment;
- Empowerment of the poor as a strategy for integrated rural development.

In summary the report states: *“Accelerated rural development is essential to achieve the internationally agreed development goals, including the millennium development goals. The present report provides policy recommendations on ways to promote an integrated approach to rural development, encompassing the economic, social and environmental dimensions, with a number of mutually reinforcing policies and programmes that address a broad range of issues related to rural development.”*

III.5 Indicators – use and misuse⁵

There is no general definition of what constitutes an indicator as a special subset of statistical results in any official document at international level that would be applicable to all areas of official statistics. However, the term “indicator” is used with increasing frequency. One reason may be that the terms “statistics” or “statistical results” do not attract as much attention from users and the media as the term “indicator.” The implicit undertone of the term indicator is that it is more than an “ordinary statistic,” such as the size of the population or tonnes of steel produced, and as a result indicators deserve more attention than ordinary statistics.

There are several ways of approaching and defining indicators. The **first** and most evident approach to indicators is that they are simply the combination, through a defined algorithm, of two (or more) statistical results (“numbers”) to form a new derived measure. The simplest form is through a numerator and denominator, e.g. as per capita ratios or percentages or other forms of shares. The two elements may be taken from the same statistics (e.g. as for growth rates), or from two different statistics. The added element of the derived measure, as compared to simply looking at the numerator and denominator separately, is the added degree of comparability; the derived measure eliminates the size effect of the denominator. This is an especially desirable property when comparing across regions or between countries, but it is also important for comparisons over time in economic statistics. With this wide characterization of an indicator, all comparisons over time based on simple indices (with a base period value as denominator) would be included

⁵ This section is taken from Brügger (2004).

under this concept. There are more elaborate forms of algorithms to compile derived measures in official statistics, which try to eliminate effects other than size. Examples are age standardisation, constant price aggregates, or seasonal adjustments.

A **second** approach to the term indicator uses a normative interpretation, with the possibility of establishing rankings or league tables if applied to comparisons of regions, countries, or other appropriate units, for the same period.⁶ Indicators are those official statistics that allow a statement of “better”/“worse” (including a quantification of the difference), both in comparisons over time and across space. To be an indicator in the first definition is a prerequisite for normative interpretation; however, not all indicators of the first definition lend themselves to a normative interpretation.

While it is important that all users of official statistics, irrespective of their stand on certain policies and priorities, accept them as authoritative measures of reality, this is particularly important for normative indicators. This is the true meaning of impartiality. This principle is also the reason why official statisticians should avoid policy prescriptive comments when disseminating normative indicators.

Normative indicators lend themselves to transformation into rankings or league tables. Opinions differ whether statistical offices, and statistical services of international organizations, should publish rankings, as opposed to a more neutral sequence of tables. Fundamentally, if the indicator is sufficiently robust, and if the data sources are of sufficient quality and comparability, there is nothing that prohibits ranking. Ranking is even used for statistics other than normative indicators, with the purpose of identifying countries or regions that are “outliers” in a certain way and where the ranking deserves further explanation and analysis.

A **third** approach concerns those indicators that cover only a part of a target concept, which remains unmeasured within the framework of official statistics. This type of indicator can be found in areas that lack a common measurement unit such as money in economic statistics, or joules in energy statistics. Many statistical areas lack a common unit of measurement. These include social statistics (for example, health, education, quality of work or crime), environmental statistics and some new phenomena covering aspects of both economic and social statistics such as globalization, competitiveness and the information society. In this approach, the term indicator stands for something broader than what it actually measures.

A **fourth** approach concerns the so-called **synthetic indicators**. These are composite measures of individual indicators designed to give an easy overview of a complex array of indicators or statistics. Different forms and techniques of “weighting” the individual series are used.⁷ The need for weighting arises from the fact that either the components are not expressed in the same measurement unit, or refer to different items where there is no obvious method of aggregation (such as prices for different commodities). While there has been some discussion about synthetic indicators in meetings of official statistics, the issue of whether, or under what conditions, such indicators are compatible with the framework of official statistics has not been given much attention.

There are no evaluative problems with synthetic indicators that use **empirical weights**, i.e. weights based on official statistics. Price and volume indices are prime examples of such indicators that are widely used in official statistics. If the single components are themselves produced according to the framework of

⁶ The World Competitiveness Yearbook (WCY) ranks and analyses the ability of nations to create and maintain an environment in which enterprises can compete (Source: <http://www02.imd.ch/wcc/methodology/>).

⁷ An obvious example is found in the annual **Human Development Reports** (HDR), which was first launched in 1990. Since the first Report, four new composite indices for human development have been developed — the Human Development Index, the Gender-related Development Index, the Gender Empowerment Measure, and the Human Poverty Index (Source: <http://hdr.undp.org/aboutus/>).

official statistics, the added step of synthesizing them through empirical weighting derived from official statistics is also within this frame, and can add considerable value to the results.

The issue is entirely different with synthetic indicators based on **subjective weights**, be they determined by policymakers, specific users, or based on expert opinions about importance. Many statisticians argue that such subjective weights are not compatible with the principle of impartiality. Official statisticians should therefore not publish such synthetic indicators under the guise of official statistics, even when the individual components are fully part of those official statistics. Aggregating with no assignation of weights is tantamount to giving equal weights to every component, but this equal weighting remains subjective unless it has an empirical or conceptual foundation.

Subjective weighting is especially problematic for international comparisons, because different countries may prefer different weighting schemes, and it is hard to see ways in which an agreement between countries on subjective weights may be reached. In practice, the “experts” from the secretariats of international organizations will impose their own subjective weights.⁸

Apart from their use in resource allocation, the main purpose of such synthetic indicators seems to be to allow unequivocal rankings, given that the separate rankings of each component may lead to different “league tables.” In addition, some of these composite indicators are given bombastic labels. However, rankings produced by official statistics are not analogous to a sporting contest. A synthetic indicator implies the possibility of substitution, i.e. a “bad” ranking in one indicator can be offset by a “good” ranking in another component. In sport, this is indeed possible, but it is unlikely that we would see this substitution between the weakness of a country or region in one aspect, and the strength in another (unless these aspects are part of a common unit of measurement to be found in real life such as in economics). For national policy purposes, it is more important to identify where the strengths and weaknesses of a given country are; averaging them artificially hides this message. In contrast to other forms of aggregates, the simplicity of a single aggregate in this form of indicators is a smokescreen that dilutes the quality of the hard facts of the components by mixing them together with arbitrary subjective valuations.

It is recommended that official statisticians withstand pressures for endorsing synthetic indicators based on subjective weights, and make the components visible. If they are used, the limits of aggregation that are permitted within official statistics have to be made absolutely clear.

Synthetic indicators have become very popular outside official statistics, for comparing countries on corruption, competitiveness, etc., with some components of synthetic indicators being subjective. Official statisticians would undermine the principle of impartiality if they felt pressured by this competition to embark on the same approach.

⁸ A good example of this issue is Transparency International’s annual “Global Corruption Reports,” which contains a number of Corruption Surveys and Indices: The TI Corruption Perceptions Index (CPI), which ranks countries in terms of experts’ perception of corruption; The Global Corruption Barometer is a survey that assesses general public attitudes towards, and experience of, corruption in dozens of countries around the world; and The TI Bribe Payers Survey evaluates the supply side of corruption - the propensity of firms from industrialized countries to use bribes in foreign countries. (Source: http://www.transparency.org/about_ti/annual_rep/index.html).

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IV INVENTORY OF NATIONAL APPROACHES TO RURAL DEVELOPMENT STATISTICS

IV.1 Introduction

The need for a new set of statistics or for more detailed information on a specific area generally arises from a shift in policy focus. Rural development statistics are no exception. Over recent years, rural development has become an important policy issue in most countries. Rural areas have suffered employment and population losses. With gains in productivity, fewer and fewer people were necessary to cultivate the land and rear animals. In many rural areas, the number of jobs lost in the agricultural industry has exceeded the number of jobs created in other industries, which led many rural residents to leave the countryside and look for jobs in the towns. Migration from the country into the towns gave rise to new economic and social problems both in urban and rural areas. Creating a rural environment that attracts people and businesses helps to solve problems in rural areas and helps to slow down or stop the continuing urbanization of most countries.

In developed countries, the problems in rural areas are increasingly not directly related to agriculture. Especially in countries where agriculture only accounts for a small percentage of both production and employment in rural areas, the main focus of rural policy has started to move away from agriculture towards targeting the wider rural economy and population. On the other hand, in most of the countries in the Commonwealth of Independent States (CIS) and developing countries, rural development has emerged as a distinctive field of policy, practice and research, resulting from a general disenchantment with previous approaches to development planning at national and sectoral levels. This new approach is defined by its concern with equity objectives of various kinds, in the sense that it focuses particularly on poverty and inequality. The term 'rural development' refers to a distinct approach which is at once broader and more specific than 'agricultural development'. It is broader because it entails much more than the development of agricultural production for it is, in fact, a distinct approach to the development of the economy as a whole (Harriss, 1982). The policy issues and their instruments, and hence the indicators for their monitoring, may therefore differ considerably between developed countries, on the one hand, and CIS and developing countries, on the other. This is important to note when discussing an international core set of indicators to monitor rural development.

This shift in policy focus has been recognized in some countries in the name of the departments/ministries. Examples are the Department of Environment, Food and Rural Affairs in the United Kingdom, the Ministry of Agriculture, Rural Development and Fisheries in Portugal, the Ministry of Agriculture and Rural Development in Israel and the Ministry of Agriculture and Regional Development in Hungary. In other countries, the issues of rural development have been added to the responsibility of the ministry that deals with agricultural policy without a change in name. For example, the United States Department of Agriculture covers rural development issues. Alternatively, rural development can come under the responsibility of ministries without a link to agriculture, such as the Ministry of the Interior and Health in Denmark or the Ministry of Industry, Employment and Communication in Sweden or Ministries dedicated to dealing with regional issues such as the Ministry for Regional Development and Regional Authorities in the Czech Republic.

In recent years, international organizations have also taken up work in the area of rural development and its related statistics. Eurostat has recently set up a rural development statistics unit within the directorate that also covers agricultural, food and environmental statistics. In the OECD, rural development statistics are covered by the Territorial Indicators Group. Within the FAO, rural development falls mainly within the

responsibility of the Sustainable Development Section. However, within the FAO, work on rural development statistics has been carried out at least since the World Conference on Agrarian Reform and Rural Development in 1979. Ten year later, the FAO published “Guidelines on Socio-Economic Indicators for Monitoring and Evaluating Agrarian Reform and Rural Development” which, as the title suggests, deals with both agricultural and rural indicators (FAO, 1988).

Regardless of where the responsibilities lie, it has been widely recognized that in developed countries rural development statistics need to look far beyond core agriculture. Rural development statistics have to cover not only the wider economic conditions in rural areas but also social and environmental conditions (see for example Hill, 2002). Getting this wider coverage of rural development statistics right is one of the challenges for statisticians working on the creation of a system of rural development statistics.

IV.2 Inventory of national rural development statistics

In the spring of 2003, the UNECE started a project aimed at establishing an inventory on rural development statistics in Member Countries of the UNECE and OECD. After initial research on the Internet, a questionnaire was sent out to 12 countries (Canada, Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Romania, Sweden, United Kingdom and the United States). A summary of the replies of 11 of these countries was presented at the Meeting on Food and Agricultural Statistics, which was held in Geneva in July 2003.

At this meeting, participants pointed out that rural development statistics should be seen in the larger framework of regional/territorial statistics as demand for statistics on small geographic areas increases. The demand is not limited to rural areas. A system based on statistics for small geographic areas should be built-up which would be flexible and accommodate different definitions and different classifications.

During the discussion, a requirement to better understand policy needs emerged. Rural development statistics provide the evidence-base for rural development policy and therefore policy needs should be at the centre of statisticians’ preoccupations. It was mentioned that with the decoupling of subsidies it is likely that there will be more demand for rural development statistics. It is clear that rural development is much broader than agriculture and that a statistical approach needs to cut across traditional statistical categories of which agriculture is one. The possibility was raised that agricultural statisticians could coordinate rural development statistics, building on their knowledge of agricultural statistics.

Participants also discussed the usefulness of a standard definition of rural. It was noted that it might be difficult and/or not appropriate to have a standard definition due to the differences between countries. Others expressed the need for some kind of standard, pointing out that differences within countries can be larger than those between similar areas of different countries and that demand for internationally comparable data is increasing. There was general agreement, though, that more work needs to be done on an international level both on the definition of rural and on rural development indicators.

As a result, the UNECE sent a questionnaire to all countries that participated in the meeting. Replies were received from 26 countries. The aim of the questionnaire was to establish which organizations are responsible for rural development policy and rural development statistics, what the aims of the rural development policies are as well as how rural is defined and what kind of statistics are available at present. The question of which specific indicators could be used to satisfy the need for internationally comparable

rural development statistics has not yet been addressed by the UNECE project. However, both the OECD and Eurostat have carried out work in this area (see for example OECD, 1994 and Hay, 2002).¹

The results of three sections of the questionnaire survey are presented here: the definition of rural, the availability of rural development and related statistics and rural development policy. Annex 3 gives a more detailed summary of the replies by individual countries to the 15 questions in the questionnaire.

IV.3 The definition of rural

For statisticians working on rural development statistics, one of the first questions to ask is ‘what exactly is rural?’ This might seem a trivial question at first but it turns out to be anything but easy to define. The responses to the UNECE questionnaire showed that there is a **large variety of definitions**. In several countries more than one definition is used. In these countries, the policy issue to be addressed determines which definition is used. The differences, both within countries and between countries, relate not only to the different variables used to distinguish rural from non-rural but also to different thresholds and basic statistical units.

There are two main definition types. One is based on variables applied to **administrative areas** such as municipalities or larger areas (such as, for example, ‘Kreise’ in Germany or counties in the United States). The second type is a settlement-based definition, which looks at built-up areas/urban land use irrespective of **administrative boundaries**. The first type is more commonly used than the second.

Both these basic types of definitions then use specific variables to distinguish rural from non-rural areas. For a detailed summary of the definition of rural the reader is referred to Annex 3, questions 2 to 5.

Most definitions in use are a **combination of two or more variables** such as population level and population density or commuting intensity. The variables ‘population level’ and ‘population density’ are used most frequently. **The way these variables are used to define rural areas differ greatly**. In Denmark and the Czech Republic, the number of inhabitants of an administrative area is used on its own. In Germany, the definition is based on the population level of urban centres and the population density of the area surrounding urban centres. In the United States, one definition looks at the population level of urban centres and commuting patterns of the areas surrounding the urban centre. In Switzerland, population level, commuting pattern, population growth rates, built-up area, population/job density and employment in the primary sector are used to delimit agglomerations and isolated towns. All areas outside agglomerations and isolated towns are then considered to be rural. These are but a few examples of how population level and population density are used in definitions of rural areas. Very few countries do not refer to either population level or population density in the definition of rural. One of these exceptions is Romania. In Romania, the ‘rural’ status for a settlement is established by law without explicitly taking into account the demographic size or the population density. Similarly, in Kyrgyzstan, the parliament decides on the status of every settlement.

Even when similar variables are used to distinguish rural from non-rural, the **thresholds applied can be very different**. For the population level of municipalities, for example, this threshold ranges from 200 (in Denmark) to 2,500 (in Estonia). Several definitions look at the size of urban centres within a certain administrative area (for example, in Germany the threshold is an urban centre of 100,000 inhabitants within a region and in Bulgaria a municipality is only rural if the biggest town has less than 30,000 inhabitants). These examples also show that often rural is defined as the residual of urban.

¹ As concerns inventories of rural indicators in EU countries, see also Bryden (2001).

The third element of the definition is the territorial unit on which the definition is based. Most **countries use existing administrative areas as the basic territorial unit**. Several countries, however, use statistical subdivisions that are mainly based on the organization of the population censuses (for example, Australia, Canada and Ireland). In Denmark and Sweden, the definitions are based on addresses. These definitions have the advantage of being independent of relatively random administrative borders and of providing a flexible basis for summary statistics. This approach is possible in countries like Sweden and Denmark with a wide range of register based statistics. In many countries, however, statistics at such a low level would require large resources. Rural markers would have to be added to sample surveys and the results would probably have to be compiled in two different ways - once in the traditional way to derive statistics for administrative areas and once to derive statistics on rural areas. For some statistics, such as those based on administrative records, this might not be possible.

The next question that was addressed was whether there is a need for a definition that distinguishes **degrees of rurality**. The responses to the questionnaire seem to suggest that there is a need for such a subdivision as more than half of the countries with an official definition of rural use some kind of subdivision of rural areas. The variables used to define degrees of rurality do not necessarily have to be the same as for the rural non-rural definition. For example, the rural/non-rural definition could be based on population level, whereas the subdivision could be based on the distance to an urban centre of a certain size.

IV.4 Current availability of rural development and related statistics

In many countries more than one organization collects and produces statistics on rural development, reflecting the cross-cutting issues related to rural development. Therefore, it will be not as straightforward as in some other areas to compile an inventory of available statistics and indicators. However, in all countries, some, but not necessarily the main, **responsibility** lies with the national statistical office. In countries that are based on a federal principal the regional statistical offices also play an important role in the collection of rural development statistics (for example, Australia, Canada, Germany and the Russian Federation). Frequently, ministries also share the responsibility for statistics on rural development.

The replies to the question of whether there is a core/standard set of indicators to monitor rural development showed that **several countries are in the process of developing or are investigating the need for a set of indicators** to monitor rural development. In several countries, sets of indicators exist that are directly linked to the monitoring of the EU Special Accession Programme for Agriculture and Rural Development (SAPARD) and the EU Rural Development Plan. As these programmes are closely linked to agriculture, the indicators are likely to be also closely linked to the part of rural development more closely associated to the agricultural community. One example of a set of indicators for rural development not linked to agricultural policy is the Finnish Rural Indicators project. A list with all the indicators in the Finnish Rural Indicators set can be found in Annex 3.

The questionnaire also revealed that at present the information on rural development available on the **Internet** is fairly limited. Several countries indicated that no rural development statistics are at present available on the Internet. In many other cases some regional and/or rural data are available on different sites. Very few countries have information on a dedicated site.

Questions 10 to 12 focused on small area statistics. Again the questions are summarized in Annex 3. The answers show that in the majority of countries the **smallest areas for which statistics are currently available** are municipalities, which often correspond to the EU NUTS 5 areas. Nine countries produce statistics for smaller areas. These smaller areas are usually some subdivision related to the organization or presentation of data on the population census. The reason for including these questions was to get some idea

of the feasibility of basing an international standard for the definition of 'rural' on territorial units not linked to administrative areas and/or those smaller than a municipality/village. The answers seem to suggest that a definition based on areas that do not correspond to administrative areas would require many countries to produce two sets of statistics - one for the administrative areas for which statistics are currently required and another one for different territorial units which are not based on the current territorial units.

Finally, the questionnaire also asked for the **percentage of the population** living in rural areas and the **percentage of land** that is classified as rural, the most basic rural indicators. The results are presented in Table IV.1.

These figures are based on the national definitions of 'rural' and therefore the **comparability** is very limited. At the moment, these data are used for international comparisons (for example, in the World Urbanization Prospects published by the Population Division of the Department of Economic and Social Affairs of the UN) as they are the only ones available. The OECD has developed a definition based on population density and statistics for OECD countries are available based on this definition.

Looking at the data available for Canada, England and the United States, which all have two or more commonly used definitions, it can be seen that the different definition can have sizeable effects on the indicators. For England, the population living in rural areas is either 20% or 28% depending on the definition used. The land in rural areas is 87% or 93%. For the United States, the difference between the two definitions is larger for the land area than for the population. In Canada the rural population varies between 22% and 38% depending on the definition used. It can be seen that the different types of definitions can have a large impact on both the population classed as living in rural areas and the land area covered. In addition, the overlap between the definitions is smaller than might be assumed from looking at these figures. Not all of the 20% of the population classed as rural in the English urban settlement definition are also included in the 28% classed as rural according to the administrative area definition.

Another point worth mentioning is the low figure for land in rural areas in Germany. The reason for this comparatively low figure is that the smallest geographic unit used in the classification is a 'Kreis', an administrative area consisting of several municipalities. All other countries in this sample base their definition on smaller geographic units. Generally, the smaller the basic geographic unit used in the classification, the higher the percentage of land classified as rural.

Due to the lack of comparability of the data, it is difficult to draw any other conclusions from the data presented in the table. The same will be true for every indicator of rural development - whether economic, social or environmental. The impact the definition of rural has on rural indicators in Canada are shown in a research paper by du Plessis *et al.*, 2002. It would be interesting to carry out similar research on an international level using different national definitions. This would show, for example, whether the differences in the rural population can be attributed mainly to differences in the definition or mainly due to actual physical differences in the various countries.

IV.5 Rural development policy

Even though it is connected to agricultural policy and often emerges from it, rural development has a much wider scope. While agriculture plays a part in rural development, in many countries this is small and declining. Hence, rural development policy does not necessarily need to fall within the **responsibility** of the same organization as agricultural policy. In different countries, rural development is under the responsibility of different ministries/departments.

In most countries the ministry responsible for agricultural policy is also the major player (for example, Bulgaria, Estonia, Finland, France, Hungary, Kazakhstan and Slovakia) or one of the principal players (for example, Australia, Lithuania, Netherlands and Romania) in rural development policy. In other countries, the main responsibility for rural areas falls within the scope of other ministries such as the Ministry of Industry, Employment and Communication in Sweden, the Department of Community, Rural and Gaeltacht Affairs in Ireland, the Ministry for the Interior and Health in Denmark and the Ministry for Regional Development and Regional Authorities in the Czech Republic. In several countries regional governments play a major role in developing and implementing rural development policies (for example, Australia, Germany, Italy, Netherlands and the Russian Federation).

The UNECE questionnaire also included questions about the **objectives and major themes** of rural development policy. The replies show that the focus of rural development varies considerably between countries. In Canada for example, the aim is to improve the well-being of rural citizens. In the United States, the emphasis is on the improvement of the quality of life in rural areas. In most EU member and acceding countries, rural development is much more closely linked to agricultural policy as rural development falls within the second pillar of the Common Agricultural Policy. For acceding countries, rural development and agricultural policy aims are set out in EU SAPARD initiative. In order to decide on the scope and the focus of rural development statistics, it is important to understand the aims of rural development policy. The focus will be different depending on whether policy is mainly addressed at the agricultural community level or more generally at the rural community level.

In order to determine what general topic areas should be covered by rural development statistics, a question was included about what the main themes and objectives of rural development policy should be. The answers generally fall within the following main areas:

- Economic/employment;
- Service provision/Infrastructure;
- Environment;
- Social; and
- Preservation or renewal of rural communities and tradition.

The importance attributed to agriculture differs greatly between countries, ranging from being a main focus to only playing a minor part.

Table IV.1
Rural population and rural land

| | What is the percentage of the population that are classified to live in rural areas? | What is the percentage of the total land area that is classified as rural? |
|--------------------|--|---|
| Australia | 12.84 per cent | 99.74 per cent |
| Bulgaria | 41.9 per cent (11.2 per cent in less developed rural areas) | 83.7 per cent |
| Canada | 22 to 38 per cent depending on the definition used | 99.8 per cent 'rural' and 95 per cent 'predominantly rural' (OECD definition) |
| Czech Republic | 26.5 per cent | 73.7 per cent |
| Estonia | 32.6 per cent | 98.4 per cent |
| Finland | 43 per cent (27 per cent excluding urban adjacent rural areas) | 95 per cent (83 per cent if urban adjacent rural areas) |
| France | 24 per cent | 82 per cent |
| Germany | 13.03 per cent | 30.35 per cent |
| Hungary | Narrow definition: 47.35 per cent; broader definition: predominantly rural 31.3 per cent and significantly rural | Narrow definition: 88.3 per cent; broader definition: predominantly rural 58.3 per cent and significantly rural 37.7 per cent |
| Ireland | n/a | n/a |
| Italy | n/a | n/a |
| Kyrgyzstan | 65 per cent | 28.8 (53.9) per cent of the land is agricultural land and land of rural settlements (about 90 per cent of the territory lays higher than 1,500m above sea level). |
| Latvia | 47.5 per cent | 98.2 per cent |
| Lithuania | 33.1 per cent | 97 per cent |
| Netherlands | n/a | n/a |
| Norway | 22.3 per cent (population not living in urban settlements) | 99.3 per cent (land outside urban settlements) |
| Romania | 45.4 per cent | 89 per cent |
| Russian Federation | 27 per cent | n/a |
| Slovakia | 29.9 per cent (OECD definition at NUTS 4 48 per cent in predominantly rural areas) | 76.7 per cent (OECD definition 59.5 per cent in predominantly rural areas) |
| Sweden | 35 to 40 per cent | more than 95 per cent |
| Switzerland | 32 per cent | 77 per cent (approximately) |
| Turkey | 35.1 per cent | n/a |
| United Kingdom | n/a | n/a |
| England | 20 per cent (settlement based definition); 28 per cent (ward based definition) | 93 per cent (settlement based definition); 87 per cent (ward based definition) |
| Scotland | 30.9 per cent 1) | n/a |
| Wales | 32 per cent | 82 per cent |
| Northern Ireland | n/a | n/a |
| United States | 21 per cent (Census Bureau definition); 20 per cent (ERS definition) | 97 per cent (Census Bureau definition); 80.8 per cent (ERS definition) |

1) <http://www.gro-scotland.gov.uk/grosweb/grosweb.nsf/pages/scosett#res>.

Source: UNECE rural questionnaire.

IV.6 Next steps

Further discussion is needed on the usefulness of an **international standard** for the definition of rural. Many countries are at present considering, or already working on, an official definition of 'rural' and on putting together a set of indicators to monitor and evaluate rural development policy. International cooperation and benchmarking would seem useful for countries currently considering these issues on a national basis. Similar problems and issues are likely to arise in different countries. The solutions might not be the same for all countries but information on what has been done in other countries and on international standards, recommendations or guidelines will help them make informed decisions.

As the demand for internationally comparable information rises, some kind of standard both for the definition of rural and for a set of indicators is desirable. In an increasingly globalized world, policymakers, researchers and the general public are not only interested in statistics showing what is going on in their country but also statistics on how their country compares to others such as neighbouring countries or countries with similar environmental, climate, social or political conditions.

IV.7 Case study: Canada

IV.7.1 Introduction

This section will review case studies of rural developments statistics compiled by countries. The intention is that as this Handbook is updated, additional country statistics showing good practise will be added. For the time being, there is only one case study. However, this is quite extensive, reviewing the rural statistical system in Canada. In many respects the rural statistical system in Canada is very advanced and lends itself to detailed analysis of policy issues related to various types of rural areas *vis-à-vis* both urban areas and the country as a whole. Many of the results appear in the *Rural and Small Town Canada Analysis Bulletin* series, which is published by Statistics Canada (and available at the Statistics Canada website: www.statcan.ca/english/freepub/21-006-XIE/free.htm). After reviewing the definitions and typologies used by Statistics Canada, selected results extracted from this Bulletin will be presented. These give a good illustration of what is achievable given the availability of a well-developed statistical system based on stringent definitions related to well proven survey methods.

Only a small fraction of the statistics from the various issues of the *Rural and Small Town Canada Analysis Bulletin* is presented here.² For instance, the detailed statistics broken down by categories such as regions or genders, which are of prime importance for rural development statistics, are, for reason of space, only briefly mentioned here. Readers interested in these breakdowns should consult the original sources.

IV.7.2 Definitions and typologies [Vol. 4, No. 8]

Several alternative definitions of "rural" are used in Canada for national and provincial level policy analysis. The policy issue and the geographical focus being addressed (i.e. local, regional, national or international), leads an analyst to choose one definition over another. The definition chosen is of course also dependent on available data sources.

² References are made in the text to the various volumes and issues of this periodical without each time mentioning the name of the periodical.

There are six alternative ways of defining “rural” in Canada. Depending on the definition of rural being applied, between 22% and 38% of the Canadian population are defined as rural. Three definitions will be shown below.

Definition 1: For analysis of metropolitan versus non-metropolitan regions and their sub-categories

This definition is based on census divisions (CDs) as the “building block” for defining regional types. This typology is equivalent to the Beale Code typology developed by Calvin Beale at the USDA.

Metropolitan regions: 50,000 or more people living in urban settlements (where an urban settlement has a population of 2,500 or more inhabitants)

1. **Major metro (central):** CDs with urban settlements of one million or more (central).
2. **Major metro (fringe):** CDs with urban settlements of one million or more (fringe).
3. **Mid-sized metro:** CDs with urban settlements of 250,000 to 999,999 people.

Non-Metropolitan regions: (those with under 50,000 people living in urban settlements)

4. **Small city (metro-adjacent):** CDs with 20,000 to 49,999 living in urban settlements, adjacent to a metropolitan region.
5. **Small city (non-metro-adjacent):** CDs with 20,000 to 49,999 living in urban settlements, non-adjacent to a metropolitan region.
6. **Small town (metro-adjacent):** CDs with 2,500 to 19,999 living in urban settlements, adjacent to a metropolitan region.
7. **Small town (non-metro-adjacent):** CDs with 2,500 to 19,999 living in urban settlements, non-adjacent to a metropolitan region.
8. **Rural (metro-adjacent):** CDs with no people in urban settlements with 2,500 or more, adjacent to a metropolitan region.
9. **Rural (non-metro-adjacent):** CDs with no people in urban settlements with 2,500 or more, non-adjacent to a metropolitan region.
10. **Northern.**

Definition 2: The second typology concerns Rural and Small Town (RST) areas

This definition focuses on the population living outside the commuting zones of larger urban centres or more specifically outside so-called Census Metropolitan Areas (CMA) and Census Agglomerations (CA). The more precise definitions of these concepts are:

- **Rural and Small Town (RST) areas** have a population of 1 - 9,999 where less than 50% of the employed individuals commute to a CMA/CA and less than 25% commute from a CMA/CA.
- **Census Metropolitan Areas (CMA)** has an urban core of 100,000 or over and includes all neighbouring municipalities where over 50% of more of the labour force commutes into the urban core or more than 25% commute from a CMA/CA.
- **Census Agglomerations (CA)** has an urban core of between 10,000 and 99,999 and abides by the same commuting rule as CMAs.

Definition 3: The third definition is based on the OECD definition

The OECD definition distinguishes between:

- **Predominately urban** regions;
- **Intermediate** regions; and
- **Predominately rural** regions, sub-divided into:
 - Metro-adjacent;
 - Non-metro-adjacent; and
 - Northern regions.

The major data sources for the rural and urban statistics are census data and labour force surveys.

IV.7.3 Results

Below a compilation is presented showing a few examples of results that have been extracted from various issues of the *Rural and Small Town Canada Analysis Bulletin*. Tables and graphics are grouped together at the end of this chapter.

IV.7.3.1 Population issues**Migration to and from rural areas** [Vol. 3, No. 6]

Migration is a concern for RST areas of Canada as rural development is essentially a demographic phenomenon. In terms of net migration, RST areas were net losers of youth (under 25 years of age) but net gainers of individuals in all age classes from 25 to 69 years of age. Thus, RST areas appeared competitive in attracting migrants in all age classes from 25 to 69 years of age.

Patterns of migration into and out of rural and small town Canada were similar to the patterns reported in the United States. In the 1970s, there was a turnaround of the long-standing pattern of rural net outmigration. This was due to both higher in-migration and lower outmigration. In the 1980s, we also saw the turnaround of the turnaround where the pattern of rural net outmigration returned, caused by lower in-migration. In the early 1990s, there was a return to the pattern of the 1970s, namely, rural NET in-migration, but this time due solely to higher RST retention (lower outmigration).

Young adults were the most mobile during the study period. Those aged 20-24 had the highest rates of RST outmigration while those aged 25-29 had the highest rates of RST in-migration. In terms of net migration, RST areas were net losers of youth but net gainers of individuals aged 25-69. RST areas were therefore competitive in attracting migrants of all age classes from 25 to 69 years of age.

Rural youth migration [Vol. 2, No. 3]

By comparing the population structure for RST areas in 1996 to the overall Canadian population structure, one sees that the RST population has a smaller proportion of individuals who are 20 to 24 and 25 to 29 years of age. Is this due to migration? Will these individuals return to RST areas?

How many young adults should we expect to find in RST areas? To investigate this, this Bulletin calculated an expected 1996 population pyramid using the 1971 population structure (adjusted for expected deaths) and then compared this to the actual 1996 population pyramid. A 25-year period was used to allow

the youth to leave for education and to return to a rural area. All provinces lost youth from their rural areas between 1971 and 1996. There was a (net) exodus over this time period.

Population structure and change [Vol. 2, No. 2]

In 1981, 33.6% of Canadians lived in predominantly rural regions. By 1996, this share had fallen to 31.4%. However, within predominantly rural regions, rural metro-adjacent regions are growing the fastest. These regions represent one half of the population in predominantly rural regions. Net migration is strongest towards rural metro-adjacent regions.

The rural population continues to concentrate in regions near cities. Between 1981 and 1996, the predominantly rural population increased in absolute terms by almost 11% (see Figure IV.7.1). Most of this increase occurred in rural metro-adjacent regions, which increased by almost 17%. The next largest rural population increase was 7% in the rural northern regions. Rural non-metro-adjacent regions had the smallest gains in population. These results compare with the predominantly urban and intermediate regions which had higher growth rates of approximately 22% each.

Rural and small town population is growing in the 1990s [Vol. 1, No. 1]

Overall, Canada's RST population has grown in each intercensal period since 1976. However, the share of Canada's population living in rural and small town areas has declined from 34% in 1976 to 22% in 1996. There are two reasons for this. First, population growth has been higher in larger urban centres. Second, some rural areas are reclassified into "larger urban centres" in each census – both because commuting patterns change which causes the rural community to be classified within the commuting zone of the "larger urban centre" or the rural community grows past the threshold of 10,000 persons in the urban core. In this Bulletin, the 5-year growth rates were calculated within constant boundaries but, invariably, each 5-year period started with fewer rural people due to this reclassification.

Rural and small town growth rates vary widely among the provinces. Much of the growth within rural and small town areas is in the small towns. Sub-provincial data show wide regional differences within each province.

Immigrants [Vol.5, No. 4]

Few immigrants reside in predominantly rural regions. In 2001, 28% of the population in predominantly urban regions was made up of immigrants (i.e. residents born outside Canada). The corresponding share for predominantly rural regions was only 6%. For Canada as a whole, immigrants had the same proportion with high school degree as the total population. In rural regions, on the other hand, immigrants were markedly more educated than the Canadian-born.

Immigrants in rural Canada – preference for urban regions [Vol.4, No. 2]

Immigrants tend to prefer urban regions. In 1996, 17% of Canada's total population were immigrants and 88% of them lived in urban regions. There they made up 27% of the population compared with only 6% of the population in the predominantly rural regions. Another interesting result is that, within predominantly rural regions, immigrants had a higher level of educational compared with the Canadian-born.

Within predominantly rural regions, immigrants who arrived before 1981 had a higher employment rate and higher incomes than the Canadian-born population. Those immigrants who arrive after 1981 had the opposite result.

IV.7.3.2 Employment and labour force issues

Seasonal variation in rural employment [Vol. 3, No. 8]

Within each industrial sector (except agriculture), the RST workforce exhibited a higher amplitude of seasonality than the workforce in larger urban centres (LUCs), over the 1996 to 2000 period.

After accounting for the national average amplitude of seasonality and after accounting for the intensity of rural employment in highly seasonal sectors (such as “primary sector other than agriculture” and “construction”), we calculated that 39% of the employment seasonality in RST areas is due to the unique aspects of working in those areas. Higher rural seasonality may be due to the fact that RST industries, such as processing and transportation, have stronger links to primary commodity flows.

Employment structure up to 2000 [Vol. 3, No. 4]

Between 1987 and 1994 RST employment grew almost 6% while LUC employment grew nearly 8%. This growth in RST areas was fairly steady with the exception of 1990-1991 when there was an overall decline in employment due to the economic recession. Between 1996 and 2000, while both the labour force participation rate and the employment rate in RST areas remained lower than in LUCs, growth was similar in both regions at just over 5% (Table IV.7.1).

The unemployment rates for RST areas and LUCs declined between 1996 and 2000, but the rate of reduction was slightly less in RST areas.

RST areas had lower labour force participation rates than LUCs for both youth and the general population (see Figure IV.7.2). However, up until 1999 the respective gaps closed. Between 1999 and 2000 the rate for youth and the general population declined in RST areas but continued a steady rise in LUCs.

While there was a general rising trend in the employment rates for the same population groups throughout, there was a large percentage difference between lower rates in RST areas and higher rates in LUCs. There was also a contrast between youth and the general population for each area, with youth having lower employment rates.

There was a smaller discrepancy in unemployment rates between RST areas and LUCs for the two populations than was evident in either the labour force participation or the employment rates. However, both youth and the general population exhibited a steeper decline in the unemployment rate in LUCs (see Figure IV.7.2). There was a marked difference in rates between youth and the general population in both areas, with youth averaging more than 5 percentage points higher than the respective general population.

When examining male and female youth in RST areas and LUCs the following results were obtained. Females had a lower rate of labour force participation than males. The male rates showed little difference between RST areas and LUCs, but the female rates were lower in RST areas. The male rates showed little difference between RST areas and LUCs, but the female rates exhibited a large discrepancy. Female RST labour force participation averaged 5 percentage points below that in LUCs.

Males in both RST areas and LUCs, and females in LUCs, had similar employment rates. However, females in RST areas had lower rates, averaging approximately 5 percentage points below the other groups.

While all the unemployment rates are high (averaging nearly 15%), after 1997 there was a downward trend for all the groups. This decline was steepest for male youth in LUCs. In both RST areas and LUCs, female youth had lower unemployment rates than the respective male population.

At the Canada level, it was seen that both the labour force participation rate and the employment rate in the RST areas were consistently below that of the LUCs. However, the RST areas were matching the LUCs in terms of the increase in employment rates over the five years. Both the RST areas and the LUCs had declining unemployment rates but the reduction was slightly less in the RST areas.

RST and LUC employment patterns of youth and the general population, split between males and females, were also examined. It was found that RST areas had lower labour force participation rates and employment rates and higher unemployment rates. However, the discrepancy with LUCs was relatively smaller for unemployment rates. Youth exhibited lower labour force participation and employment rates and higher unemployment rates than the general population. The variance between youth and the general population was particularly apparent in the unemployment rates with youth averaging 5 percentage points higher. For both youth and the general population the unemployment rate was declining faster in LUCs.

Looking specifically at male and female youth in RST areas and LUCs, females had generally lower labour force participation rates. This is particularly marked in RST areas. A similar pattern is seen in employment rates, with RST females having markedly lower rates than the other groups. However, the LUC female rate was closer to the male employment rates than was apparent in the labour force participation rate. Interestingly, although female youth had relatively less attachment to the labour force (i.e. lower employment rates and lower labour force participation rates), female youth (in both RST areas and LUCs) had lower unemployment rates than either male group.

Employment structure [Vol. 2, No. 6]

In Canada in 1996, residents of predominantly rural regions contributed about 29% of total employment. This share has been essentially constant since 1981. Among the types of rural regions, rural metro-adjacent regions contribute 15%, rural non-metro-adjacent regions contribute 12% and rural northern regions contribute 2%. All these shares remained essentially constant over the 1981 to 1996 period.

Looking specifically at the 1991 to 1996 period, the rate of employment growth in each type of rural region was higher than the employment growth in predominantly urban and intermediate regions. Within predominantly rural regions, rural metro-adjacent regions showed the strongest rate of employment growth in each intercensal period - however, some of the employment growth of these regions is due to an increasing number of residents commuting to jobs in urban centres.

Other results:

- The retail and wholesale trade sector is the biggest sector for employment in RST Canada and ranks as one of the top two sectors in each province.
- Manufacturing is also a top sector for employment in RST Canada.
- Only regions which are adjacent to major metropolitan centres reported employment growth above the Canadian average in each five year period since 1981.
- One half of the regions that reported below average employment growth for three consecutive periods were rural regions not adjacent to a metropolitan centre. The lack of access to a metropolitan centre appears to constrain employment growth.

Employment structure in the primary sector [Vol. 2, No. 7]

Today, less than 3% of the workforce has an agricultural occupation and less than 3% of the population live on a census farm. Furthermore, employment in rural metro-adjacent regions and in rural non-metro-adjacent regions remains 2.5 times more intensive in the agriculture industry, compared to the national average. This level of relative intensity has remained essentially the same over the 1981 to 1996 period because, within each type of region, employment grew or declined at essentially the same rate.

Agricultural employment showed modest growth in the 1981 to 1986 period in each type of region. Growth continued in the predominantly urban regions in the 1986 to 1991 period, due in part to continuing growth in demand for nursery and greenhouse products in the vicinity of cities. However, all types of regions experienced a decline in agricultural employment in the 1991 to 1996 period. This decline is driven, in general, by the on going substitution of machinery for labour in agricultural production. Since rural metro-adjacent regions and rural non-metro-adjacent regions are the most agricultural intensive in terms of employment, this across the board decline in the level of employment was felt most strongly in these rural regions.

Employment structure in the manufacturing sector [Vol. 2, No. 8]

Historically, manufacturing activity in Canada has been concentrated in larger cities. However, during the 1980s and 1990s, predominantly rural regions were relatively more intensive in “traditional” manufacturing relative to the overall economy. Each type of predominantly rural region appears 10% to 40% more intensive in traditional manufacturing than Canada as a whole. This relative intensity in traditional manufacturing constrained rural employment growth throughout the 1980s - because each type of region experienced a decline in traditional manufacturing employment from 1981 to 1986 and from 1986 to 1991. Employment levels essentially stabilised in the 1991 to 1996 (post recession) period. There were small gains in some regions and small losses in other regions.

In the 1981 to 1996 period, predominantly rural regions were relatively less intensive in complex manufacturing employment, with an intensity 60% to 70% of that of the country as a whole. During the 1980s, the intensity for predominantly rural complex manufacturing increased because its employment declined at a slower pace than the fall in urban complex manufacturing employment. In the 1991 to 1996 period, each type of predominantly rural region reported gains in employment in complex manufacturing whereas predominantly urban and intermediate regions showed only small changes.

Employment patterns in the non-metro workforce [Vol. 1, No. 2]

The growth and decline of non-metro employment varied according to provincial economic activities. For all provinces, except the Prairie provinces, non-metro unemployment rates were generally higher than metro unemployment rates.

Non-metro unemployment rates were less sensitive to economic fluctuations. In a recession, the rise in the unemployment rate was slower in non-metro areas. In economic expansions, the fall in the non-metro unemployment rate was slower.

Employment rates (employment/population ratios) were lower in non-metro labour markets. Generally, the following employment tendencies were observed:

- Leading into recessions, non-metro employment grew less rapidly than metro employment;
- During recessions, employment declined less in non-metro areas than in metro centres;

- During economic recoveries, employment growth was higher in non-metro areas than in metro centres;
- During economic expansions, metro employment growth overtook non-metro employment growth.

Self-employment activity [Vol.5, No. 5]

Rural self-employment workers represented 37% of all self-employed workers in Canada in 2001 compared to a population share of 27%. The self-employment activity rate of workers in rural areas outside the commuting range of larger urban centres was more than double the urban rate in 2001.³ However, the rural/urban differences in self-employment activity rates are much smaller when farming is excluded. Since the middle of 1990s, the number of rural workers engaged in non-farm self-employment has surpassed the number of farm self-employment workers.

Employment in agri-food industry by type of region [Vol.4.No.8]

Employment in agriculture and the agri-food industry remained at 15% of the total employment over the 1981-1996 period.⁴ While employment in agriculture has fallen, the agri-food industry has grown faster than the overall economy (Figure IV.7.3).

Employment in agri-food is more than three times the level of employment in agriculture. Primary agriculture saw a decline in employment between 1991 and 1996 while in agricultural services it has grown continuously since 1981. Most employment in the agri-food sector is in the food and beverage service sector and the wholesale/retail trade of agriculture and food products.

Predominantly rural areas are 30% more intensive in agriculture and agri-food employment than the Canadian average. In agriculture employment alone predominantly rural areas are 2.3 times as intensive as the Canadian average but the intensity has been declining over the years (see Figure IV.7.3).

Part-time employment in rural Canada [Vol.4, No. 1]

RST areas have a significantly higher incidence of part-time employment than LUCs (see Figure IV.7.4). In 1999, it amounted to 15.6 in the former areas and 12.8% in LUC. Following the recession in the early 1990s part-time employment increased in both types of areas. It is interesting to note the close correlation between the two series. The predominately rural areas rural provinces have the highest incidence of part-time employment in their rural areas.

In 1987-1997, the average annual growth in part-time employment was 0.1% in RST while it reached 4.6% in the LUC. As for full-time employment, the RST did even worse - it fell 1.1% per year against 2.4% growth in LUC. This picture changed radically in 1997-1999. Part-time employment surged

³ The self-employment activity rate is a wider concept than the self-employment rate because it includes also all employees earning unincorporated self-employment income outside their main job.

⁴ Agriculture includes primary agriculture and agricultural services.

Agri-food includes food processing, agriculture and food products wholesale and retail trade (including equipment and inputs) and food and beverages services.

Employment, which actually should be understood as number of persons engaged, includes paid workers, self-employed workers and unpaid family workers.

Data are available for 1981, 1986, 1991 and 1996. Predominantly rural regions are further broken down into rural metro-adjacent regions, rural non-metro-adjacent regions and rural northern regions.

by 3.1% per year in RST whereas it fell 0.3% in LUC. Full-time employment increased by 3.1% per year in RST while it rose by 2.9% in LUC.

Occupational pattern [Vol.5, No. 6]

Predominantly rural regions have a higher concentration of unskilled occupations, within most industries, compared to predominantly urban regions (see Figure IV.7.5). Moreover, during the 1990s, predominantly rural regions tended to become more intensive in unskilled occupations within most industries.

IV.7.3.3 Income and expenditures

Rural – urban income divide [Vol.4, No. 4]

Between 1992 and 1999, territorial income disparity in Canada increased. However, between-province income disparity decreased while within-province disparity increased substantially. The average provincial income is less relevant in explaining the increasing spatial disparity. Disparities between various (OECD) types of regions became more important. Although the changes are not dramatic the geography of income disparities is shifting slowly but steadily from a provincial to a rural - urban divide.

Rural and urban household expenditure patterns for 1996 [Vol. 1, No. 4]

Main conclusions are that:

- Rural and urban households spend the same share of their budget on the necessities of food, clothing and shelter but rural households spend more on food and less on shelter.
- Distance influences rural household expenditure patterns. Rural households spend a higher share on transportation and a lower share on some services (e.g. cablevision, Internet), which are more difficult to access.

In 1996, the total expenditure of an average Canadian household was \$49,054. Rural households spent an average of \$42,620 while urban households had an average spending of \$50,283.

In 1996, rural households spent 13% of their total budgets on food, while urban households spent 12% (see Table IV.7.2). This difference could be attributed to the fact that the average household size is moderately larger in rural areas (2.75 persons) than in urban areas (2.58 persons).

Both rural and urban households spent about the same share of their total budgets on clothing in 1996 (4.3%).

In 1996, households in rural areas spent an average of \$6,705 on shelter (16% of their household budgets), while urban households spent an average of \$8,800 (17%). A larger proportion of rural households owned their homes (82%) than urban households (64%). In addition, a larger share of rural homeowners (56%) has no mortgage payments compared to urban homeowners (45%).

Rural households spent an average of \$6,328 on transportation in 1996, 15% of their total expenditure, while urban households spent \$5,990, just 12% of their total expenditure.

Access to recreation services may be more limited in rural areas. In 1996, only 85% of rural households reported spending on recreation services, compared to 94% of urban households. On average,

rural households spent \$547 on recreation services, while urban households spent \$1,033. Rural households spent, on average, \$29 going to the movies compared to \$63 for urban households. Compared to urban households, rural households spent more on tobacco (the average across all rural households was \$619 and the average across all urban households was \$512).

Measuring income and well-being [Vol. 2, No. 5]

Incomes are lower in rural areas. For the past three decades, rural families have had the lowest average incomes and the most urban areas (100,000 or more) have had the highest incomes.

In 1997, the average income for families living in rural areas was \$48,850 while in areas with a population of 100,000 or more, the average family income was \$59,920 (in constant 1996 dollars).

The income gap between rural areas and smaller urban centres has been falling the most, when we compare rural incomes to the incomes in each urbanization class. Since 1990, the average income gap between rural areas and cities under 15,000 population fell by 58%. Even against the 100,000 and over urbanization class, the rural urban income gap has fallen by 20%. By 1997, the average income for a rural family was only \$359 below that of a family living in an urban area with a population less than 30,000.

Through the 1990s, within each community size, the proportion of families with low income has not fluctuated significantly. The proportion of families with income below the LICO⁵ is lower in rural areas. For families living in rural areas, the proportion with low-income remained at slightly below 10% while for those living in areas with a population of 500,000 and over, the rates ranged from 16% to 18%.

This is an indicator that rural communities are better off than urban communities in the sense that a lower proportion of their residents are restrained in the relative ability to purchase necessities.

Through the 1990s, like the low-income rates based on LICO, the incidence of low-income rate based on LIM have not fluctuated significantly within each community size.⁶ However, across different community sizes, LIM rates have exhibited the opposite pattern of LICO rates. Unlike LICO rates, LIM rates are highest for rural families while families in the most populous areas (500,000 and over) have the lowest proportion of families with income less than the LIM. LIM rates for families living in rural areas were approximately 15% while for those living in areas with a population of 500,000 and over, approximately 12% have incomes below LIM.

The average person in rural and small urban areas receives more social transfers per dollar of income and pays less tax per dollar of income than the average urban person. On average, rural and small urban area individuals tend to receive relatively more transfers because:

- Their unemployment rates are higher;
- There is a higher proportion of children (and thus residents receive more from the child tax credit); and
- There is a higher proportion of retired people who receive Canada and Quebec Pension Plan benefits.

⁵ LICO (Low-Income Cut-Offs) are established each year with an adjustment for family size and an adjustment for the urbanization class (see Cotton, 2001).

⁶ LIM (Low-Income Measure) equals one half of the national median income, adjusted for family size and urbanization class.

Rural income disparities [Vol. 3, No. 7]

Within each province, incomes in rural regions are lower than the incomes in urban regions. Provinces with above average urban incomes (e.g. Ontario, Alberta and British Columbia) also have above average incomes in their rural regions.

The share of the rural population with low-incomes has declined, relative to the share of urban population with low-incomes (due largely to an increase in the incidence of low-incomes in urban regions).

Thus, rural income disparities are decreasing within most provinces because the rural urban income gap is decreasing; and the incidence of low-incomes in rural regions is declining, relatively.

IV.7.3.4 Social issues**A rural-urban comparison of health indicators** [Vol.4.No.6]

A lower proportion of Canadians living in small town regions (non-metro-adjacent), rural regions and northern regions rated their health as “excellent,” compared to the national average (see Table IV.7.3).

Health risk factors that are more prevalent in the non-metropolitan region population included being overweight and smoking, (see Table IV.7.3). Arthritis/rheumatism was higher than the national average in rural (non-metro-adjacent) regions even after adjusting for age.

Health status and behaviours of Canada’s youth: a rural - urban comparison [Vol.5, No. 3]

Studies have indicated that the health status of Canadians living in the most rural and remote parts of Canada is lagging behind that of urban areas. To some degree this is a result of demographic differences. However, analysis of the health of well-being of youth (aged 12-17) points to the same result. While 33% of girls in major metro regions rated their health as excellent, only 17% of girls in rural regions and 15% in northern regions rated their health at this level. Some 23% of boys in northern regions rated their health as excellent compared to 36% in major metro regions.

Boys located in small town regions had the highest prevalence of being overweight and obese. Boys in small metro regions had the highest prevalence of heavy drinking. Girls and boys in the northern regions are generally more likely to smoke. Within each type of region, girls are more likely to be smokers than boys. Physical inactivity is generally the same among youth across metro and non-metro regions. Previous studies had shown that physical activity for the population as a whole was more likely in rural areas.

How far to the nearest physician? [Vol. 1, No. 5]

In 1993, there were only half as many physicians per 1,000 population in RST Canada as in larger urban centres. However, two thirds of RST Canadians lived within 5 km of a physician. About 7% lived more than 25 km from a physician. In northern remote communities, over two thirds of the population lived more than 100 km from a physician.

Housing conditions [Vol. 2, No. 4]

Households are considered to be “below standard” if their dwellings do not meet one or more of three predetermined standards. The three standards are the suitability, adequacy, and affordability norms:

- The **suitability** norm – a suitable dwelling has enough bedrooms for the size and make up of the occupying household.
- The **adequacy** norm – an adequate dwelling does not, according to its residents, require major repairs.
- The **affordability** norm – shelter costs must consume less than 30% of before tax household income.

In 1996, predominantly rural regions had the lowest proportion of households with housing below standards (31%). Within rural regions there was little variation in the proportion of households with housing below standard. Rural northern regions had the highest proportion (33%), while rural metro-adjacent and rural non-metro-adjacent areas had the lowest proportions (31%) below standard. In contrast, predominantly urban regions had the highest proportion of households that did not meet one (or more) of the three norms of suitability, adequacy or affordability (39%).

Similar patterns are seen provincially. Within each province, predominantly rural regions had a smaller proportion of households below standard than did urban regions.

Gender balance [Vol.4, No. 3]

Rural females were less active in the labour market compared to rural males and compared to urban females. They also had a lower share of full-time work. Economic and business conditions were one of the major reasons why females undertook part-time work, which was not the case for rural males who worked part-time. Rural females worked less paid and unpaid overtime than urban females.

Household Internet and computer use [Vol.5, No. 1], [Vol. 3, No. 5], [Vol. 1, No. 7]

In 1989, 19.4% of Canadians had a computer at home, which increased to 33.2% in 1994. In 1997, the share of Canadian households with computers was 36.4%. At the same time, within RST areas, the share of individuals with a computer at home increased from 13.9% in 1989 to 22.5% in 1994. Fewer RST individuals use a computer at work, compared to individuals in larger urban centres.

In 2000, a lower share of RST individuals lived in a household with a computer, compared to their urban counterparts. Approximately one half of RST residents (48% of RST rural residents and 51% of RST small town residents) responded that they had a computer in the home compared to CMA residents (62%) and CA residents (55%).

The trend towards the adoption of computers within households is continuing. Between 1989 and 2000, the share of households with a computer has approximately tripled – and this trend exists for rural and urban Canadians. Nevertheless, rural RST areas continue to have a lower share of households with computers. The gap between RST and CMAs in terms of the proportion of households with computers was 13 percentage points in 2000 – the same as in 1994. Thus, rural households are still “lagging” behind in terms of computer ownership – the more rural the area, the lower the share of households owning a computer.

Overall, household Internet connectivity is lower in RST households than in urban. In 2000, over 45% of individuals in CMAs lived in a household with an Internet connection, compared to 30% of individuals in RST rural areas. The rate of growth of the proportion of households with an Internet connection is similar in metropolitan and non-metropolitan households. All areas are increasing their rate of adoption of Internet access but metro areas are maintaining a higher Internet adoption rate.

The use of the Internet has been perceived as a crucial medium for residents in rural and remote areas to reduce the costs of distance. Analysis have shown that within each age class, for each level of educational level and within each income group, members of rural households were less likely to use the Internet compared to their urban counterparts. Canadian data show that rurality per se is still an independent constraint on Internet use. On the positive side, however, households outside the largest 15 metropolitan areas with children under 18 years of age are more likely to access the Internet compared to similar households within the largest 15 metropolitan areas.

IV.7.3.5 Business structures and economic growth issues

Economic diversification [Vol.4.No.7]

Rural non-metro-adjacent regions show the widest range in the level of economic diversification and specialization (measured by the Herfindahl Index of Concentration). However, within each type of region, diversification varies widely depending on its location within Canada.

The producer services sector [Vol.3, No. 1]

The producer services sector (finance & real estate and business services) is a growing sector. Although the employment in predominantly rural regions grew faster than in urban they still have a very low share of their employment in this sector. Predominantly urban regions are 20% more intensive in producer services compared to the national average while predominantly rural regions are only 60% as intensive.

The composition of business establishments in smaller and larger communities in Canada [Vol. 1, No. 3]

There was a large number of new business starts in both smaller and larger communities in the 1993 to 1996 period. Smaller communities have relatively more businesses and are more likely to have smaller businesses. Service industry businesses dominate in both smaller and larger communities.

Producer service businesses have a relatively lower presence in smaller communities while distributive services, personal services and social services are almost equally spread across smaller and larger communities.

In Canada, while smaller communities had a population share of 35%, their business share was 38%. This contrasts with larger communities, which had a population share of 65% and a business share of only 62%.

In Canada, small businesses (with 4 employees or less) made up the overwhelming majority of total businesses in both smaller and larger communities in 1996. However, small businesses were relatively more prevalent in smaller communities. In smaller communities, almost 65% of the businesses had one to four employees and 82% had fewer than 10 employees. This contrasts with larger communities where 56% of the business had one to four employees and 74% had fewer than 10 employees.

Factors associated with local economic growth [Vol. 1, No. 6]

The main conclusions are that:

- A higher education level in a community provided only a weak boost to employment growth during the 1980s.
- Communities that were relatively specialized in primary sector employment and traditional manufacturing employment were relatively disadvantaged in the 1980s.
- The type of region in which a community was located had a substantial impact on the rate of local economic growth. Communities in regions influenced by metropolitan centres benefited relative to other communities.
- A higher unemployment rate in a community in 1981 did not indicate an excess supply of labour that would attract employers. In fact, wage rates grew less in these communities and thus these communities fell further behind during the 1980s.
- Communities with a higher share of population with low-incomes experienced higher economic growth in the 1980s, relative to the average community. These communities were catching up to the average community during the 1980s.
- There was a wide variability in community growth patterns in the 1980s. Many communities achieved economic growth in spite of the factors identified here that constrained growth for the average community.

It should be noted that the correlation between measures of educational attainment in the community and measures of local economic growth is generally weak. A higher level of average years of schooling within a community was associated with a lower rate of growth of average hourly wage rates. Community aggregate earnings grew less in communities with a higher level of education because the lower growth in wages was not offset by the growth of employment and/or the growth of hours worked. Note however that communities with a higher than average number of years of schooling did report higher employment growth, compared to the average community.

Another measure of the community's human capacity was also considered - the share of the population with low educational attainment and the share with high educational attainment. The results indicate that both areas with a lower educational attainment and areas with higher education attainment were associated with a higher rate of growth of employment in the 1980s. Communities with low skilled workers (as indicated by a high share of individuals with a lower level of education) were able to attract jobs during the 1980s and were also able to increase their wage level during this period. Thus, communities with a higher share of population that had lower education levels had significant association with a higher growth in aggregate community earnings.

Studies in the United States (for example, Killian and Parker, 1991) found no significant association between community employment growth and community education levels, if the industrial structure of employment and the type of region were taken into account. In this study, we have controlled for the industrial structure of employment and the type of region and we do obtain a positive (albeit weak) association between employment growth and education levels. Thus, during the 1980s, Canadian communities, but not communities in the United States, appeared to benefit from high community education levels. Employment specialization in the primary sectors was associated with lower growth in all measures of community development outcomes. Community specialization in traditional manufacturing was significantly associated with lower employment growth and with lower growth in aggregate community earnings.

IV.7.3.6 Educational issues

Rural and urban educational attainment

Education has a crucial role to play in community development. A better educated labour force can improve the community's capacity to attract or generate economic opportunities and to translate those opportunities into higher-valued employment. However, in some cases rural areas provide limited job opportunities for skilled workers. Education therefore provides lower return on investment and consequently individuals have lower incentives to continue their schooling unless they plan to migrate out of the rural area.

In aggregate terms, predominately rural regions have followed the educational shifts that have taken place in the country as a whole. However, predominately rural regions have not closed the gap in the structure of educational attainment. Measurements for 1981 and 1996 showed that the gap in educational attainment between urban and rural regions persisted, (see Table IV.7.4 and Figure IV.7.6). In fact the gap in average years of schooling has tended to widen. It should be noted, however, that part of the observed spatial differences is due to the economic and demographic differences among regions. Another important observation is that there are large variations within each type of region.

IV.7.3.7 Territorial issues

Urban consumption of agriculture land

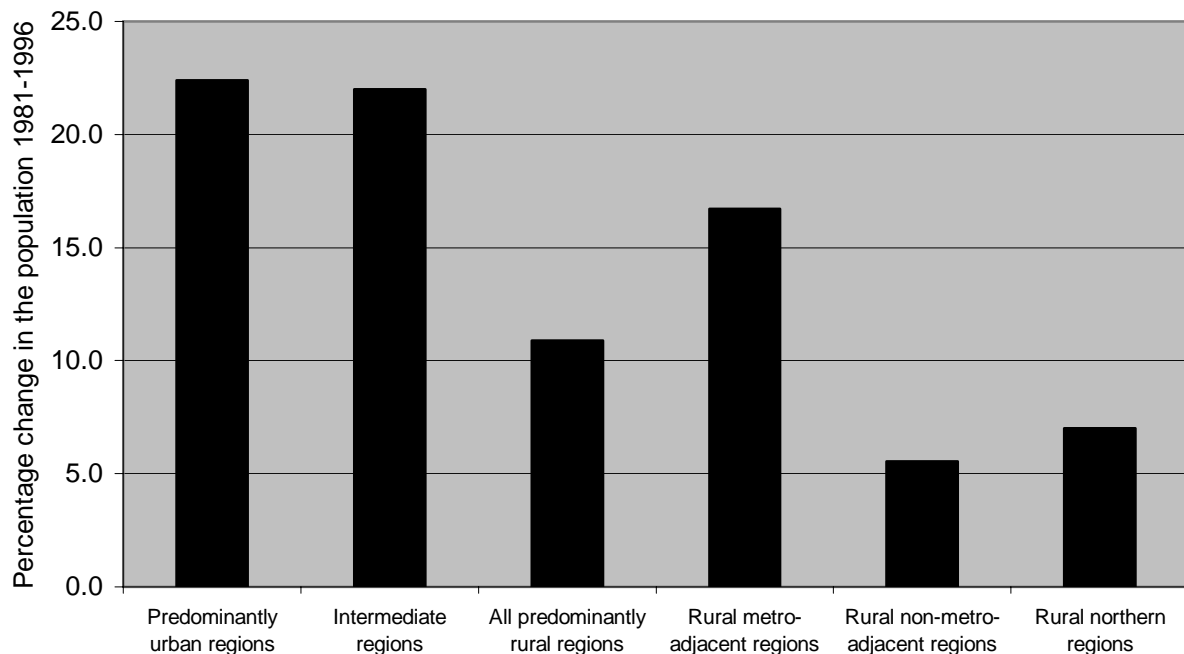
Of the total amount of land converted to urban uses in Canada between 1971 and 1996, about half, or 5,900 square kilometres, was "dependable" agricultural land. The urban consumption of agricultural land is partly due to the growing urban population and it is partly due to higher land consumption by each new urban dwelling.

IV.7.4 Concluding remarks

The selection of results for Canada shown above gives a good illustration of how rural areas perform *vis-à-vis* urban areas in a large range of areas. It can certainly provide a good basis for policy decisions concerning rural development issues. However, for a complete picture, additional information could be added for the following areas:

- Land and typology issues, including amenities;
- Recreation and tourism;
- Communication infrastructure;
- Cultural activities;
- Crime rate;
- Analysis of out-outliers: identification of successful and unsuccessful communes and areas and analysis of the factors behind the results.

Figure IV.7.1
Canada: Percentage population change by types of regions, 1981-1996



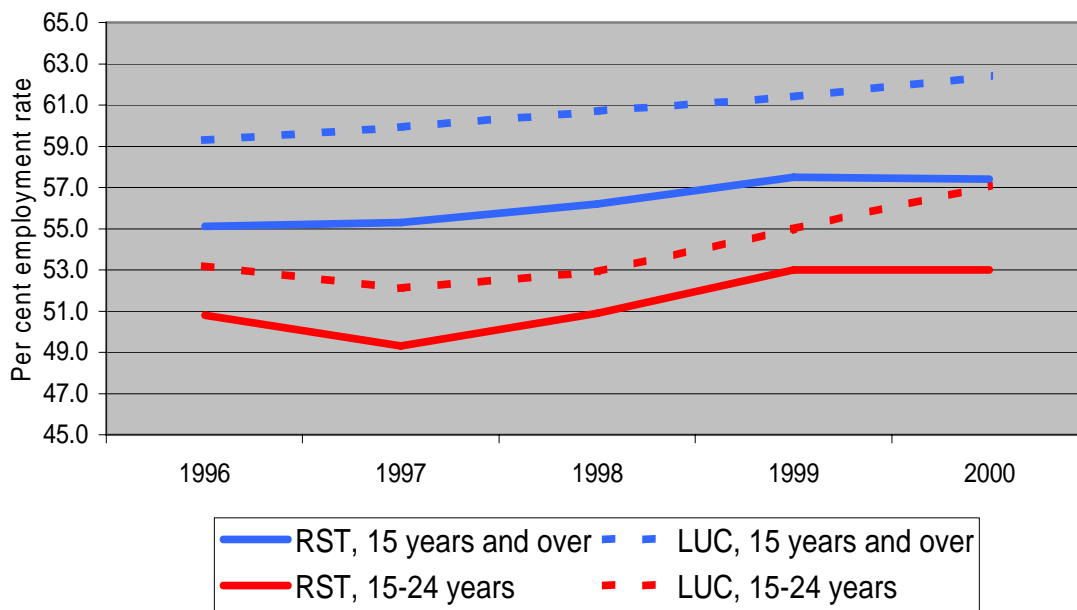
Source: Rural and Small Town Canada Bulletin, Vol.2, No. 2.

Table IV.7.1
Canada: Employment level and rate and unemployment rate in larger urban centres and rural and small town, 1996 and 2000

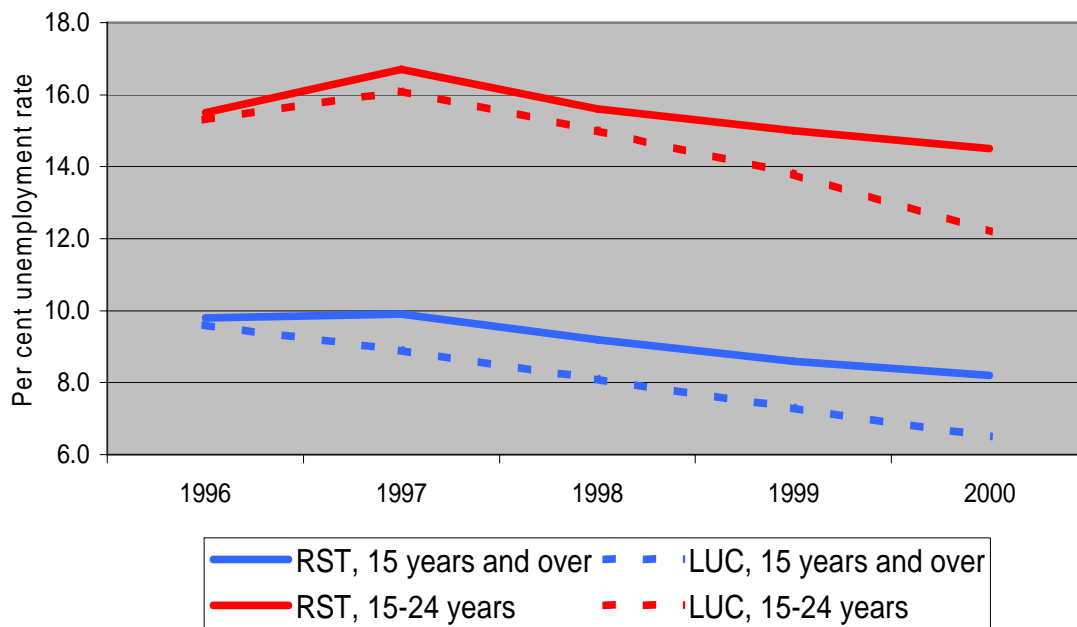
| | 1996 | 2000 | % change |
|-------------------------------------|-----------|-----------|----------|
| Employment level | | | |
| Larger urban centres | 8,191,200 | 8,960,700 | 9.4 |
| Rural and small town | 1,913,100 | 2,104,200 | 10.0 |
| Employment rate (per cent) | | | |
| Larger urban centres | 76.8 | 80.7 | |
| Rural and small town | 73.4 | 77.1 | |
| Difference | 3.4 | 3.6 | |
| Unemployment rate (per cent) | | | |
| Larger urban centres | 8.6 | 5.4 | |
| Rural and small town | 9.1 | 7.2 | |
| Difference | 0.5 | 1.8 | |

Source: Rural and Small Town Canada Bulletin, Vol.3, No. 4.

Figure IV.7.2
Canada: Employment and unemployment rates by age groups and type of geographical area,
1996-2000
(RST = rural and small town areas; LUC = larger urban centres)



Source: Rural and Small Town Canada. Vol. 3, No. 4.



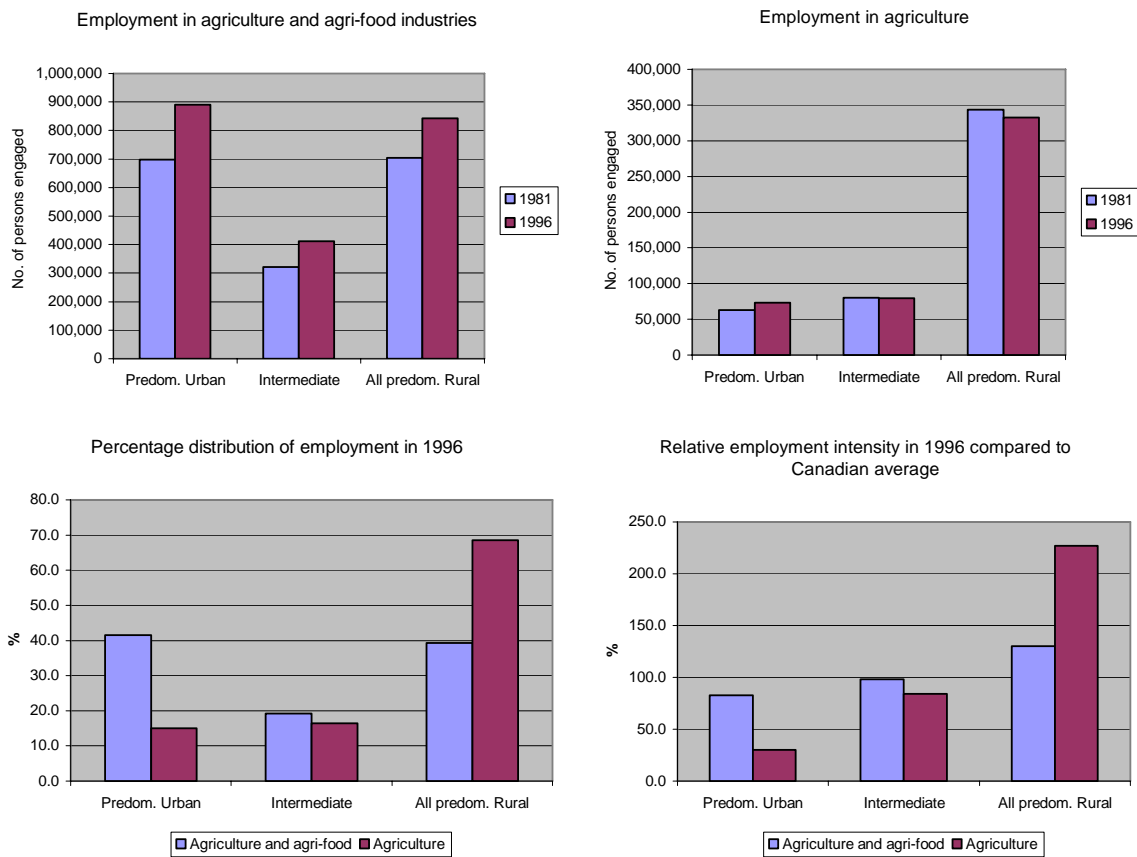
Source: Rural and Small Town Canada. Vol. 3, No. 4.

Table IV.7.2
Canada: Household expenditures by expenditure categories in urban and rural areas, 1986 and 1996 (constant 1996 dollars)

| | Urban | | Rural | |
|---|-------|-------|-------|-------|
| | 1986 | 1996 | 1986 | 1996 |
| <i>Per cent of total expenditures</i> | | | | |
| Food | 14.1 | 11.9 | 15.4 | 13.4 |
| Clothing | 6.3 | 4.3 | 6.4 | 4.3 |
| Shelter | 16.5 | 17.5 | 14.2 | 15.7 |
| Total | 36.9 | 33.7 | 36.0 | 33.4 |
| <i>Expenditure in \$ per household</i> | | | | |
| Private transportation | 4,194 | 5,415 | 4,430 | 6,113 |
| Public transportation | 468 | 576 | 202 | 215 |
| Total | 4,662 | 5,990 | 4,632 | 6,328 |
| <i>Per cent of transportation expenditures</i> | | | | |
| Private transportation | 90 | 90 | 96 | 97 |
| Public transportation | 10 | 10 | 4 | 3 |
| Total | 100 | 100 | 100 | 100 |
| <i>Expenditure per household in constant 1996 dollars</i> | | | | |
| Tobacco products and smoker's supplies | 734 | 512 | 795 | 619 |
| Alcoholic beverages | 927 | 627 | 750 | 562 |

Source: Rural and Small Town Canada Bulletin, Vol.1, No. 4.

Figure IV.7.3
Canada: Employment in agriculture and agri-food by type of regions



Source: Statistics Canada, Rural and Town Canada Analysis Bulletin, Vol.4, No.8.

Table IV.7.3
Canada: Selected health indicators by type of region

| | Self-rated health (excellent) | Body mass index (overweight) | Smoking (daily/ occasionally) | Arthritis/ Rheumatism |
|--------------------------------|-------------------------------------|------------------------------------|-------------------------------------|--------------------------|
| Major metro (central) | 26.9 | 26.5 | 21.6 | 13.4 |
| Major metro (fringe) | 28.6 | 32.8 | 27.5 | 14.3 |
| Mid-sized metro | 25.3 | 32.7 | 25.5 | 16.0 |
| Small metro | 24.9 | 35.4 | 28.3 | 16.8 |
| Small city: metro adjacent | 25.8 | 35.2 | 29.4 | 16.2 |
| Small city: non-metro adjacent | 24.0 | 35.7 | 26.7 | 16.4 |
| Small town: metro adjacent | 24.5 | 36.8 | 29.1 | 16.3 |
| Small town: non-metro adjacent | 21.9 | 37.1 | 29.5 | 15.9 |
| Rural: metro adjacent | 19.3 | 45.3 | 26.5 | 14.7 |
| Rural: non-metro adjacent | 20.2 | 42.3 | 32.0 | 18.4 |
| Northern | 20.8 | 41.9 | 32.7 | 16.1 |
| Canada | 25.6 | 32.4 | 25.9 | 15.3 |

Source: Statistics Canada, Rural and Small Town Canada Analysis Bulletin, Vol. 4, No. 6

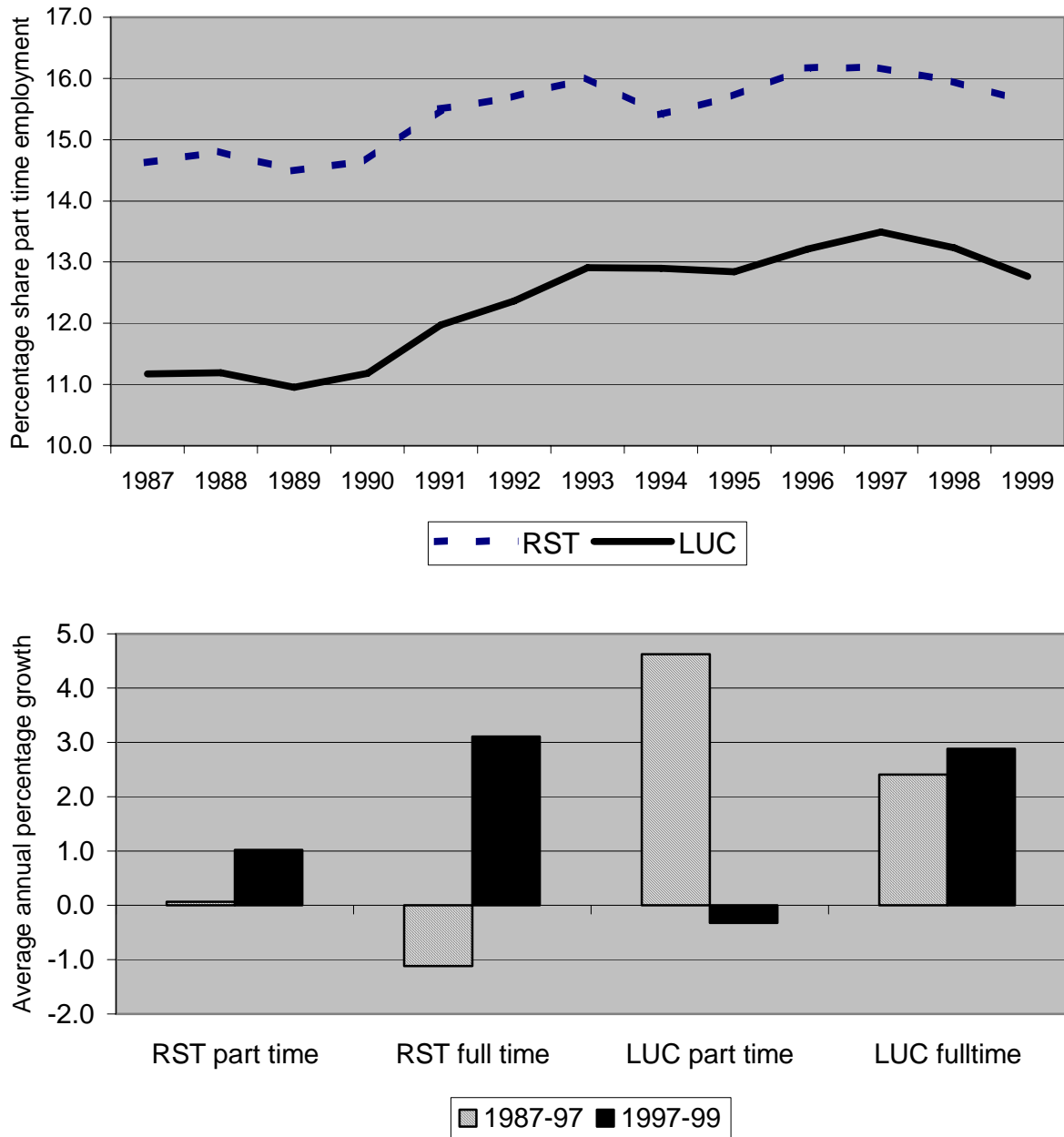
Note: Bolded grey cells indicate significantly different than the national average.

Table IV.7.4
Canada: Percentage distribution of population (25 to 54 years of age)
by level of educational attainment

| | Less than grade 9 | | Grade 9-13 (no certificate) | | High school certificate (no post secondary) | | Some secondary | |
|--------------------------|-------------------|------|-----------------------------|------|---|------|----------------|------|
| | 1981 | 1996 | 1981 | 1996 | 1981 | 1996 | 1981 | 1996 |
| Predominantly urban | 14.7 | 5.5 | 22.4 | 17.2 | 13.4 | 14.6 | 49.6 | 62.8 |
| Intermediate | 16.9 | 5.5 | 26.1 | 21.1 | 14.2 | 16.5 | 42.9 | 56.9 |
| Rural metro-adjacent | 18.2 | 6.3 | 30.2 | 25.6 | 12.6 | 16.8 | 38.9 | 51.2 |
| Rural non-metro-adjacent | 23.1 | 9.5 | 29.4 | 27.5 | 12.3 | 15.8 | 35.2 | 47.1 |
| Rural northern | 24.6 | 11.7 | 27.6 | 26.6 | 10.2 | 12.7 | 37.5 | 49.0 |
| Canada | 17.0 | 6.3 | 25.4 | 20.7 | 13.2 | 15.4 | 44.4 | 57.6 |

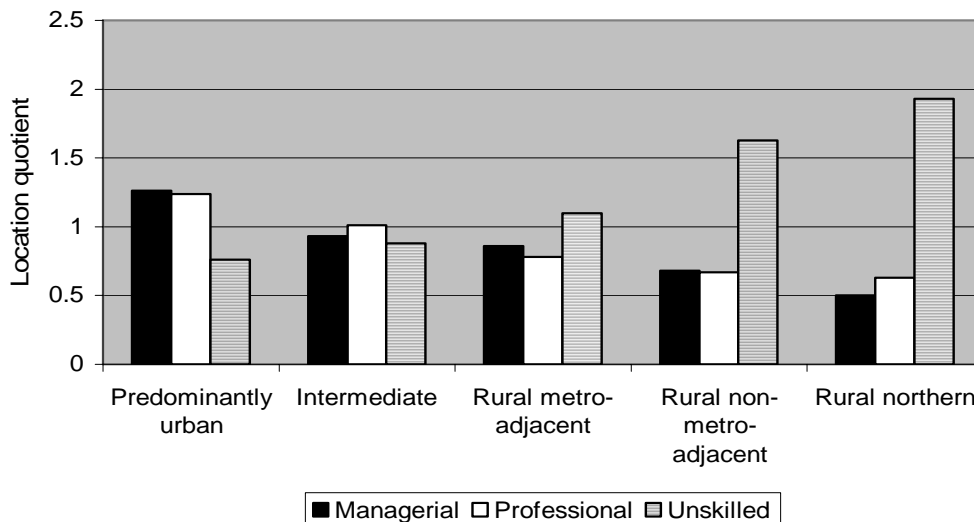
Source: Statistics Canada, Rural and Town Canada Analysis Bulletin, Vol.4, No.5.

Figure IV.7.4
(a) Canada: Percentage share part-time employment in RST and LUC in 1987-1999
(b) Canada: Annual average percentage change in part time and full employment in 1987-1997
and 1997-1999
 (RST = rural and small town areas; LUC = larger urban centres)



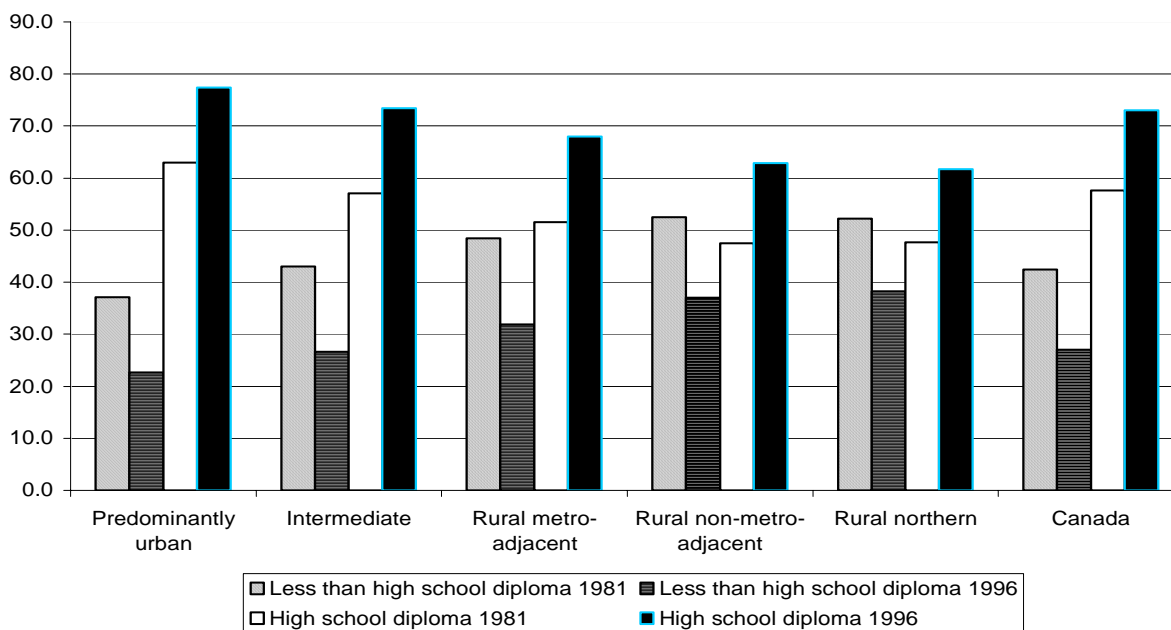
Source: Rural and Small Town Canada Analysis Bulletin, Vol. 4, No. 1.

Figure IV.7.5
Canada: Intensity of occupation by type of occupation and region in 2001, expressed as a location quotient⁷



Source: Rural and Small Town Canada Analysis Bulletin, Vol.5, No. 8

Figure IV.7.6
Canada: Percentage distribution of population (25 to 54 years of age) by level of educational attainment



Source: Statistics Canada, Rural and Town Canada Analysis Bulletin, Vol.4, No.5.

⁷ The ratio of the per cent of total regional employment in a given occupational skill level divided by the percent of total employment in that occupational skill level in the nation as a whole.

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**Information on rural development and related statistics
available on the Internet for selected countries**

Australia

Australian Bureau of Statistics (small area statistics under Themes – Regional Statistics)

www.abs.gov.au/

Bulgaria

Ministry of Agriculture

www.mzgar.government.bg

Canada

Canadian Rural Partnership:

www.rural.gc.ca

Rural and Small Town Canada Analysis Bulletin:

www.statcan.ca/english/freepub/21-006-XIE/free.htm

Statistics Canada – community profiles:

www12.statcan.ca/english/profil01/PlaceSearchForm1.cfm

Statistics Canada - Definition of Rural:

www.statcan.ca/english/IPS/Data/21-601-MIE2002061.htm

Denmark

Statbank Denmark:

www.statistikbanken.dk/

Estonia

Statistical Office (regional statistics on local government units, county and NUTS 3 level)

www.stat.ee/

France

INSEE (statistics on rural and urban zones):

www.insee.fr (rubrique ‘territoire’)

Germany

Federal Office for Building and Regional Planning

www.bbr.bund.de/

Federal Statistical Office

www.destatis.de/themen/d/thm_regional.htm

Hungary

Ministry of Agriculture and Regional Development

www.fvm.hu/main.php?folderID=945

Kazakhstan

Agency of Statistics

www.stat.kz

Kyrgyzstan

Statistical Office

www.stat.kg

Latvia

Central Statistical Bureau (Agricultural Census and Population Census data)

www.csb.lv/

Lithuania

Statistics Lithuania (regional and agricultural statistics)

www.std.lt

Norway

Statistics Norway (regional statistics)

www.ssb.no/english/subjects/00/00/02

Russian Federation

Ministry of Agriculture and Food

www.aris.ru (Russian)

Goskomstat Russia

www.gks.ru/ <http://www.gks.ru/eng/>

Institute of Agricultural Marketing

www.apkmarket.ru/ <http://www.apkmarket.ru/aboute.html>

Switzerland

Federal Statistical Office (Scattered information)

www.bfs.admin.ch

United Kingdom

Department for Environment, Food and Rural Affairs (Defra) <http://www.defra.gov.uk/rural/default.htm>

Office for National Statistics (ONS)

<http://www.statistics.gov.uk/geography/nrudp.asp>

Scotland: www.scotland.gov.uk

Wales: www.wales.gov.uk

United States

United States Census Bureau

www.census.gov/

Bureau of Labor Statistics

www.bls.gov/

Bureau of Economic Analysis

www.bea.gov/

Economic Research Service

www.ers.usda.gov/

National Agricultural Statistics Service

www.nass.usda.gov/

V INVENTORY OF RURAL INDICATORS BY INTERNATIONAL ORGANIZATIONS

V.1 Introduction

In the sections below a brief account is given of the set of indicators developed by major international organizations. This builds on the introduction already given in Chapter III section 4 to the themes within rural development on which these organizations have identified their need for statistics. Many of the indicators and the arguments behind them are of course much the same for all international organizations. Details of the OECD indicators are given first and these are not repeated in subsequent sections for the other organizations. This explains why the OECD section is much longer than those for the other organizations.

In order not to burden the text the various list of indicators explored and/or adopted by the European Union and World Bank are shown in Annex 4 and Annex 5, respectively. These include details about the definitions of the indicators.

V.2 OECD

V.2.1 Introduction

Since rural development is a complex, multidimensional concept, rural conditions and trends cannot be described by a single yardstick. To cover the various perspectives, a whole set of indicators has to be found. Furthermore, the focus of analytical and policy interest in rural affairs changes over time.

Rural to urban migration has always been a major issue but even here perspectives have changed. In some countries there have been indications of counter-urbanisation and rural revival. Analysis of the economic determinants for migration has often led to a particular interest in the structural adjustments in agriculture. Rural has often been used as a synonym for agricultural. Such a notion has lost its usefulness because agriculture has long since ceased to be the most important economic base for most rural areas in OECD Member Countries. Farmers have become a minority even in rural villages and rural people are employed more and more in the secondary and tertiary sectors.

However, agriculture, together with forestry, still involves the management of land resources. It continues to shape the environmental quality of the countryside. Land use changes can have an important impact not only on ecological integrity but also on aesthetic, visual amenities. Environmental quality has become a key factor in any assessment of rural living conditions, as has education, health and safety. Income figures are still important criteria for measuring rural and regional disparities. However, alone they are not sufficient to explain why people stay or leave rural places.

OECD-wide rural indicators must cover the whole range of rural concerns and should improve the understanding of those factors which influence the design, implementation and impact of rural policies. As a first step, it is useful to distinguish between those subjects which are of general importance and which provide the necessary background for any rural assessment and other more specialized subjects for which a more detailed analysis is required.

The OECD identified the following general subjects, which cover the range of rural development (as well as urban) concerns in the OECD:

- Population and migration;
- Economic structure and performance;
- Social well-being and equity;
- Environment and sustainability.

With the aim of covering these subjects with as much balance as possible, a basic set of rural indicators considered suitable for OECD purposes was selected.

The selection process for the indicators reflected the three principles developed earlier: **relevance, reliability and realisability**. It was based on an assessment of various aspects, such as:

- Likely territorial differences;
- Coverage of the analytical issues;
- Explanatory power of the indicator;
- Availability of disaggregated data.

It is clear that no single basic indicator could be accepted individually as a reasonable yardstick for an assessment of rural conditions and trends. Even comparatively narrow aspects of rural life, such as education and health, are not adequately reflected by such crude measures as the percentage of population with a completed post secondary education, or infant mortality. Nor can disparities in social well-being be measured simply in terms of income per capita.

Not all of the indicators in the basic set are equally accessible. In fact, the list includes indicators with **three levels of availability**:

- Available in the short term;
- Feasible in the midterm;
- Desirable in the longer term.

Thus, this basic set of rural indicators cannot be considered final. In the course of further work it might be appropriate to modify the list by taking out some of the variables or adding new ones. Improvements, especially with regard to data availability, appear particularly desirable in the field of rural indicators on social well-being and environmental quality. The basic set of rural indicators should, however, always be restricted to a limited number of statistics, sufficiently balanced to cover all of the four general subjects (OECD, 1996).

In addition to, and in conjunction with, the work on the general subjects, other, **special subjects** will receive increasing attention. These could include rural employment and human resources, rural environment and amenities, rural infrastructure and access to services, rural tourism, small and medium-sized enterprises (SMEs) and agriculture.

V.2.2 Population and migration

Basic information on the distribution of population over territory is indispensable for any rural analysis. Indications on population change, both natural and migratory, are of key importance in assessing past trends and future prospects of rural development. Territorially disaggregated population statistics differentiated by sex and age provide the foundations for a more detailed description or projection of rural

problems and perspectives. More refined analysis of economic and social aspects of rural life often also requires information about the social organization of the population at the level of households and local communities.

As for a basic set of indicators on population and migration the following were chosen:

- Population density;
- Population change;
- Population structure;
- Households;
- Communities.

Indicators

Density: Despite the enormous differences in average national figures, population density is considered as a key indicator for rural analysis at the OECD level. It serves as the main criterion for the distinction of rural from urban in terms of both population and area. Density reflects territorial differences in settlement pattern. It also indicates difficulties in getting or providing access to infrastructure and services.

Change: Population change for sub-national territorial units provides basic information for assessing trends in demographic geography. It is appropriate to distinguish at least the following components: total net change, the natural balance (calculated as births minus deaths) and net migration (total net change minus natural balance). It would also be useful to know, for example, if increasing net migration gains are due to increased in-migration or reduced outmigration. It is, however, very difficult to obtain such disaggregated statistics at regional and local levels.

Structures: Data on the distribution of population by sex and age provide the basis for the calculation of various demographic ratios. Indices relating the population in different age classes, such as the dependency ratio - those aged 0-14 plus those aged 65 and over divided by those aged 15-64 - or the vitality ratio - those aged 20-39 divided by those aged 60 and over - can be used for the description of demographic features. They are also valuable tools in socio-economic analysis as well as in the planning of infrastructure, such as schools or hospitals. For many purposes, it is also important to be able to distinguish population data by sex (OECD, 1996).

Households: Apart from statistics on categories of individual persons, information on the structure and changes in their social organization can be important in learning more about territorial differences and developments. Household size and the share of children growing up in single parent households are variables that could indicate such differences.

Communities: In addition to family and household statistics, data on the share of the population living in local communities of different sizes can provide further detail to assess the degree of rurality or agglomeration of sub-national territorial units (OECD, 1996).

V.2.3 Economic structure and performance

For the basic set of rural indicators, economic information can best be obtained from territorially disaggregated statistics on labour force and employment as well as from regional accounts of production and investment.

Ensuring and promoting efficient rural production and employment is surely one of the main objectives of rural policies. Thus, data on employment and value added growth, or labour force participation and unemployment rates are key variables for assessing the state of, and the prospects for, rural development. Since improvement in productivity and efficiency of rural economies always requires structural adjustment and investment, information should also be made available on these subjects (OECD, 1996).

The following indicators were chosen to describe economic structure and performance:

- Labour force;
- Employment;
- Sectoral shares;
- Productivity;
- Investment.

Indicators

Labour force: Labour Force statistics are of key importance for any assessment of economic development in different parts of a country. Change in total labour force and male and female participation rates are considered important indicators. For the purposes of rural analysis, it is crucial to clarify whether labour force and employment data are based on a measurement concept which refers to the “place of residence” or to the “place of work”.

Employment: Employment growth and unemployment rates are major rural policy concerns. However, it should be realised that unemployment rates are very crude measures, which are difficult to compare internationally. They are often based on different statistical concepts and registration practices. Proper assessment of the rural labour market situation would need more detailed information on the underlying past and future trends in job supply and demand. At the moment such data are difficult to obtain. In any case, what should be sought is more differentiated information on the nature of unemployment, by age, sex and duration.

Sectoral shares: Sectoral shares in employment and production (e.g. Gross Value Added) are usually examined to give a first indication of the main economic bases of an area. Knowledge of the shares of the three main sectors (primary, secondary, and tertiary) alone already provides valuable initial information. A further disaggregation would be more useful, however. This would allow analysts to distinguish between, for example, agriculture, forestry or fishing within the primary sector, or tourism from other activities in the services sector.

Productivity: If data are available for employment and production then productivity figures can easily be calculated. They would be important tools for the understanding of structural adjustments within and between the different parts of a country. Unfortunately, as of yet, the availability of territorially disaggregated production data is limited in many countries.

Investment: At present, the territorial detail of statistics on Gross Fixed Capital Formation is even less complete than for total production. However, since investment is crucial for any attempt to promote rural development it would appear appropriate to add an investment indicator to the basic list. Distinguishing among different types of investment, in particular, private and public, would be ideal.

V.2.4 Social well-being and equity

While territorial income distribution is an important rural policy concern, disparities in social well-being and equivalence in standards of living cannot be properly assessed in income terms alone. A whole series of other aspects determining quality of life should be taken into account. However, it has proved difficult to find social indicators which can reasonably be discussed in a sub-national and international context at the same time.

The following indicators were chosen to describe important aspects of social well-being and equity:

- Income;
- Housing;
- Education;
- Health;
- Safety.

Indicators

Income: Per capita income is probably the most commonly used measure to assess social disparities. Availability and quality of data sources is not, however, as good as one would expect. In Europe, most countries use Gross Domestic Product (GDP) per inhabitant as an indicator for regional income disparities. The smaller the area covered the more likely it is that this indicator will be misleading, because the GDP of an area is not necessarily produced only by the people living in that same area. The more important commuting becomes, the less meaningful the results. Since personal incomes depend to a large extent on redistribution through taxes and transfers, **figures on disposable personal income would surely be more appropriate indicators.** The purchasing power of income, however, may not be the same in every part of a country. This is even more true for international comparison, since current exchange rates do not always reflect the differences in purchasing power.

Housing: Housing conditions are an important component of a comprehensive monitoring of living conditions. The measurement and comparison of housing standards is difficult. However, the number of persons per room and the percentage of households having flush toilets appear to be variables that could provide initial indications of territorial differences in housing quality.

Education: Population with a higher level of education is another important aspect in describing territorial disparities. Since education systems differ considerably between countries, the most appropriate way to assess territorial differences would seem to be to measure the share of population over age 25 with a completed post secondary education.

Health and safety: Infant mortality and crime rates are, of course, not sufficient to adequately describe health and personal safety conditions. As part of a larger set of social indicators, however, they can serve as initial indicators for analysing territorial equivalence in qualities of life (OECD, 1996).

V.2.5 Environment and sustainability¹

Environmental quality is an important resource for, as well as a result of, rural development. To be sustainable, rural development has to be sensitive to environmental changes and impact. It should support efforts to maintain ecological integrity. Sustainable rural development requires adequate integration of environmental considerations into private and public decision-making.

For many environmental issues availability of territorially differentiated statistics is still very limited. A major problem for the integration of socio-economic and environmental information in rural analysis is that the grids of territorial units used to collect and present the respective data often do not coincide.

The following basic indicators on environment and sustainability were chosen:

- Topography and climate;
- Land use;
- Habitats and species;
- Soils and water;
- air quality.

Indicators

Topography and climate: Topography and climate not only shape the natural conditions but also help determine the attractiveness of areas as places for living, working and recreation. Measurement which makes sense in an international context is not easy, however. In a first attempt, the share of mountain area (over 600 meters) and the vegetation period (growing days per year) were selected as potentially relevant indicators. As a synthetic indicator that refers to a site-specific mix of threshold values in temperature, precipitation, sunshine etc., the vegetation period is not only important for agriculture but is also relevant for assessing locational amenities for housing or tourism.

Land use: Data on land use, and in particular on changes in land use, can provide basic information not only on economic dynamics, e.g. in the farming sector, but also on basic environmental conditions. It is appropriate to distinguish between changes in total land use and changes in agricultural land use. In combination with other indicators, a growing share of arable land can be interpreted as an indication of increases in soil erosion and pollution risks. If, however, the initial share is low, a reduction of arable land could also be interpreted as a negative sign, because the diversity of landscapes and habitats may be diminishing.

Habitats and species: The share of protected areas is a commonly used indicator for measuring the existence of nature conservation values, although its reliability as an environmental indicator is not very strong. It could even be interpreted as an indicator for nature at risk because without a threat there is often no need to designate such areas. As a rural indicator, comparing primarily territorial differences, and in combination with other indicators, its explanatory value may be higher, however. An indicator for assessing species diversity is the share of endangered species. At the national level, information on the number of threatened species exists for most OECD Member Countries. Information for sub-national units would be much more valuable. Providing such data, however, will not be easy in the short run.

¹ It is recognized that, in its present version, the Handbook does not cover indicators of landscape quality and amenity. Annex 6 goes some way to redress the balance.

Soils and water: Conservation of soils and protection of ground and surface water are closely related issues. They have become key environmental concerns, in particular in many rural areas. Detailed maps on natural erosion risk do not yet exist for all OECD Countries but could be developed in the midterm. It would be “a once and for all” exercise. Combined with data on land use changes, an erosion risk indicator could provide information for purposes of soil conservation and also for water protection, since soil erosion is a major source for surface water pollution. Ground water pollution in rural areas is to a large extent due to intensive agriculture. Since the problem is not just mineral fertiliser use, nor even just the total amount applied, nutrient balances (input minus withdrawal per hectare) should be calculated as indicators. Again data are not yet available for many countries but they could be developed within a reasonable time-frame.

Air quality: Ideally, balances of flows should also be established in order to assess air quality. While this may not be realistic in the short-term, emission data for air pollutants such as sulphur dioxide and carbon dioxide do differ considerably between rural and urban places. These may help to provide some initial information on territorial differences in environmental quality and sustainability (OECD, 1996).

Table V.1 shows the set of indicators for which the OECD has collected data from Member Countries.

Table V.1
OECD rural indicators

| Selected rural indicators by type of region (Regionen) | Predominantly rural regions | Significantly rural regions | Predominantly urbanized regions | National total or average |
|---|------------------------------------|------------------------------------|--|----------------------------------|
| 1 Population and area Distribution of regions Distribution of population (%) Distribution of area (%) Population density (inhab./km ²) | | | | |
| 2 Annual population change (%) Total net change Natural balance Net migration | | | | |
| 3 Demographic structure (index) Dependency Vitality | | | | |
| 4 Employment by sector (%) Agriculture Industry Services Total | | | | |
| 5 Labour market Annual employment growth (%) Participation rate (%) Unemployment rate (% of LF) | | | | |
| 6 Productivity and income (nat.=100) GDP per capita Personal income | | | | |
| 7 Land use change (%) Agriculture Forestry Other Total | | | | |

Source: OECD. Creating rural indicators for shaping territorial policy. Paris, 1996.

V.3 European Union

V.3.1 Indicators suggested in the PAIS report

The rural development domain of the Proposal on Agri-Environmental Indicators (PAIS) aimed to produce an inventory of social and economic statistics used, or with the potential, to measure changes in the rural regions of Member States. Information on indicators in the PAIS project was collected in a variety of ways, and from a variety of sources both within the administrations of Member States and within the academic community. As a result, it was possible to present information relating to **over 500 indicators** and descriptions of national approaches to rural development indicators in nine Member States.

Following an assessment of these indicators, grouped according to various themes, and using standard criteria of sensitivity, analytical soundness, comprehensibility, reference value and policy relevance, **55 indicators have been selected, which are considered to represent “good practice”** in addressing the needs of rural development policymakers and practitioners. The indicators are grouped under the headings shown below.

(i) *Population and migration - demographic structure and evolution*

An area's development depends on its population settlement and structure. For example, in areas of sparse settlement patterns it is difficult to achieve economies of scale in the production and/or delivery of goods and services. Both the level and change in population, and the resultant impact on resources, are often key development considerations. Permanent outmigration, for example, can drain labour, initiative, and income from rural areas. In several countries a key policy concern is high internal migration of young and educated people who are leaving rural municipalities and even regional centres and heading to the major city regions. It is clear that reproduction rates in most rural areas are now below urban rates, and that most rural areas depend on net inward migration for the maintenance of population. The scale and character (age-structure, class-structure, etc) of this inward migration is both an important indicator of economic performance, and a crucial element in future demographics. It is clear that, outside the commuting zones of major towns and cities, the scale and nature of inward migration varies considerably between different rural areas.

The common parameters used in relation to population composition are age structure, gender and household status. Different age-cohorts are of particular relevance to rural areas. Rural areas are often characterized by top-heavy age structures as a result of selective in- and outmigration in the past. As such, indicators of the general well-being of rural areas include:

- Per cent of population under 18;
- Per cent of population over 65;
- Per cent of young people aged 15-30.

These examples are used principally for the justification of policy support and allocation of resources in the rural policy context, although they are of course important for planning the delivery of a whole range of services such as education, health care and so forth.

Clearly, demographic forces influence the size and structure of the labour market. As exemplified by EU policy, age cohorts are often used in the calculation of demographic labour market indices. This group of indicators, generally expressed in ratios, include measures of the:

- Dependency rate (by gender): $(\text{population } 0-14 + \text{population over } 64)/(\text{population } 15-64)*100$;
- Social weight of young population: $(\text{population } 0-14)/(\text{population } 15-64)*100$;
- Rejuvenation rate: $(\text{population over } 65)/(\text{population } 0-14)*100$;
- Substitution rate: $(\text{population } 15-24)/(\text{population } 55-64)*100$;
- Demographic labour market index: $(\text{population } 5-14)/(\text{population } 55-64)*100$.

The last point gives an early indication of how many new jobs will be required in the next 10 years in order to prevent outmigration and population decline. The indicators are also disaggregated by gender.

At the most basic level, population change alone is a common and first indicator of development. Because of the strong relationship between development and population change, it is a popular indicator for identifying priority areas for special support in rural policy. The three principal components of population change are births, deaths and migration. The common indicators of population change, expressed as both ratios (per 1,000 of population) and in per cent are:

- Net migration;
- Average annual population change (natural balance and migration);
- Decennial population change (annual rate).

(ii) *Social well-being - quality of life*

Quality of life factors, such as levels of crime, quality of, and access to, education and health services and the quality of the local environment have also been shown to be important for inward and outward migration decisions in rural areas.

Many of these concerns are applicable to all territories, but some are of particular importance to rural areas. In addition, there are issues that are intrinsically more 'rural' in nature such as employment in agriculture and forestry, specialised value added activities, environmental and landscape management, and rural tourism and recreation. Monitoring regional change in these sectors is increasingly relevant in view of the evolving nature of rural employment and diversification policies.

The enhancement of individual welfare, the improvement of living and working conditions and reduction of social exclusion are principal aims of European social and cohesion policies. The set of issues covered include:

- Rural safety;
- Rural environment;
- Rural income;
- Consumer oriented services;
- Housing.

(iii) *Economic structure and performance*

Diversification of the rural economy, and the creation and maintenance of employment are critical issues for Europe's rural areas. One part of this debate concerns the "multifunctionality" of agriculture, based on the insight that agriculture is not limited to food production, but extends to environmental and wider socio-economic functions. Policy measures to diversify on- and off-farm income sources and to widen the economic base of rural economies are implemented through a plethora of national and regional policies and agencies. The tourism sector has acquired a wider significance as rural areas transform into service-based economies. This is a sector that is able to utilize rural landscape amenities, as well as being associated with rural heritage and culture.

Strengthening the competitiveness of rural Europe does not only depend on the production factors available, but on a whole range of factors. They include access to an adequate transport and communications infrastructure that can enable rural areas to compete in the global economy, proximity to public services, conditions for entrepreneurship and effective support mechanisms.

Six issues have been identified as having important policy implications with regard to economic structure and diversification:

- Labour market structure and performance;
- Enterprise and innovation;
- Tourism and recreation;
- Multifunctionality of agriculture; and
- Business infrastructure.

The main indicators of economic structure pertain to both employment and output per employee within different economic sectors. The emphasis on these indicators is no longer on analysing the sectoral employment share of the primary sector in rural areas, but the degree to which the 'new economy' is prevalent, including tourism-dependent sectors, producer services, high technology manufacturing and quality value added activities.

The Rural Labour Market: The following change indicators are applied across all Member States at regional level (NUTS II or III level):²

- Unemployment rate;
- Participation rate;
- Self-employment;
- Long-term unemployment change;
- Educational attainment rate.

Enterprise and Innovation: Business vitality, in terms of density of businesses and turnover of businesses, can have a direct impact on the economic well-being of a territory. A focus on local entrepreneurship is concurrent throughout the EU and many national regional development policies.

² NUTS = Nomenclature of Statistical Territorial Units.

Business Infrastructure:*Level of provision:*

- Number of Internet service providers (ISPs) within a territory;
- Provision of Integrated Service Digital Network (ISDN) and Asymmetric Digital Subscriber Line (ADSL) in a territory based on capacity and speed;
- Annual subscription cost of ISDN, ADSL and other broadband technology.

Level of usage;

- Number of ISDN, ADSL, cable subscribers by businesses within a territory;
- Number of Internet hosts and business subscribers to digital services;
- Turnover of business generated from the Internet;
- Number of home and work-based Internet users (and e-mail).

Tourism in Rural Development: Tourism is now viewed as a key rural industry within Europe. The countryside is recognized as an important resource for leisure pursuits for the domestic market, in addition to overseas visitors. Yet the indicators that are used to measure the supply and demand of tourism in rural areas continue to be limited. Tourism, as an activity, affects a range of policy areas: employment, regional development, education, environment, consumer protection, health, safety, culture, new technology, transport, finance and taxation. However, tourism remains difficult to define and measure, particularly in terms of its contribution to the national economy given that many of the commodities produced and consumed are subsumed within other elements and sectoral shares in national accounting systems.

The major statistics collected on tourism can be divided into supply and demand. Different tourism dimensions can be summarised as follows:

- Physical features of consumption;
- Physical features of supply;
- Employment features;
- Other monetary features, e.g. tourist expenditure.

Multifunctionality of agriculture: The multiple functions of agriculture (MFA) are critical issues for rural development indicators to capture and measure. As a sector, concerns relate to population maintenance, employment, landscape, environmental quality, and tourism and other non-production-related functions. Under rural development, research focuses on the social and economic functions of agriculture, largely excluding landscape and environmental quality, although these are critical dimensions of MFA. There are three key areas that socio-economic indicators can address: farm household employment; agricultural diversification and agricultural productivity.

The diversification of **farm household employment** into non-farming activities, where the unit of analysis is the farm household, constitutes one set of indicators. Under tourism, indicators of the role of tourism related enterprises on farms have been highlighted. Similarly, farm household employment and income from other non-farming enterprises are being measured. Measurement of changes in employment, time input, and turnover generated from alternative activities on assisted holdings, compared to non-assisted holdings, will be key evaluation indicators for the programmes.

A second set of indicators concerns the **diversification of primary production** on the farm holding, reflected in measurements of the uptake of agri-environment schemes, forestry and organic aid schemes. Usually calculated on a number of holdings and area basis, the indicators are expressed for policy-supported holdings. For example, typical indicators of organic farming include 'certified organic and in-conversion

land area and holdings,' the percentage of utilizable agricultural area (UAA) devoted to organic farming, and its evolution.

Although there is a wealth of efforts to measure the impact of agriculture on the environment, there have been fewer efforts to capture the impact that agriculture's habitat and species maintenance efforts have had on public goods. Indicators of habitats and species are currently restricted to proxy measures, such as the area of national, EU or Internationally designated areas. Although not used in this context, the population of farm birds, for example, could be an indirect indicator of farming's multifunctional role, based on the existence of values stemming from an altruistic concern for the environment (although this may be more applicable to urban residents, than rural). Other examples could include area of farmland maintained as woodland, plant diversity, hedgerows and organically farmed area. Difficulty in providing any scientifically sound calculation of the value of public goods may, in part, explain why such indicators are not utilized.

A third set of indicators concerns measurements of **farm structure (inputs) and productivity** (output). Farm employment structure by EU land use categories are the most common indicators of resources, along with the form of farm tenure and total income from farming. Farm productivity is measured using output per hectare and output per employee and includes changes over time. There is little variation in the indicators used between countries, although some are able to produce data at finer spatial scales than others.

The proposed set of indicators is shown in Table 1 in Annex 4. This table could very well be amended to include columns for the geographic classes (such as "rural" and "urban" or "predominantly rural regions," "intermediate regions" and "predominantly urban regions") because every indicator applies equally to each type of geography.

V.3.2 Indicators suggested in the Hay report

The Hay report (2002) stresses that there are significant problems concerning data availability even though it was not expected that data for all the variables would, in the first instance, exist at a NUTS 3 level or lower.

Much of the data, however, does not go beyond NUTS 2. This is a recurring problem for many of the required variables, with data for several only provided/collected at country level (NUTS 0) rather than district level (NUTS 3) or even regional level (NUTS 2). In fact, for a total of **fifty-eight indicators**, with the current data available, only **seven** of these can be calculated at NUTS 3.

Even when data is collected at NUTS 2 or NUTS 3 level there are problems with lack of harmonization. Data may exist, for example, for some countries in the years 1994 and 1996, and yet, for others it is only available for 1995 and 1997, thus making a country comparison for the same year impossible.

To add further confusion to the issue, in the years that NUTS 3 or NUTS 2 data exists there are often internal country data gaps. Although data may be provided at either NUTS 3/2 for a certain year, it might not be a 'full set', with possibly one fifth of the data missing.

In addition, for certain variables some countries simply do not provide data - for any year or at any NUTS level. In such cases a study of the EU-15 becomes instead a study of the EU-9 or EU-10. What makes this issue more difficult in terms of a country comparison is the fact that the data for the remaining

EU-9 or EU-10 will contain many of the problems mentioned above and, therefore, data will be neither complete nor satisfactory for the purposes of analysis.

Table 2 in Annex 4 lists the indicators suggested in the Hay report. Again, these indicators could also be applied to characterize urban areas.

Based on the Hay report and the PAIS project, themes and indicators that were selected by Eurostat are shown in Table 3 in Annex 4.

V.3.3 Common indicators for monitoring rural development programming – midterm review

Agenda 2000 required Member States and regions to undertake a midterm review of their rural development programmes, based on common guidelines and indicators, to be submitted to the Commission no later than the end of 2003 (EC, 2003a; 2003b). The purpose of this is, of course, to assess how well the assistance has performed with regard to the achievement of objectives *vis-à-vis* the different categories of beneficiaries (EC, 2002).

The guidelines for the evaluation reports include an explanation of the methodologies applied, including the implications for the quality of the data and the findings, and the sampling techniques and sources that are used to collect the data. Moreover, it is required that optimum use be made of so-called secondary data, i.e. data that exist already, for example from the monitoring system. If primary data are used they must be based on representative sampling techniques.

Table 4 in Annex 4 contains a list of the common evaluation questions. In agreement with Member States, the European Commission has drawn up a series of common indicators for monitoring rural development programming for the period 2000-2006. These indicators and explanatory guidelines on how to complete the common rural development monitoring indicator tables can be found at the following Internet address: http://europa.eu.int/comm/agriculture/rur/eval/index_en.htm

V.4 The World Bank

For developing countries it is suggested that core indicators are selected from the following five themes.

- Basic socio-economic data;
- Enabling environment for rural development;
- Broad based economic growth for rural poverty reduction;
- Natural resource management and biodiversity;
- Social well-being (education and health).

These themes, and the proposed indicators under each theme, are partly derived from the set of indicators suggested by World Bank experts, which is shown in Annex 5. The indicators selected are largely determined by the availability of data and the particular policy issue that is to be addressed.

Many of the indicators listed in Annex 5 are highly correlated. From a resource point of view it makes good sense to identify those correlated indicators and only select one or a few from each group.³ For the regular monitoring of rural development it is also important that complementary indicators are selected from each theme and that these indicators can be regularly measured.

For a great deal of the indicators listed in Annex 5, data are most probably not available on a regular basis. However, as is discussed in Chapter VI, when designing population and housing censuses, agriculture censuses, household budget surveys, labour force surveys and other types of survey, the data needs for constructing a selection of these indicators should be covered by the surveys.

V.5 FAO

Table V.3 lists the World Conference on Agrarian Reforms and Rural Development (WCARRD) set of primary indicators. The indicators marked with an asterisk are the “core” indicators for use in monitoring poverty alleviation.

³ Principal component analysis (PCA) constitutes a **tool for evaluating and presenting the redundancies or associations between several continuous variables** (measured by the correlation coefficient) and is often **used to graphically represent and summarize the key features of a dataset**. Thanks to this descriptive method, datasets with a large number of variables can be analysed and summarized graphically, revealing the underlying structure of the data. Source: http://training.creascience.com/product_info.php?products_id=45

Table V.3
The WCARRD list of primary indicators

| | |
|-------------|--|
| I. | Poverty alleviation with equity |
| | <u>Income/consumption</u> |
| 1. | Percentage of population in households with per capita income below the poverty line * |
| 2. | Percentage of income accruing to each fractile (decile/quartile) of the population * |
| | <u>Nutrition</u> |
| 3. | Percentage of children aged 1-5 years in groups less than: * |
| | 80% weight-for-age |
| | 90% height-for-age |
| | 80% weight-for-height |
| 4. | Percentage of under-nourished population * |
| | <u>Health</u> |
| 5. | Infant and child mortality rate * |
| 6. | Percentage of the population in villages/communities with at least one health auxiliary |
| | <u>Education</u> |
| 7. | Adult literacy rate * |
| 8. | Primary school enrolment and completion rates |
| | <u>Housing</u> |
| 9. | Percentage of rural household with specified housing facilities, e.g. piped water, electricity and sanitation facilities |
| | <u>Access to community services</u> |
| 10. | Percentage of population living in villages/communities with access to: potable water, public health services, primary schools * |
| II. | Access to land, water and other natural resources |
| | <u>Access to community services</u> |
| 11. | Percentage of number and area of agricultural holdings by size groups and tenure * |
| 12. | Percentage of heads of rural households without land * |
| 13. | Average wage rate of agricultural labourers * |
| 14. | Rate of unemployment and under-employment |
| 15. | Percentage of landless agricultural labourers to the population economically active in agriculture * |
| III. | Access to inputs, markets and services |
| 16. | Percentage of rural households receiving institutional credit |
| IV. | Development of non-farm rural activities |
| 17. | Percentage of economically active population engaged in non-agricultural activities in the rural areas |
| V. | Education, training and extension |
| 18. | Number of rural (including agricultural) extension personnel per 1,000 holdings/households |
| VI. | Growth |
| 19. | Annual rate of population growth |

Source: FAO.

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VI DATA SOURCES

VI.1 Introduction

Rural development statistics are concerned with the measurement of a multitude of heterogeneous variables, in the areas of demography, geography and territorial descriptions, environment and, above all, the whole spectrum of economic and social well-being, from a multitude of different sources. In fact, rural development statistics draw from almost all statistical fields. Yet, few of the agencies responsible for these statistics have rural areas in mind when designing their statistical systems. This creates two major problems: first, the **various data sources are often not designed in such a way that they can accommodate the various requirements of rural development statistics**, in particular sufficient geographical background. Labour and educational statistics, for instance, might very well be timely and have detailed breakdown of types of employment and education but only on a national level or, in the best case, major regions. They may not be available at smaller administrative levels such as communes, which are the basic units in rural development statistics.

To be useful for rural development statistics, surveys and other sources of primary data must contain the rural-urban code that is most appropriate for analysing rural development or contain codes with sufficient geographic specificity so that an analyst can create such a code. This is generally less of a problem where the statistics for rural development are analysed by the statistical agencies that carry out the survey, as confidentiality is not an issue. However, where rural analysts use publicly released versions of data and geographic specificity is limited, survey data may be made largely useless for rural analysis if the relevant geographic codes are not part of the data set. Thus, if the survey defines "rural" as outside of urban localities of 2,000 or more inhabitants, this cannot be used where the analyst is concerned with rural regions which are outside the immediate influence of major urban centres.

Whatever definition of rural is used, the actual territory classified as rural inevitably changes over time as the most rapidly growing rural areas cross the size and/or density threshold to become urban. Ideally, during transition years, surveys carry both new and old delineations of rural and urban. At the very least, in reporting a statistical series, years when the delineation was changed need to be noted.

National level surveys are constructed to represent the nation as a whole. Typically, sampling units are grouped or stratified on the basis of political and/or geographic characteristics and selected at random from within groups. Within these units, the sampling frame is then updated to take account of new and vacated housing units and a sample is then identified for interviewing. Survey sampling and interviewing costs are lower to the extent that the sampling is clustered, with fewer sampling units used for a given total expected sample size. However, especially where effectiveness of the stratification in capturing geographic variation is weak, reducing the number of sampling units reduces the representativeness of the survey respondents. This sampling design may result in samples that do not well represent the populations of rural regions or areas, particularly if sampling units are not stratified along rural-urban lines. Moreover, surveys selecting different sampling units over time can yield results that vary over time even when no actual change is present.

A related problem is that rural development statistics often have to **combine data from different sources**, sources that may differ in definitions, coverage, precision, measurement period and periodicity. Statistics on employment may differ depending on the source (household surveys, establishment (business) surveys, or administrative records). The problem is compounded when data from two or more sources are combined to form an indicator. Even combining national accounts data with employment and foreign trade data is problematic despite the close complementary nature of these statistics. When constructing rural

development indicators where the nominator and the denominator are based on different data sources, much attention must be paid to explaining the consequences of this on the results of the indicator.

A good example of mixing data sources is provided by the International Labour Office's (ILO's) new agricultural labour productivity indicator (Key Indicator of Labour Market (KILM) 18e) which is largely derived from the Groningen Growth and Development Centre (GGDC) Database at the University of Groningen (the Netherlands).¹

When comparing rural indicators between countries other problems are added. Countries tend to use different definitions of rurality and degree of rurality as well as of key concepts such as household. Even among quite similar countries, for instance in the European Union, there is a wide span in the definition of household: people living under the same dwelling whether or not there are family ties, sharing of expenditures, pooling of income, the existence of family or emotional ties or a combination of one or several of these characteristics. There may also be big differences in the child-adult definition and how much weight is given in the household aggregate. (See Chapter IX of this Handbook for a further discussion of these issues.)

Also when it concerns the variables for which the household is characterized there is a great span in the definition among countries. This indicates that care should be taken when comparing indicator levels between countries and suggests a **focus on comparing changes in indicator levels between countries**, in particular if there is relative national stability in the calculation of indicators over time. While, for instance, price statisticians might be confident in presenting estimates of price changes for country comparisons, they are not that keen on comparing levels because like is not always compared to like.

The rest of this chapter reviews the main data sources used, singly or in combination, to generate rural statistics. The discussion attempts to cover both OECD members and developing countries.

VI.2 Population and housing censuses

Censuses covering the total population and housing stock are indispensable for providing statistics on the population, family, household and housing situation on a uniform basis for small areas and sub-groups. The characteristics of the population include geographic, demographic, economic, educational and household and family characteristics. For many countries, a traditional census is vital for providing such information and often there are no viable alternatives. Registers and other administrative sources are an alternative to the traditional census as far as they contain the relevant topics, definitions and classifications and cover the entire population. Sample surveys used alone cannot provide equivalent data for small areas, but they can be used in combination with a census or to supplement census information on specific topics.

For rural development statistics, censuses are an invaluable source of data because of their complete coverage of the population, at least for basic demographic statistics, which permits a breakdown to small geographical units. The main disadvantage is the long time periods between the individual censuses, normally five years. Another disadvantage is that they are usually not sufficiently detailed with respect to

¹ The GGDC has long-standing expertise in development and analysis of data on productivity performance, in particular on comparisons of levels of productivity by sector and industry. A full documentation of sources and methods by economy and underlying documentation on the use of purchasing power parity, etc., can be downloaded from the Internet site of the GGDC. Website: <http://www.eco.rug.nl/ggdc/>

expenditures, consumption and income patterns. As will be seen, however, this can be attenuated by conducting household budget surveys linked as sub-samples to censuses.

Box VI.1

An example of mixing data sources

ILO's new agricultural labour productivity indicator (Key Indicator of Labour Market (KILM) 18e

For the OECD economies, most of which are included in the KILM 18 tables under the headings of "major Europe" and "major non-Europe", GDP and labour compensation are mainly obtained from the OECD: *National Accounts*, Volumes I and II (annual issues). Employment estimates for the aggregate economy are mostly taken from OECD: *Labour Force Statistics* (annual issues), and for the individual sectors – as far as available – from the OECD: *National Accounts*, Volume II (annual issues) and the OECD: Structural Analysis (STAN) database. The estimates available from the OECD, which originally were obtained from national statistical offices and, where possible, harmonized for differences in concepts and industry classifications, have been supplemented, where necessary, with national accounts statistics obtained directly from the individual economies. For some economies, the database of the United States Bureau of Labor Statistics (BLS) was used, in particular for estimates on employment and for manufacturing.

For non-OECD economies, the national accounts and labour statistics publications of individual economies were often taken as the point of departure. The statistics from these sources were used to supplement statistics from international organizations such as the World Bank, the Asian Development Bank, the ILO and the United Nations Statistical Office. In the estimations for agriculture, forestry and fisheries, international sources served as the point of departure. Intensive use was also made of the FAO Database from the Food and Agriculture Organization of the United Nations (FAO). However, where it was possible to disaggregate the group to provide estimates for agriculture and forestry (without fisheries) and for agriculture (without forestry and fisheries), data came mostly from national sources. In addition, benchmark estimates of annual hours worked for a significant number of non-OECD economies have been developed.

The estimates for agriculture, forestry and fisheries (AFF), which are of an experimental nature and include as many as 112 economies, are based on measures of purchasing power parity (PPP) taken from a FAO database of prices received by farmers for about 180 products in 1995. These prices refer to farm-gate prices or first-point-of-sale prices, and in principle do not include transport costs or the profit margins that generally accrue to intermediaries. The PPPs for the farm sector are assumed to be representative of the fisheries and forestry industries. As for the aggregate economy, the PPPs for AFF are multilateral, using a Geary-Khamis weighting system. In contrast to the estimates for the aggregate economy and for the other sectors, the estimates for AFF are not backdated to provide them at a 1990 price level (KILM, 2004; van Ark and Monnikhof, 2000).

There are several international sets of recommendations which provide guidance and assistance to countries in planning the content of their census. These recommendations also facilitate and improve international comparability through the harmonization of data, definitions and classification of topics. To this end readers may wish to consult the following:

- **Recommendations for the 2000 Censuses of Population and Housing in the ECE Region.** Jointly prepared by the United Nations Economic Commission for Europe and the Statistical Office of the European Communities, United Nations, New York and Geneva, 1998. Statistical Standards and Studies – No. 49.

- **Principles and Recommendations for Population and Housing Censuses**, Statistical Papers, Series M, No. 67/ Rev.1, United Nations.

The scope of the UNECE/Eurostat joint Recommendations is limited to the following three elements: (a) a list of “core” topics which countries should cover in their censuses, and recommended definitions and classifications for each of the core topics; (b) a list of “non-core” topics which countries may wish to consider including in their censuses, and suggested definitions and/or classifications for some of the non-core topics, and (c) a basic set of tabulation programmes.

The data collection could involve both a short form (with selected questions) and a long form (with more questions). The long form is completed for a sample of households or people. Alternatively, one form could be used, but when this is done, a sample is often selected for processing certain questions: for example, those which could be costly to process, such as industry and occupation.

Some countries are using registers and other administrative sources, together with information from sample surveys, to provide census-type statistics. Other countries are able to collect all relevant information by combining data from different registers. Still other countries can get part of the information from registers and other administrative sources - often information on persons - but have to supplement these by using questionnaires, particularly as there are difficulties in putting new items required for statistical purposes into administrative registers.

Six units of enumeration may be used in population and housing censuses tables:

- (a) Persons;
- (b) Private households;
- (c) Institutional households;
- (d) Family nuclei;
- (e) Living quarters (i.e. housing units and living quarters other than housing units, such as institutions); and
- (f) Buildings.

In statistical terms, these concepts are clearly distinguishable, and the terms are not themselves interchangeable. Some households contain more than one family, several households may live together in a housing unit and, exceptionally, a single household may occupy more than one housing unit as its usual place of residence. Similarly, a building may contain several housing units and a housing unit may, exceptionally, be located in more than one building, for example, in the case of dwellings comprising a main building and a room or rooms above a detached garage that are clearly designed to be used as part of the dwelling. (See also Chapter IX of this Handbook.)

The UNECE/Eurostat Recommendations contain the following 29 core topics. Those that are of particular importance for rural development statistics are briefly annotated. There are also 52 non-core topics recommended for countries that have the means of covering them. Some of these are also briefly mentioned.

Geographic characteristics of persons

1. **Place of usual residence**
2. **Place of usual residence one year prior to the census**

Demographic characteristics of persons

3. Sex
4. Age
5. Legal marital status
6. Country/place of birth
7. Country of citizenship

Economic characteristics of persons**8. Current activity status**

This is the current relationship of a person to economic activity, based on a brief reference period, preferably the previous week. The use of the “current activity” is considered most appropriate for countries where the economic activity of people is not influenced much by seasonal or other factors causing variations over the year.

The “currently active population” (the “labour force”) comprises all persons who fulfil the requirements for inclusion among the employed or the unemployed. “Employed” persons comprise all persons above a specified age who, during the reference period, performed some work for pay or profit, in cash or in kind, or were temporarily absent from a job in which they had already worked and to which they had a formal attachment, or from a self-employment activity such as a farm, a business enterprise or a service undertaking. The census documentation and tabulations should clearly describe the time limit chosen as the cut-off for considering persons to be “at work.” According to the present international recommendations, the notion of “some work” should be interpreted as work for at least one hour during the reference period. The one-hour criterion is an essential feature of the labour force framework embedded in the international definitions of employment and unemployment, and a prerequisite for the consistency of employment statistics with national accounts data on production. Countries concerned about the usefulness of the one-hour criterion for other users of census results should also collect data on “time worked.”²

9. Time usually worked**10. Occupation**

“Occupation” refers to the type of work done in a job. “Type of work” is described by the main tasks and duties of the work.³

² “Labour force, employment, unemployment and underemployment” were subjects considered at the 13th International Conferences of Labour Statisticians in 1982. It resulted in a resolution, which represents the current ILO recommendations on the subject (source: <http://www.ilo.org/public/english/bureau/stat/techmeet/icls/subjects.htm>).

³ An original ILO (LABORSTA) database was compiled from responses to a questionnaire sent to countries that were known to have coded the variable “occupation” using more than 20 occupational groups in their last Population Census or Labour Force (or Household) Survey. The ILO only included in the original database those countries that provided adequate data by sex for at least 15 occupational groups. This reduced the number of countries included to 40: six that provided data for only one year, 20 for two years and 14 for three. Geographical representation was unequal: only five African countries, two Latin American and two Caribbean countries provided data, in contrast with nine Asian and 18 European countries.

The updated ILO database was compiled from responses to a similar questionnaire sent to all countries. With this strategy the ILO managed to increase the total coverage to 85 countries and territories of which there were: 11 in Africa, 15 in the Americas, 4 in the Arab region, 13 from other Asian countries, 18 from Transition Economies, 20 from other

11. Industry (branch of economic activity)

“Industry (branch of economic activity)” refers to the kind of production or activity of the establishment or other unit in which the job(s) of the economically active person was located (or, in the case of unemployed, last located). For purposes of international comparability, it is recommended that countries compile the industrial characteristics of active persons according to the latest revision of the International Standard Industrial Classification of All Economic Activities (ISIC) available at the time of the census.

12. Status in employment

“Status in employment” refers to the type of explicit or implicit contract of employment with other persons or organizations, which the person has in his/her job. The basic criteria used to define the groups of the classification are the type of economic risk, an element of which is the strength of the attachment between the person and the job, and the type of authority over establishments and other workers, which the person has or will have in the job. Care should be taken to ensure that an “economically active” person is classified by “status in employment” on the basis of the same job(s) as used for classifying the person by “occupation,” “industry” and “sector.”

It is recommended that the economically active population be classified by status in employment as follows:

1. “Employees”, among whom it may be possible to distinguish “employees with stable contracts” (including “regular employees”);
2. “Employers”;
3. “Own-account workers”;
4. “Contributing family workers”;
5. “Members of producers' cooperatives”;
6. “Persons not classifiable by status”.

It is also recommended to identify separately “Owner-managers of incorporated enterprises,” who normally will be classified among “employees,” but whom one may prefer, for certain descriptive and analytical purposes, to group together with “employers.”⁴

European countries and 4 in Oceania, for years around 1970 (58 countries), 1980 (52), 1990 (58) and 2000 (47). Most of the statistics that were provided were based on census results (ILO, 2003a; 2003b).

⁴ The ILO also provides an indicator of status in employment, which distinguishes between three important and useful categories of the total employed. These are: (a) wage and salaried workers (also known as employees); (b) self-employed workers; and (c) contributing family workers (also known as unpaid family workers). These three groups of workers are presented as percentages of the total employed for both sexes and for males and females separately. Information on the subcategories of the self-employed group – self-employed workers with employees (employers) and self-employed workers without employees (own-account workers) – is not available for all economies but is presented wherever possible.

The indicator on status in employment is available for most developed (industrialized) and transition economies, as well as for many Eastern Asian, Latin American and Caribbean economies. Unfortunately, there are only a few sub-Saharan African economies for which this indicator is available and, where coverage does exist, extensive time series are lacking. Currently, information is also unavailable for some large developing economies, such as China and India. Information for the indicator, at least to some extent, is available for 129 economies (source: <http://www.ilo.org/public/english/employment/strat/kilm/kilm03.htm>).

13. Place of work

Place of work is the location in which a “currently employed” person performs his/her job, and where a “usually employed” person currently performs or last performed the job. While the information on place of work can be used to develop area profiles in terms of the employed labour force (as opposed to demographic profiles by place of residence), the primary objective is to link the place of work information to the place of residence. Therefore, the place of work should relate to the smallest civil division in which the economic activity is performed in order to establish commuter flows from the place of usual residence to the place of work.

A non-core topic related to place of work is **mode of transport to work**, which relates to the daily journey made. For people making several journeys or using more than one mode of transport, the mode of transport used for the greatest distance in the journey should be indicated.

Another non-core topic, which is important for rural development statistics, is **length (in distance and time) and frequency of journey to work**.

Educational characteristics of persons

14. Educational attainment

For purposes of international comparisons, it is recommended that countries compile their data in accordance with the latest revision of the **International Standard Classification of Education (ISCED)**.

“Educational attainment” refers essentially to the highest level successfully completed in the educational system of the country where the education was received. If relevant, “educational attainment” should take into account all deliberate, systematic and organized communication, designed to bring about learning, even if these were provided outside schools and universities.

At least four levels of education should be normally distinguished: primary; secondary - first stage; secondary - second stage; and post secondary. Persons who have received no formal schooling should also be identified. Ideally, educational statistics should be based on the working age population.⁵

⁵ The ILO covers two relevant indicators: KILM 11 on unemployment by educational attainment and KILM 14 on Educational attainment and illiteracy.

KILM 11 focuses on unemployment among workers categorized by their level of educational attainment. Specifically, the indicator is the percentage distribution of an economy's total unemployed according to five levels of schooling - less than one year, less than primary level, primary level, secondary level and tertiary level. Coverage for the indicator is sparse for sub-Saharan Africa, the Middle East and North Africa. Many economies of Asia and the Pacific are also missing.

KILM 14 reflects the levels and distribution of the knowledge and skills base of the labour force. The indicator includes two measures pertaining to educational level of the labour force, and a third measure estimating illiteracy in the adult population. The indicator covers the educational attainment of both women and men in the entire labour force and shows the distribution of the educational attainment of the labour force aged 15 years and above for 104 economies (sources: <http://www.ilo.org/public/english/employment/strat/kilm/kilm14.htm> <http://www.ilo.org/public/english/employment/strat/kilm/kilm11.htm>).

Household and family characteristics of persons

Countries are recommended to use the place of usual residence as the basis of household membership. If only *de jure* information is available (e.g. from registers) on place of residence, i.e. no information is available on usual place of residence, then that information can be used (alone or in combination with other information from other sources) provided that it is judged to reflect the usual residence situation sufficiently accurately.

The concept of “usual residence” is not without ambiguities. Are children away at school or post-secondary school still considered residents of their parents’ locality or are they residents of the place where they are schooled? In general, the latter is preferred as that is the residence at the time of the census or survey.

A private household is either:

- A one-person household, i.e. a person who lives alone in a separate housing unit or who occupies, as a lodger, a separate room (or rooms) of a housing unit but does not join with any of the other occupants of the housing unit to form part of a multiperson household as defined below; or
- A multiperson household, i.e. a group of two or more persons who combine to occupy the whole or part of a housing unit and to provide themselves with food and possibly other essentials for living. Members of the group may pool their incomes to a greater or lesser extent.

This concept of a private household, referred to as the housekeeping unit concept, requires some clarification on the distinction between “boarders” and “lodgers.” Boarders take meals with the household and generally are allowed to use all the available household facilities. Lodgers, however, are sub-tenants who have hired part of the housing unit for their exclusive use.

Some countries use a different concept of the private household in which the private household is equated with the housing unit. This concept of the household is referred to as the household-dwelling concept, and is defined as the aggregate number of persons occupying a housing unit.

The household-dwelling concept does not provide direct information on the number of housekeeping units sharing housing units. It is recommended that countries applying the household-dwelling concept give an estimate of the total number of housekeeping units in the census report. If the difference between the number of household-dwelling units and the number of housekeeping units is significant, these countries should also endeavour to analyse the occupants of housing units in such a way that they are able to compile the recommended basic tabulations relating to private households on the basis of the housekeeping unit concept. Countries should specify in their census reports whether they used the “housekeeping unit” or the “household-dwelling” concept of a private household. (Chapter IX of this Handbook contains a detailed discussion of different household concepts in the context of measuring the incomes of agricultural households).

15. Relationship to reference person

Information should be collected for all persons living in private households on their relationship to the reference member of the household. Data on this topic are needed for use in (i) identifying households and family nuclei; and (ii) compiling tabulations in which households are classified according to

characteristics of the reference member. It is left to countries to decide whether the reference member should be:

- The head of household or one of the joint heads;
- The person (or one of the persons) who owns or rents the housing unit or in whose name the housing unit is occupied under some other form of tenure or in whose name part of the housing unit is rented or occupied under some other form of tenure;
- An adult person selected with a view to facilitating the determination of family relationships; or
- A person selected on the basis of other criteria.

It is important that countries describe clearly in the census report the concept of the reference member that has been adopted and the definition that has been used. (Again, Chapter IX of this Handbook also discusses this issue in the context of statistics on the incomes of agricultural households).

16. Tenure status of households

Non-core topics which are important for rural development statistics in this context are durable consumer goods possessed by the household, number of cars available for the use of the household and access to telephones, computers and Internet.

Characteristics of housing units and other living quarters

- 17. Type of living quarters**
- 18. Type of ownership**
- 19. Location of living quarters**
- 20. Occupancy status**
- 21. Number of occupants**
- 22. Number of rooms**
- 23. Kitchen**
- 24. Water supply system**
- 25. Toilet facilities**
- 26. Bathing facilities**
- 27. Type of heating**

Characteristics of buildings containing dwellings

- 28. Type of building**
- 29. Period of construction**

For other issues with special importance for rural development statistics, it is recommended that information on place of usual residence should be collected in enough detail to enable tabulations to be made for the smallest geographic or administrative subdivisions required to meet users' needs for information on this topic.

In the UNECE/Eurostat Recommendations, it is suggested that countries which tabulate statistics only for civil divisions should, as a minimum, endeavour to compile data on the total population of each part of a civil division containing a population cluster, or part of a population cluster, of at least 2,000 inhabitants.

This will provide a basis for making a more clear-cut distinction between urban and rural areas and populations. Specific size classes are also suggested.

The **division** in urban and rural areas is a derived non-core topic in the UNECE/Eurostat Recommendations. The **most appropriate unit of classification** for distinguishing urban centres from rural areas is the **locality**.⁶ While it is left to countries to decide whether to use the locality or the smallest civil division as the unit of classification, countries which use the smallest civil division are encouraged to obtain results which correspond as closely as possible with those obtained by countries which use the locality as the unit of classification.

It is suggested that localities or similar units be grouped into the following five categories:

- Less than 2,000 inhabitants;
- 2,000 to 9,999 inhabitants;
- 10,000 to 99,999 inhabitants;
- 100,000 to 999,999 inhabitants;
- 1,000,000 or more inhabitants.

Countries are also encouraged to develop typologies of localities or similar areas based on additional criteria that could be used to distinguish different types of areas within particular categories of the suggested classification. Some countries may wish to subdivide one or more of the intermediate categories to distinguish market towns, industrial centres, service centres, etc. or to subdivide the large urban agglomerations in order to distinguish various types of central and suburban areas. Extensions of the classification in these and other ways would enhance its analytical usefulness.

It is also suggested that for purposes of international comparisons, countries define urban centres as localities with a population of 2,000 or more, and rural areas to include localities with a population of less than 2,000 and sparsely populated areas. However, for some purposes, a threshold of 10,000 residents may be more appropriate.

This Handbook recognizes as good practice that statistics on rural development should use regions as the geographical units of analysis rather than localities and open country areas. In industrialized countries, many people who now live in the countryside commute to major towns and cities for work. Their livelihoods are essentially urban livelihoods and they generally have access to a full range of urban services. At the same time, many small towns have lost urban functions as services have become more concentrated in urban agglomerations. Regions with only small towns may be considered rural regions even though some of the region's residents live in localities defined as urban on the basis of locality size. Urban regions typically have a large urban centre (50,000 or more population), while rural regions do not. However, one may also want to define intermediate regions on the basis of a city size of 10,000 or more and its commuting shed.

To enhance comparability across Member Countries, the OECD Territorial Indicators Project developed internationally comparable sets of regions based on population density of sub-regions and this is an alternative approach.

Some countries might also wish to consider defining urban areas in other ways (for example, in terms of administrative boundaries, of built-up areas, of the area for which services such as shops,

⁶ This does not necessarily mean that locality is the unit for analysis but rather the unit for classification aspects. Normally, one should use localities for analysis of local issues and regions for analysis of regional issues.

educational facilities, recreational facilities, employment, etc., are provided, or in terms of functional areas). Whatever approach is taken should be clearly described in the census report.

VI.3 Agricultural censuses and surveys

In many developing countries, most of the rural population depend directly or indirectly on agriculture for their livelihood. Censuses and surveys on the agriculture sector are major sources of data on the agricultural production units which are mainly household based. Similar to population and housing censuses, agricultural censuses are comprehensive investigations providing structural information on the agriculture sector for small geographical units. They have the same limitations as the population censuses, mainly the length of time separating two censuses (10 years as recommended by the FAO) and the lack of coverage of expenditures, consumption and income patterns. During the interval separating two censuses, more frequent agricultural surveys (using the census data as the benchmark and sampling frame) are usually conducted to update census results.

In many countries, despite the limitations indicated above, censuses of agriculture remain a major source of data on rural populations. The FAO, in consultation with other international organizations prepares the “World Programme for Agricultural Census” every 10 years. This provides updated guidelines on methods, concepts and definitions for the organization of agricultural censuses.

The new “2010 World Programme of Agricultural Census” being prepared by the FAO, adopts a modular approach which aims at helping countries to meet the need for a wider range of data from the agricultural censuses, while minimizing the cost of census-taking:

- A **core census module**, to be conducted on a complete enumeration basis,⁷ will provide a limited range of key structural items of importance for national policymaking, making international comparisons, constructing sampling frames, and analysing data at detailed geographic or other levels. The core module is similar to conventional agricultural censuses in the past, but with a much more restricted range of items.
- One or more **census supplementary modules**, to be conducted on a sample basis at the same time as, or immediately after, the core census module to provide more detailed structural data or data not required at lower administrative levels. The sample for the census supplementary modules will be selected based on sampling frames from the core census module.

Box VI.2 contains the items recommended for core and supplementary modules.

An important feature of the new approach for generating data on rural populations and areas is the provision made for the collection of infrastructure data at the community level in addition to holding level data. Emphasis is also given to integrating the agricultural and population censuses, not only through the use of standard concepts and definitions and sharing field materials, but also coordinating the two data collection activities, adding agriculture-related questions to the population census, and the linking of data from the two sources. Also, recommendations are made for countries that wish to broaden the census to all rural households.

⁷ For countries where a complete enumeration is not possible, the core module can be conducted on a large sample basis.

Box VI.2
FAO: World Census of Agriculture

Items recommended for the core module⁸

- 0001 Identification and location of agricultural holding
- 0002 Sector of agricultural holding
- 0003 Sex of agricultural holder
- 0004 Age of agricultural holder
- 0003 Sex of household members (paragraphs).
- 0004 Age of household members (paragraphs).
- 0005 Household size
- 0006 Main purpose of production of the holding
- 0007 Number of land parcels (paragraphs).
- 0007 Area of holding according to land use types
- 0008 Total area of holding
- 0009 Land tenure types on the holding
- 0010 Whether holding is irrigated
- 0011 Presence of temporary crops on the holding by crop type
- 0012 Presence of permanent crops on the holding by crop type and whether in a compact plantation.
- 0013 Number of animals on the holding by livestock type
- 0014 Presence of aquaculture on the holding
- 0015 Presence of forest and other wooded land on the holding
- 0016 Other economic production activities of the holding's enterprise

Items for consideration for the supplementary modules

Theme 01 – Land_(Reference group: holdings with land in Item 0008)

Theme 02 – Irrigation and water management_(Reference groups: Items 0201-0205 – holdings with irrigation in Item 0010; Item 0206 – holdings with temporary crops or permanent crops in Items 0011 and 0012; Item 0207 – holdings with land in Item 0008)

Theme 03 – Crops_(Reference groups: Items 0301-0303 – holdings with temporary crops in Item 0011; Items 0311-0314 – holdings with permanent crops in Item 0012; Items 0321-0327 – holdings with temporary crops or permanent crops in Items 0011 and 0012)

Theme 04 – Livestock_(Reference group: holdings with livestock in Item 0013)

Theme 05 – Agricultural practices_(Reference group: all holdings)

Theme 06– Agricultural services_(Reference group: holdings in sector “single-holding household” in Item 0002)

Theme 07 – Demographic and social characteristics_(Reference group: holdings in sector “single-holding household” in Item 0002)

Theme 08 – Farm labour_(Reference group: Items 0801-0814 – holdings in sector “single-holding household” in Item 0002; Items 0821-0823 – all holdings)

Theme 09 – Household food security_(Reference group: holdings in sector “single-holding household” in Item 0002)

Theme 10 – Aquaculture_(Reference group: holdings with aquaculture in Item 0014)

Theme 11 – Forestry_(Reference group: holdings with forest and other wooded land in Item 0015)

Theme 12 – Management of the holding (Reference group: holdings in sector “single-holding household” in Item 0002)

⁸ If the agricultural census is conducted in conjunction with the aquacultural census, an additional core item on area of aquaculture by type of site is included.

The new approach will make agricultural censuses a much more relevant source of data on rural areas and population. Since many farm households depend in part on off-farm income or income from family members living elsewhere, this approach will also aid in the assessment of the well-being of farm households (see Part II of this Handbook).

VI.4 Household budget surveys

The main sources for this section are: “Household Budget Survey in the EU. Methodology and recommendations for harmonization – 2003 (European Commission, Luxembourg, 2003)” and “Household Surveys in Developing Countries and Transition Countries, Implementation and Analysis (United Nations, New York).” There are two main objectives for a household budget survey (HBS). The first is to obtain weights, which are used for elementary aggregates in the construction of consumer price indices or in cost-of-living indices. The international recommended classification of the items of goods and services in HBSs is the United Nations Classification of Individual Consumption According to Purpose (COICOP) (UN, 2003). The HBS is also used as an input to the building of the national accounts for measuring the household final consumption at an aggregate level.

The second major objective of HBSs, which is the main interest in the present Handbook, is to provide detailed information on the **living conditions of private households** in defined areas and time. The surveys are meant to give a precise picture of private households' total consumption and expenditures broken down in various details as a function of household characteristics such as income, socioeconomic characteristics, size and composition, degree of urbanization, region, patterns of consumption between different types of household as well as information on levels of income, wealth and expenditures. Specific subpopulations such as the elderly, the young, rural populations etc. might be studied. In many countries the distribution of income and consumption is studied from the poverty perspective. Another usage in some countries is for the studying of nutritional patterns of households.

It is very common that special surveys are attached to the regular HBS, e.g. the use of ICT or Internet to take one example.

HBSs are very multi-purpose in nature and cater to a large number of users and uses. For rural development statistics, they are an invaluable source of data although in some countries they do not permit sufficient breakdown by regions and socio-professional categories (for example, farmers – see Chapter XIII of this Handbook). However, it is clear that HBSs have great potential for the improvement of rural development statistics. It is here that demands for special rural statistics and the required breakdown must be formulated. If this is done it is, however, in competition with many other statistical areas of interest, and there is a limit to how large the HBSs can be made. This implies that the demands from rural statistics must be well-formulated, consistent over time, be of interest to many users and be cost effective.

The frequency of HBSs varies greatly between countries, from annual surveys to surveys every five years or even every 10 years. In many countries the survey period is 12 months, that is, the survey is carried out continuously over the whole year.

As the basic unit for data collection is the household, even if dwellings or addresses happen to be the sampling units, the way households are defined is important. Normally the definition of a household is based on persons sharing an accommodation or address and/or sharing expenditures and/or income to various degrees. The family bond is another possible criterion. Even within homogenous groups of countries (for example, the European Union), different definitions might be applied. Whatever definition is reached, it has

to be made clear which categories of persons are included and which are excluded. The reference person of the household should also be defined as well as the child-adult setting.

The main characteristics of HBSs are briefly summarized in bullet form below:

- They are normally confined to the population living in **private households**.
- The **sample size** varies from a few thousands households to 50,000 in large European countries and to more than 100,000 people in the largest countries.
- **Probability sampling** is the recommended method, which is also used in most European countries.
- The most common practise is to use a **two-stage design** for sampling. First, a stratified sample of area units is selected by using probabilities proportional to size after stratification by geographical areas or by other variables. The second stage consists of the selection of households within each sample area. In countries with full-cover registers, a single stage sampling is used.
- There are a number of different approaches to **sampling frames**.
 - One approach is to **base the HBS as a sub-sample on another survey**, such as a labour force survey, or drawn from a master sample. This means that the HBSs can be linked to other surveys and that a wider range of data can be imputed and estimated. There is also an economic advantage of using such a sub-sample. There are, however, two major drawbacks. First, the response burden increases for the selected households.
 - Second, and this is related to the first drawback, is the effect on the response rates. It is generally necessary to restrict the HBS to those households that successfully completed previous surveys. For those countries that have sufficiently well-covered registers, a second approach is to use **registers** as the sampling frame.
 - A third approach is to use **area frames** such as a sample of areas from the population census or from a master sample, often constructed from the population census. By sharing between different surveys, the cost of developing and maintaining sampling frames might be reduced. There is also the advantage of operational linkages between different surveys.
- Normally, the **stratification criteria** are region, socio-professional categories of the reference person and household type or size.
- One of the major problems with HBSs is a high **non-response rate**, which might have serious implications on the reliability of the results. With a high rate of non-response it is common to undertake substitution.
- The recording of household data is usually done by a combination of **interviews** (in the EU usually two per household), **questionnaires** and **diaries**, in which households record all items of daily consumption and expenditures.
- The objectives of HBSs are to determine the level and structure of private households' expenditures or consumption or both. **Final consumption expenditure of households** is defined as:

Monetary expenditures intended for consumption + consumption of own production + benefits in kind + imputed rents for owner occupied housing.

Another, and possibly better concept, is the **actual final consumption expenditure of the household** which also includes acquisitions from governments and non-profit institutions servicing households (NPISH).

- For the measurement of various types of income (disposable income, net income etc.) and their components, see part II of this Handbook.

The list of variables in a HBS usually contains the following items at an aggregated level:

1. Demographic and geographical characteristics;
2. Characteristics of the household, household members and the reference person;
3. Education;
4. Insurance;
5. Indebtedness;
6. Economic activity;
7. Housing;
8. Possession of consumer durables;
9. Income;
10. Individual consumption by purpose.

HBSs are, as has been shown above, essential for many important statistical areas: national accounts, CPI, poverty statistics and rural statistics, just to mention a few. They are also, however, rather costly which puts the focus on cost-effectiveness. To this end there are two approaches to the design of the surveys: larger surveys every five years with say 5,000 households or surveys conducted on a continuous basis with say 1,000 households per year. In the latter model, data are accumulated over several years. For instance, data from three subsequent years might be aggregated and converted into annual results after having been adjusted for price changes. The advantage is that the workload is more evenly distributed and a smaller number of staff can be permanently engaged, which will increase their competence level.

VI.4.1 Living Standards Measurement Study surveys - an introduction

The overall objective of Living Standard Measurement Study (LSMS) surveys is the measurement and study of the determinants of living standards in **developing countries**, especially the living standards of the poor. To accomplish this objective, LSMS surveys must collect data on many aspects of living standards, on the choices that households make, and on the economic and social environment in which household members live. Much of the analysis undertaken using LSMS surveys attempts to investigate the determinants of living standards and this requires more sophisticated analytical methods than simple descriptive tables.

LSMS surveys have several characteristics that distinguish them from other surveys. One of the most important is that they use several questionnaires to collect information about many different aspects of household welfare and behaviour. These consist of a household questionnaire, a community questionnaire, a price questionnaire, and, in some cases, a facility questionnaire.

Another characteristic of LSMS surveys is that they typically are nationally representative, but use relatively small samples - usually between 2,000 and 5,000 households. This will yield fairly accurate descriptive statistics for the country as a whole and for large subareas (such as rural and urban areas or a few agroclimatic zones), but usually not for political jurisdictions (such as states or provinces). The surveys' sample sizes are generally adequate for the regression methods often used for policy analysis of LSMS survey data.

Because of their complexity, LSMS surveys have rigorous quality control procedures to ensure that the data they gather are of high quality. These procedures minimize any errors caused by respondent fatigue or the use of proxy respondents. The interviewer makes multiple visits to households to find any members who were not home during the interviewer's earlier visits. This also reduces the need to use proxy respondents.

There is one supervisor for every two or three interviewers. The supervisors must revisit a significant percentage (often 25%) of the sampled households to check on the accuracy of the interviewer's data. They must directly observe some interviews, and they must review each questionnaire in detail. The supervisor's assessment of these procedures is documented. Data entry and editing are done as soon as each interview is over. A data entry programme carries out a large number of quality checks to detect responses that are out of range or inconsistent with the other data from the questionnaire. Any problem this programme detects can be verified or corrected in a subsequent visit to the household by the interviewer (Grosh and Glewwe, 2000).

Components of a typical LSMS survey

One distinguishing characteristic of LSMS surveys is that they are multitopic and multilevel: they use several questionnaires to study many different aspects of household welfare and behaviour. The largest LSMS questionnaire is the household questionnaire. The LSMS household questionnaire always collects detailed information to measure household consumption, which is the best monetary indicator of household welfare. The household questionnaire also collects information on income and transfer income, while data on income from wage employment are collected in almost every LSMS survey. Further, many LSMS surveys also collect data on income from agriculture, household enterprises, and miscellaneous sources.

LSMS household questionnaires also record information on a variety of other dimensions of welfare and the use of social services (for example, housing and related amenities and the level of education of adults). A typical household questionnaire collects more information than this, in order to expand the range of living standards indicators that can be studied and allow researchers to model the choices households make. Some of the information (for example, consumption, housing quality and agricultural production) is collected only at the household level, but much of it (for example, employment, education and health) is collected at the individual level (Grosh and Glewwe, 2000).

VI.4.2 International Household Survey Network

The demand for household-based economic and social data by national as well as international agencies is constantly growing. In developing countries, HBSs are the most effective way of obtaining most of the information relating to well-being and poverty. However, surveys are complex and expensive undertaking, requiring skilled staff to design and manage them. In many poor countries surveys can only be undertaken with significant outside assistance, as in the case of the LSMS surveys. This means that the surveys are donor driven and often of an *ad hoc* nature, with surveys only conducted when donor funding is available. The most serious problem is that the activities among different donors are often not coordinated. There are many examples of duplicated or conflicting data collection activities, which result in a huge waste of funds and put a high burden on the scarce personnel resources in the statistical offices in the receiving countries. To this should also be added the need to improve the quality of household survey data.

In this context, an initiative of the World Bank is to establish an **International Household Survey Network**. This is designed to ensure better coordination between international and national donor agencies, on the one hand, and the receiving agencies, on the other. The aim is to facilitate the collection of more and better data, make better use of available data, increase the frequency of data collection, strengthen national

capacities in receiving countries and reduce costs. This comes at the price of less freedom of survey design by a particular donor and the loss of the associated prestige. It should be acknowledged that this is a reasonable restraint on the donor.

VI.4.3 Master sampling frames and master samples

Ad hoc scheduling of surveys has now been replaced in many National Survey Offices (NSOs) with long-range plans in which surveys covering different topics are conducted continuously or at regular intervals. The United Nations National Household Survey Capability Programme has played an important role in this process.⁹

Sharing of survey personnel and facilities among the surveys will make effective use of staff and facilities. The development of a master sampling frame (MSF) and a master sample (MS) for the surveys is often an important part of an integrated household survey programme.

For each unit there may be information on urban/rural classification and identification of higher-level units. For each area unit there must also be information on the boundaries of the unit.

The most common type of MSF is one with census enumeration areas as the basic frame units. Usually there is information for each unit that links the unit to higher-level units (administrative subdivisions).

An up-to-date MSF with built-in flexibility has advantages apart from the cost and quality aspects discussed above. It facilitates quick and easy selection of samples for surveys of different kinds and it could meet different requirements on the sample from the surveys.

The MS makes it possible to have overlapping samples in two or more surveys. This permits integration of data at the micro level by linking household data from the surveys. There is, however, a risk for adverse effects on the quality of survey results when sample units are used several times. Households participating in several rounds of a survey or in several surveys may become reluctant to participate or be less inclined to give accurate responses in the later surveys.

The MS design always represents a compromise between different requirements on the design from the surveys in the programme. The design chosen for the MS will usually suit most of the surveys in the survey programme fairly well but none perfectly well.

The most important source of data and materials will usually be the latest population census. This is obvious in the case where the NSO intends to use census enumeration areas as frame units but even if other (administrative) units are to be used there is usually a need for population or household data from the census for these units.

The quality of the MS deteriorates over time. The measures of size used for assigning selection probabilities become out-of-date as population changes take place. This would not be a problem if the population change were a more or less uniform growth in all units in the master sampling frame. However, this is usually not the situation. Population growth and migration occur at varying rates in different areas;

⁹ See latest report on Household Sample Surveys in Developing and Transition Countries (source: <http://unstats.un.org/unsd/hhsurveys/>).

often there is a low growth, or even decline, in some rural areas and a high growth in some suburban areas in the cities. For this reason the MSF is normally completely revised after each population census, usually every ten years. In some situations, however, it may be possible to use the MS for surveys concerned with the study of characteristics of economic units, such as household enterprises, own-account business and small-scale agricultural holdings.

In most developing countries a large proportion of the economic establishments in the service, trade and agricultural sectors are closely associated with private households. These establishments are typically many and small and widely dispersed throughout the population. There may often be a one-to-one correspondence between such establishments and households, and households rather than the establishments themselves may serve as the ultimate sampling units.

VI.4.4 Suggested integrated programme of household surveys¹⁰

The value of household surveys covering family status, access to services, economic activity, production practices, expenditure and social activity would be greatly enhanced if they were followed up by the routine use of panel surveys using sub-samples, in order to track performance. This approach would ensure comprehensiveness and consistency and avoid the use of excessive amounts of ad hoc, largely anecdotal data. It requires a long-term financial commitment by countries and international development partners. Some initiatives are under way which could help in this effort. For example, the Food Insecurity and Vulnerability Information Mapping System (FIVIMS), a UN inter-agency action, is working with countries to facilitate standard data collection for food security indicators to monitor follow-up to the World Food Summit in 1996.¹¹

One approach (see Vogel, 2004b) could be an important first step. Vogel proposes a framework and overall design of an integrated annual rural household survey programme, which would integrate a country's core statistical needs with those needed to monitor progress towards meeting the Millennium Development Goals (MDGs). The framework recognizes some of the MDG indicators and incorporates them as part of the core items and issues covered in the survey design. The survey design recognizes that there are core data items at the household level that need to be monitored every year but it also recognizes that there is no need to monitor other items every year because situations do not change that rapidly. There are two reasons for proposing an annual survey framework. One is to build a database of household data that can be used for analytical purposes for current and future policy and investment decisions, and especially to forecast the consequences of any proposed actions. A primary goal is to provide a survey framework that provides the data required to monitor progress towards meeting the MDGs, and more importantly, the inter relationships between them. Another goal is to foster statistical capacity building. When countries only do periodic household surveys, they receive training and technical assistance for that particular instance. However, when the survey is completed the sponsor or donor goes elsewhere, leaving the country without the capacity to continue.

Figure VI.1 provides a brief description of the proposed survey framework. It should be noted that the proposal suggests having a national level rural household survey to provide a cross-section of information over time. Further, the sample is divided into replicates with five being used each year. By the fifth year, each replicate will have been in the sample for five consecutive years.

¹⁰ This section includes an excerpt from the paper "Integrating Rural Household Survey" presented by F. Vogel at the 2004 MEXSAI Conference in Cancun (Vogel, 2004a).

¹¹ <http://www.fivims.net/index.jsp?lang=en>

Figure VI.1
Description of distribution of sample replicates by year and detailed questionnaire to be used

| Replicate Year | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 | Rep 11 | Rep 12 |
|-------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|
| 1 | A | A | A | A | A | | | | | | | |
| 2 | | B | B | B | B | B | | | | | | |
| 3 | | | C | C | C | C | C | | | | | |
| 4 | | | | D | D | D | D | D | | | | |
| 5 | | | | | A | A | A | A | A | | | |
| 6 | | | | | | B | B | B | B | B | | |
| 7 | | | | | | | C | C | C | C | C | |
| 8 | | | | | | | | D | D | D | D | D |
| 9 | | | | | | | | | A | A | A | A |
| 10 | | | | | | | | | | B | B | B |
| 11 | | | | | | | | | | | C | C |
| 12 | | | | | | | | | | | | D |

Detailed Questionnaires

- A. MDG 1. Poverty, Hunger, Employment, income
- B. MDG 2 & 3 Education
- C. MDG 4,5, & 6 Health
- D. MDG 7 Environment

Every replicate receives same core questionnaire every year

- A. (MDG 1) Indicators of progress towards eradicating poverty and hunger. This would also have information about employment and wage rates included in the October Inquiry. This would provide the primary data needed to enable the calculation of Purchasing Power Parities for the poor in conjunction with the International Comparison Program.
- B. (MDGs 2 and 3) Indicators of progress towards achieving universal primary education and gender equality for women.
- C. (MDGs 4, 5, and 6) Indicators of progress made to reduce child mortality, improve maternal health and combat diseases.
- D. (MDGs 7 and 8) Indicators at the household level to measure the consequences of improving the environment and improving the competitiveness of markets by removing distortions to trade.

Every sample household in every replicate will receive the same core questionnaire that will remain essentially the same over time. The core questionnaire will obtain information needed on an annual basis, have considerable year-to-year volatility, be important in monitoring food security issues, and provide an overview of progress towards meeting the MDG's. The design will provide longitudinal analysis of the core data so that short run evaluations of the effects of policy or investment decisions can be appraised.

The key to the design is that each year each household is also surveyed by a detailed questionnaire that rotates by subject matter each year. The variables to be measured on a rotating basis are those for which change would be difficult to monitor on an annual basis. During the period a household is in the sample, it will be queried by each of the detailed questionnaires at least once with one fifth of the households surveyed twice for one of the detailed questionnaires.

At the end of the fifth year a household in the sample will have been surveyed annually for the core items, once for each detailed questionnaire, and twice for one of the detailed versions. In this way the survey will provide a matching sample comparison over time.

VI.5 Labour force surveys

Labour force surveys are another important source for rural development statistics.¹² These surveys do not only focus on employment and unemployment characteristics but also on details of hours worked, type of work, economic activity, education and training, and income as well as a whole range of demographic variables. Labour force surveys may also contain various types of *ad hoc* modules related to specific urgent topics, such as computer use at home and at work. The units of measurement are both individuals and households. With households, it is important to record variables that describe their composition since the definition of household varies between countries.

Labour force surveys are the source that gives the most detailed information on labour market issues at an aggregate level as well as across economic sectors. However, for cost reasons, the sample size is normally not sufficient to provide reliable figures on regional disaggregation or for small industrial or commercial sectors. This is a serious drawback when using labour force surveys for rural development statistics. The problem may be partly overcome by linking the surveys to censuses and imputing territorial breakdown.

As previously mentioned, the definition of household differs between countries, which has implications for international comparisons. In order not to make things even worse, countries are recommended to use the available set of the most recent revisions of international standards such as:

- International Standard Industrial Classification of all Economic Activities (ISIC), United Nations;
- International Standard Classification of Occupations (ISCO), ILO;
- International Standard Classification of Education (ISCED), UNESCO.

In several countries, a significant proportion of the population work on their own small farm and **produce only for their own consumption**. Is such a person considered to be employed? Normally the

¹² A Labour Force Survey is a standard survey of work-related statistics. Statistics and metadata for some countries are available from the ILO [LABORSTA](http://www.ilo.org/dyn/lfsurvey/lfsurvey.home) database (Source: <http://www.ilo.org/dyn/lfsurvey/lfsurvey.home>).

definition of employment states that a person is employed if he/she did any work for pay or profit during the reference week for the survey. Work in this context means work for pay, payment in kind or profit during the reference week, even for as little as one hour. If production for one's own consumption falls within the production boundaries in national accounts (i.e. it is considered important in relation to the total supply of these goods), it should be considered as employment.

The **treatment of seasonal workers** is another aspect of employment that is important in all countries, but particularly for developing countries and for rural statistics. It is clear that during the off-season the seasonal workers should not be considered as being employed in the reference period as they do not continue to receive wages or salaries, even though they might have a contract or an assurance to return to work at a later stage. To capture seasonal fluctuations in employment, labour force surveys are often carried out quarterly or even monthly.

Labour force surveys are often the only source of information on underemployment, where people work part-time but would work more hours given the opportunity to do so. These surveys may also identify people who are not in the labour force, but would work if the opportunity arose.

Finally, labour force surveys are often the only surveys that ask about people with second jobs (such as farmers who also hold off-farm jobs), employment and unemployment over the past year, or other information that helps to better understand employment conditions, particularly in rural areas.

VI.6 Other survey sources

In developed countries where agriculture is rather marginal from an employment and economic sector perspective, **business surveys** and **structural business statistics** play a more dominant role as data sources than do farm surveys (dealt with above). These surveys, which are carried out frequently, can provide detailed information about the type of economic activities, their relative size in monetary and employment terms as well as their dynamics. However, the shortcomings are that they provide only a rather aggregated territorial breakdown, in the best case by major regions. **Statistical business registers**, which constitute the frames for business surveys, do contain information with a detailed territorial breakdown and these can be a very useful source for analysing rural business structure. The variables recorded for enterprises, besides information about location, type of business and owner structures are often limited to employment, wages, and gross output. This limitation could, however, be overcome by creating links between the business surveys and exhaustive processing of the data in business registers.

Health and education, which are also important variables with respect to rural development analysis, are partly covered in population censuses, HBSs and labour force surveys. However, for more detailed analysis **specialized surveys in health and education** are often required.

VI.7 Administrative registers

Administrative registers are another important source for rural statistics and have the advantage that they are readily available and are normally much less expensive to use than surveys. Despite the fact that they are subject to confidentiality laws with regard to how they can be used, they have wide national coverage and the administrative arrangements are such that relevant statistics can be extracted. It must be remembered that the definition of key concepts such as employment, unemployment and type of occupation might not be the same as those that would be used for statistical surveys, as the registers are set up for administrative purposes. In addition, the arrangements in administrative registers can change frequently,

leading to discontinuity. Finally, they also have the weakness that they have a purely national policy perspective. This means that, for instance, registers for social insurance systems vary greatly between countries.

However, in some countries, notably the Nordic countries, register data are very well developed and can produce excellent statistics as well as providing sampling frames. The type of registers mainly used for rural development statistics are population registers, tax registers (including VAT registers), vehicle registers, social security registers and insurance registers.

VI.7.1 Vital statistics records

Statistics on births and deaths are required to estimate net migration rates for a locality. If the population census only asks about residence in the previous year it provides only a very partial glimpse of migration. Moreover, since the number of people who migrate in a year is relatively small, estimates for small territorial units are likely to be unreliable. With vital statistics records, one may estimate net migration relatively precisely for the entire period between censuses, under the assumption that census population counts at the ends of the time interval were equally reliable. Care must be taken, however, that the residences recorded for births and deaths are the usual places of residence and match what is recorded in the census.

Infant and age-standardized mortality rates are sometimes used as health measures. However, death rates are often so low that frequently one has to average mortality rates over several years to obtain a reliable measure for small localities.

VI.8 Non-official statistics, e.g. from trade associations

For certain variables of interest for rural development statistics (for example, tourism, recreation, rural amenities, local business structures and supply of cultural activities), the available sources might not be from official statistics but rather produced by trade associations, local agencies and authorities, or societies and clubs (e.g. sport or cultural). If such information is used, much attention must be given to how the statistics were generated, what definitions were used, whether they are compatible with official definitions and how the data were collected and processed. In addition, the results might serve the interests of the collecting organization and may not be totally objective. An example of this would be data on the numbers engaged in certain cultural and educational activities where the results are tied to the provision of public or private funding for those activities. To this should be added that non-official statistics are often neither exhaustive nor based on probability sampling.

It is also problematical when statistics from these sources are combined with official statistics in order to create indicators. Here the rural statistician must be extremely careful and scrutinize compatibility and coverage of the sources. If such indicators are used, the statistician should clearly indicate not only sources, methods and individual metadata but also how the indicator should be interpreted and with what precision.

VI.9 GIS and geo-coded statistics

An increasing amount of information is being made available through Geographic Information Systems (GIS). These systems attach geographic identifiers to data, allowing them to be mapped. To visualize geographic congruence or other relationships, users can superimpose one map upon another, or

create a many-layered map. The standard road map, which often contains information about topography, cities and towns, and rivers and lakes as well as roads and highways, is a type of layered map. With GIS one might add a layer of soil type or agricultural products. This would provide information on how agricultural products vary with elevation and distance from a major town, for example.

All data attached to place or area, including data from censuses, satellite imaging, and geological studies, can be included as long as there are geographic identifiers (longitude and latitude) attached. For areas such as political jurisdictions, this means having “shape files,” which provide coordinates for the jurisdictional boundaries. This creates an enormously powerful analytical tool, as ecological data can be combined with demographic, economic, and social data relatively easily, once the system is established. It is also possible to extract data files relating to given types of localities. Thus, one could, for instance, create a table that crossed commune or township elevation with type of agricultural product or income.

Much of the information available through GIS systems is already available for standard geographic units (townships, communes, etc.). Thus, someone may already have created a data set with average elevation that could be attached to a land use file. However, the mapping of the data creates many new opportunities for the development of geographical or ecological indicators that remain largely unexplored.

First, GIS may be used to develop environmental measures for localities. Examples include the proportion of the territory that is occupied by a lake or pond (or, alternatively, miles of lake shoreline), average elevation, and topographic variation. All of these measures may relate to the attractiveness of the area as a place of residence. Other measures might include miles of autoroute or major roads in an area or road density.

Second, GIS may be used for generating information about distances and neighbouring areas. For instance, with a health facilities database in GIS and a road system layer, it would be possible to estimate driving times to a regional hospital for populations in territorial units lacking hospitals. Economic well-being of residents in territorial units may relate to job growth not only in the place or area of residence, but also in neighbouring territorial units that are within commuting range.

Third, GIS may be used to define new socio-economic units. For instance, with data on commuting or shopping patterns, one can use GIS to define labour market or market centre service areas and generate statistics for those areas.

Finally, GIS can be used to map information based on political units onto ecological units such as river basins or agricultural zones where these zones form the unit of analysis.

The application of environmental measures is not always straightforward. Distances or lengths that are measured can depend on how small the basic unit of measurement is. Variegated shorelines, for instance, vary in estimated length depending on the whether one selects a measurement unit that pick up every inlet or a measurement unit that will not. Much environmental data, such as climate and air or water pollution, is collected at data points. Statisticians have developed various methods such as “krieking” to estimate climate and air quality between data collection points, but these estimates are not necessarily precise where the terrain is mountainous or uneven.

VI.10 Conclusions and recommendations

This chapter has demonstrated that the rural development statistician must base his/her work on a **multitude of statistical sources**. This calls for the statistician to pay very strong attention to the:

- Definitions used in the various sources;
- Differences in coverage;
- Difference in precision;
- Problems of mixing sources in order to create indicators.

All sample surveys are subject to both sampling errors and non-sampling errors (unwillingness of respondents to provide correct answers, misunderstanding the questions, non-response, mistakes by the interviewers, miscoding etc.). It is therefore important that rural development statisticians indicate as far as possible the reliability of each of the sources used.

Survey data should be exposed to data checking, for instance by using **consistency check** programs. Of particular importance is that rural development statisticians be aware of how the particular survey has treated **missing data**, as these will seriously affect the quality of the data sets. There are several possible approaches to the problem of missing data. If the household or the person included in the survey cannot be re-interviewed, then the best solution is to impute the data. There are several methods available to achieve this. However, if for a particular household or person too many variables contain errors or are missing, that household or person should probably be removed. In this case the weighting has to be adjusted.

When procedures for the imputation of missing data, or correction of data, are used, the rural development statistician must clearly indicate which procedures have been used and how they might affect the results. If the rural development statisticians cannot control these issues (which is often the case), they should at least be informed how the particular survey has treated them, so that this is properly recorded in the metadata.

Though more an issue of publication than a characteristics of data sources, Statistical Disclosure Limitation (SDL) has become a major concern for statistical agencies as surveys and censuses are usually taken with an explicit understanding that personal or establishment information will not be revealed. Reasonable response rates depend on the belief that respondents have that their answers will be kept in confidence. There are numerous methods of SDL. For table presentation, the most frequent is to suppress data in cells with below a certain number of responses. SDL must be considered as a strategy, however, and not dealt with piecemeal, on a table by table basis, for instance. It is sometimes possible to combine information from different tables, sometimes released in different reports, to ascertain confidential information that is suppressed in any single table.

As has been pointed out several times, rural development statistics in this Handbook focus on the **well-being of the household** in various categories of territorial areas. As the household is the main statistical unit for which production, income and consumption is measured, the underlying definitions must be clearly indicated and tested for consistency as well as compared with other countries. In this Handbook it has been said that, as in many cases there are large variations in definition and coverage of variables between countries, **it may not be advisable to benchmark levels but rather to benchmark changes in levels.**

Within a country there might be quite significant differences in income between regions. In these cases there are normally also significant differences in price levels, in particular for housing, food and certain services. This calls for to the use as far as it possible of **income measures expressed in purchasing power.**

Comparison of the relative purchasing power between regions can be done in several ways using (Ball and Fenwick, 2003):

- **National weights**, which enables comparisons for a uniform basket of goods between regions and the national average as well as between regions;

- **Regional weights**, by pricing the cost of regional representative baskets. This enable comparisons to be made for a representative basket of goods for each individual region, compared with what that basket would have cost at national average prices; and
- **A geometric mean** of national and regional weights.¹³

Rural development statistics must be based on a multitude of statistical sources, which are not always compatible. This Handbook strongly endorses, as good practice, the publication together with the statistics of a detailed analysis of the sources and methods used, adequate metadata for the individual data cells, and a readers' guide, advising how the results should be interpreted and with what precision.

For international benchmarking the above should be recorded for each country. If incompatibilities exist, these must be clearly indicated, together with a guide to what extent data indicator levels can in fact be compared. If they cannot, only changes in levels of indicators should be recorded.

Because of the multitude of indicators, it might be tempting to construct a rural composite of indices for international benchmarking. This Handbook advises against such a practise.

¹³ Data for the United Kingdom showed that for the north-east region the national weights fell from 95.3 to 91.5 between 2000 and 2003 while for London they increased from 106.8 to 107.6 (national averages =100). For individual items there are of course even larger differences. The regional weight for housing, for instance, was 69.2 in the north-east while it reached 120.0 in the south-east.

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VII APPROACHES IN SELECTING A CORE SET OF INDICATORS

VII.1 Introduction

In Chapters III to VI of this Handbook, and in associated annexes, numerous examples of rural and rural development indicators, as defined by international organizations as well as by national agencies, were presented.

The selection of a particular set of indicators is based on:

- The policy issues under consideration;
- Which definition of rural is actually chosen (which also reflect policy concerns); and
- Data availability.

It is therefore not meaningful to present a recommended set of indicators, as such a set is “a moving target”.

Rather, the main purpose of this chapter is rather to provide a statistical **framework** to aid the identification and construction of a core set of indicators that will be useful to describe “rurality.” Establishing this framework involves drawing on and generalising from the material contained in preceding chapters. A degree of repetition is inevitable, at least as far as principles are concerned. At the end of the chapter, a list of suggested areas of general interest to the users (and thus also to the suppliers) of statistics on rural development is provided, with examples of indicators, based on considerations of operational feasibility.

Large numbers of statistical indicators are available to measure socio-economic phenomena. Many are put forwards in publications and on websites by national, international and independent institutions. Any indicator will provide information on some characteristics of the phenomena under observation. However, the selection of suitable indicators requires that account be taken of the **correlation** among the variables under consideration and the **measurability** of the specific indicators. The calculation of several highly correlated indicators is not useful either from an analytical or an economic point of view. Second, the selection of suitable indicators has to be done in relation to the particular focus of the present Handbook – that of **rurality**.

Summary indicators (developed from a combination of individual indicators) might also under certain circumstances be useful in order to provide an overall view of rurality. However, it is important when dealing with summary indicators to understand their composition and the limitations that arise from the way that they are constructed. The issue of weighting in the construction of synthetic indicators suggests a careful application of this kind of indicator and a requirement to make the components visible (for more information on this specific problem, see Chapter III.5).

VII.2 Two approaches in selecting indicators

There are two main approaches to selecting indicators that depict some aspect of the rural condition. These two approaches, in turn, rest upon two different conceptualisations of rurality – the sectoral and the territorial (see Chapter II.2 and II.3).

In one perspective of rurality, agriculture and other related or non-urban economic activities (fishing, lumbering, mining, etc.) characterize the rural world and what are considered rural areas. In this **sectoral approach**, rural households are defined according to their main economic activity (agriculture, forestry, mining etc.). It is then possible to apply rural indicators to this subpopulation of households and compare them to rural households in different regions, or to non-rural households in the same region. The sectoral approach is mainly used in developing countries where rurality is almost exclusively identified with agriculture, forestry and fishing because of the dominant position of these economic activities.

The second conceptualisation of rurality, is a geographic (or territorial or spatial or an area) concept.¹ In this **territorial approach**, rurality refers to the **distance** of the household with respect to accessing markets or services and it refers to the **density** of the settlement in which the household is located (as larger settlements provide agglomeration economies that allow the provision of “higher-level” services (such as complex hospital procedures and professional sporting events). Thus, in the territorial approach, rural areas are identified in relationship to their spatial characteristics that describes:

- (long) distances; and
- (low) population density.

The indicators can be used to compare different rural areas or to compare rural areas to non-rural areas. Thus, according to this approach, which is mainly used in developed countries with a low agriculture population, rural populations live at a distance from a population centre and they live in areas with a low population density. The economic and social implications are that rural populations have more difficulty accessing urban markets and they have more difficulty in accessing the non-market benefits (such as hospitals or ballet performances) of urban agglomerations. A low population density implies that rural populations lack urban agglomeration economies - and urban agglomeration economies are now driving economic development in many countries.

It is recommended that the choice of geographical unit be based on the specific policy issue under consideration (Chapter III.1). For example, in rural areas with no access to treated water, water quality would be a very local issue and a definition of rural based on neighbourhoods or localities would be appropriate. However, for regional issues, such as access to jobs within a commuting area or the access to surgical procedures, then the choice of the definition of rural should be based on regional territorial units - like a county or, in some countries, a regional planning authority.

Typologies of rurality. For some policy issues, localities, neighbourhoods, regions, countries, etc. may be rolled up to provide a typology of various types of rural areas. This often allows a gradient from ‘most rural areas’ to ‘least rural areas’ to be constructed (for a review, see Chapter III.2). Sometimes, it is important to classify individual communities as ‘rural’ versus ‘urban’ within larger ‘predominantly rural’ and ‘predominantly urban’ regions. This is particularly important because ‘rural’ communities within a

¹ It is acknowledged that for some discussions, “rural” is a social construct and thus perceptual notions of “rural” would be appropriate for these discussions. It is also acknowledged that historically, rural was agriculture, fishing, lumbering and mining and these activities all used to take place in rural areas. However, within each of these areas, there were also merchants selling various goods and people providing services (such as teachers and tavern operators) so that not all the people in these areas were workers in agriculture, fishing, mining and lumbering. Sometimes these workers lived in villages or towns and, at a certain size of settlement, there would be some urban services (such as a post office, tavern and a grocery store) available. Thus, for these questions, their settlement was “urban.” For other discussions, the classification of the household according to the sector of employment of the head of the household is important (for example, the international fluctuation of the prices of the output of the agriculture, fishing, mining and lumbering sectors hit these households directly) but these discussion are independent of the “rurality” (i.e. distance and density) of the location of the household.

'predominantly urban' region would be expected to have different problems and different solutions than a 'rural' community in a 'predominantly rural' region.

The wide difference in levels of development in several key geographical areas of the world suggest that, besides the core set of indicators, there is a need for some specific focuses. Some themes are more relevant to developed countries, such as environmental conservation and rural sustainability. Other themes are more relevant to developing countries, such as poverty reduction and health care (see Chapter II for a review of policy concerns among countries at different stages of economic development).

This approach is already adopted by international organizations with regard to developing countries where the question of rural development is more closely related to overall problems of general development. Having said that, in order to foster comparability across different areas, these special focuses (or departures from a common set of indicators) need to be limited.

VII.3 Rural indicators classified by themes

In Chapter III.4 details were given about themes to which indicators are classified as proposed by the OECD, Eurostat, World Bank and FAO. By and large these sets of themes resemble each other, which is, of course, no surprise. All four proposed set of themes constitute good examples for countries or agencies wanting to set up rural development indicators.

The observation of rurality can be done from several perspectives, suggested by different theories of development. The corresponding themes of interest could be utilized for the construction of rural indicators. Besides the four sets of themes mentioned above, two alternative schemes are also proposed here, aspects of which are already part of national and international statistics. In Section VII.5 examples of indicators are given for various themes within the two schemes.

Scheme I

A. Components of rural development

1. Natural environment;
2. Social well-being;
3. Conditions for economic well-being.

B. Potential of rural development

1. Territory with respect to population;
2. Economic structure;
3. Communications.

C. Special focuses on developing countries

Scheme II

In this scheme the focus is on the development process. The discussion on indicators of development starts from a framework for understanding "sustainable livelihoods" as suggested by the

Department for International Development (DFID) in the report: Introduction to the Sustainable Livelihoods Approach.² (www.livelihoods.org/info/info_guidancesheets.html)

DFID defines livelihood as the combination of “the capabilities, assets and activities required for a means of living”. Within this livelihood context the core analytical framework starts from the so-called asset pentagon, which contains the following five categories:

1. **Natural capital;**
2. **Financial capital;**
3. **Human capital;**
4. **Physical capital; and**
5. **Social capital.**

Communities and regions achieve desired outcomes by applying strategies that exploit these assets. Indicators or statistics on strategies are difficult to conceptualize and, typically, the strategy that works for one community or region will not be appropriate for another. However, some indicators or statistics that measure:

6. **The capacity of the community / region to generate and to implement strategies** will be proposed.

Finally, indicators of:

7. **Desired outcomes** would need to be monitored.

It quickly becomes obvious that there are no hard-and-fast rules for assigning a given indicator to a given category. Rather, the purpose of these categories is to remind us that these five assets are important in the development process of urban and rural communities and regions.

A list of examples of indicators relating to these two schemes appears at the end of this chapter.

VII.4 Measures of rurality

VII.4.1 Defining the characteristics of an indicator that deals with rurality

Statistical indicators have to satisfy certain properties to be useful and effective (see Chapter III.3). This is particularly true for indicators dealing with rurality.

The first characteristic of a rural indicator is that it should use variables that are **reliable and simple to measure**. This implies that the data inputs required for the calculation are cheap to acquire and easy and straightforward to get from a respondent or to access from an administrative data source (for indicators such as municipal expenditures or available hospital beds in the given rural area). Resource costs are particularly important for rural statistics in poor countries.

The second characteristic of a rural indicator is that it must have **feasibility** of measurement, preferably on a worldwide basis, and **comparability**. It is important to remember that from a sustainable development perspective, measurements of rurality are relevant mainly in relative terms, such as:

² DIFD is a British government department responsible for promoting development and the reducing poverty.

1. a rural area compared to another rural area; or
2. a rural area compared to a non-rural area.

VII.4.2 Statistical requirements of a rural indicator

The following is a list of requirements for a good quality indicator, developed from Chapter III.3:

1. *Understandable*: should be clear and brief, easy for users to read and understand.
2. *Transparent*: inputs and the process of production should be clear. Users should know how it is produced, where the information comes from, how the information is processed and how it is calculated.
3. *Significant and relevant*: should be informative to users.
4. *Analytical*: should give a sufficient insight into the phenomena.
5. *Complete*: should cover the whole population of statistical units or the whole geographical area.
6. *Reliable*: should have little statistical error or noise.
7. *Comparable*: there are different levels of comparability:
 - 7.5. Inside comparability: should be possible to compare the same indicator for two subpopulations or areas;
 - 7.6. Outside comparability: should be possible to compare the indicator with similar indicators from other sources (different data sources or different producers);
 - 7.7. Inter-temporal comparability: should be possible to review the indicator over time.

To achieve comparability, it is necessary to have clear and constant definitions and classification.

8. *Coherent*: should have the same reference period, accountancy criteria and mode of calculation as other information sources.
9. *Continuous*: should have no interruptions in the indicator time series.
10. *Accessible*: should be easy to get by users in terms of effort, time and money costs.
11. *Timeliness*: should provide information to users as close as possible to the occurrence of the phenomena under study.
12. *Not expensive*: cost of production should be minimized (in terms of money and the burden on the respondent) in proportion to the information produced.

For an indicator to be useful in representing a socio-economic attribute, it should satisfy these 12 points.

VII.4.3 Three dimensions of any indicator

Three dimensions may be identified when assembling any indicator:

1. The **state** or situation or level of the indicator (such as the per cent of females, 25 to 54 years of age, with a secondary school diploma in all rural territorial units within a country);
2. The **dispersion** or concentration or variability of this indicator (such as the GINI Index of Inequality across all rural territorial units of the per cent of females, 25 to 54 years of age, with a secondary school diploma; or perhaps more simply, the number of rural territorial units where this "per cent" is less than one half of the national average); and

3. The **tendency** or trend of this indicator over time.

Each dimension of a given indicator adds important information for the policy discussion.

The purpose of statistical indicators is to highlight those aspects considered sufficient to describe the socioeconomic characteristics by degree of rurality. First, to summarize the phenomena it is necessary to produce some measures of the **level**. These have to include only principal and uncorrelated components. Second, some measures of component **dispersion** and **concentration** should be provided. Finally, are things improving or getting worse - what is the trend over time?

Rural households are typically the unit of observation from which data are tabulated for each rural territorial unit (such as the per cent of households with a single parent as the head of the household)³. An example of an indicator calculated on the rural households base is the normalized mode of per capita real income of the households in a given year in a given rural area⁴. The dispersion and concentration of this variable can be measured in various ways, such as by the normalized squared error from the mode and the Gini Index of Inequality. (See Chapter XI later in this Handbook for a review of measures of inequality in the context of agricultural household incomes).

An example of an indicator calculated from an administrative database might be the normalized mortality rate for children under 5 years of age for a given year for a given rural area. The dispersion and concentration indicators could be calculated across all similar rural areas.

Beside measurements of dimension, dispersion and concentration taken at a single point in time, it is often useful to have a measure of **tendency over time**. For many characteristics of rurality, time series data are necessary to calculate the inter-temporal rates of improvement or growth, or the average of these rates over a set period of time. Averaging the rate of growth over, for example, five years might be preferable for understanding tendency because short-term volatility will be excluded.

Finally, we note that each dimension (**level**, **dispersion** and **tendency**) of an indicator for a given rural territorial unit may be compared to other rural territorial units or to urban territorial units to obtain a measure of imbalance in development or to measure a socioeconomic discrepancy.

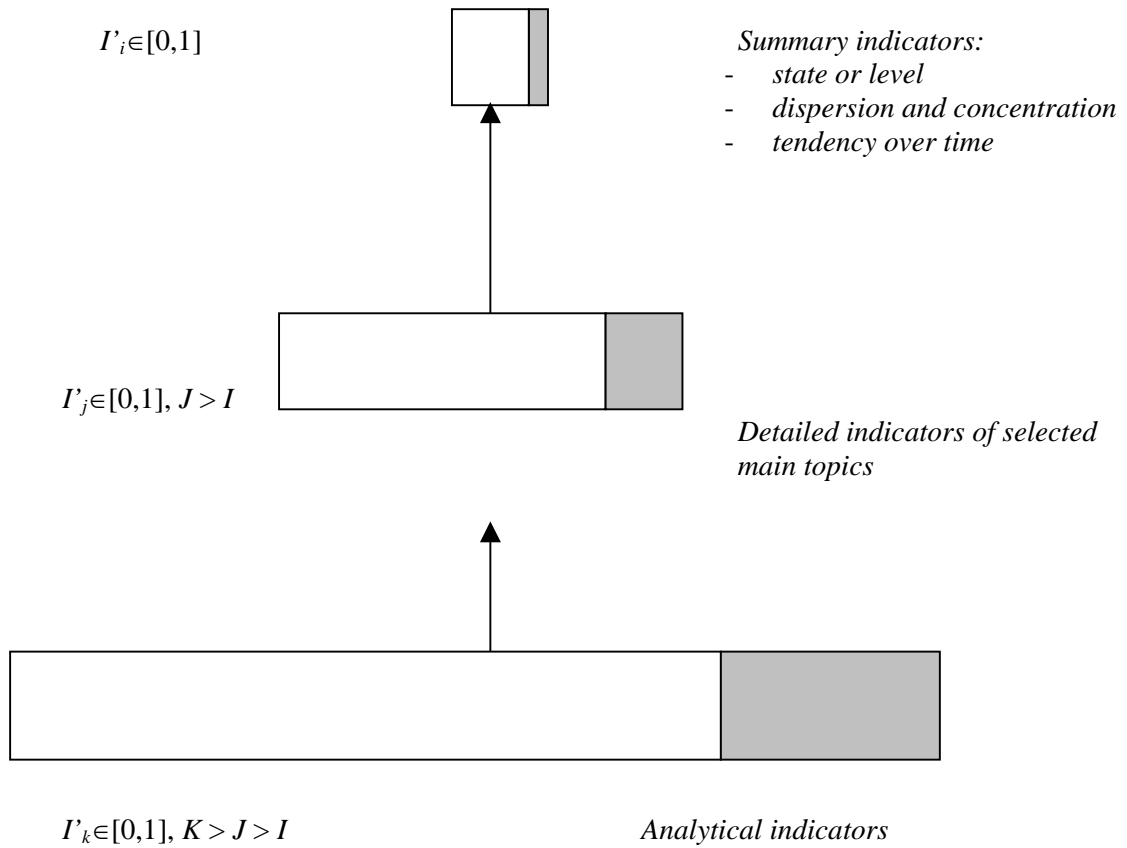
VII.4.4A graduated sequence of rural indicators

When selecting indicators it must be remembered that not all indicators have the same informative capacity with respect to the phenomena under observation. Moreover, too many indicators can create confusion and produce misinformation for the final user. For this reason, this Handbook recognizes the value of using a graduated sequence of rural indicators, such as the hierarchy summarized in Figure VII.1.

³ In some cases, the rural area itself becomes the unit of observation in cases where the statistical agency might publish data collected from an administrative data source (such as the per cent of the municipal budget allocated to education for a given rural territorial unit).

⁴ Mode is suggested for variables that are not normally distributed among the population even if in practical terms, as a first approximation, normal mean is applied.

Figure VII.1



Source: IWG.AgRI Task Force.

VII.5 Suggested sets of rural indicators

Two alternative possible schemes are presented below which evaluate the state, tendency over time, variability and concentration of rural development.

Scheme 1

A. Components of rural development

A.1 Natural environment

Character: Quality of the countryside and the condition of the natural environment (natural resources and wildlife), as necessary requirements to reach a good quality of life and as an opportunity to enhance the economic conditions of the rural population.

Suggested proxy indicators:

1. State
 - Per capita drinking water:* cubic metres of drinkable water at time t / population at time t
 - Per capita CO₂ emission:* tonnes of CO₂ emission at time t / population at time t
 - Per capita energy consumption:* KWh of energy consumption at time t / population at time t
 - Biodiversity index:* number of animals (farmland birds, wild beasts, farm animals) at time t / square kilometres of the surface at time t
 - Landscape index:* square kilometres of land lost from agriculture and forestry to industrial, housing, road and other uses at time t / square kilometres of the surface at time t
 - Waste recycling index:* per cent of waste that is recycled at time t
2. Tendency over time
 - For each indicator:* indicator at time t / indicator at time $t-1$

A.2 Social well-being

Character: Quality of social life and welfare. Good quality means good education and health; reduced risks and vulnerability of people.

Suggested proxy indicators:

1. State
 - Literacy rate:* per cent of population, aged 15 – 24, who have completed a given level of formal schooling at time t
 - Infant mortality rate:* number of deaths of infants (under one year of age) per 1,000 live births at time t
 - Newspapers per capita:* number of newspapers sold at time t / population at time t
 - Political rights:* per cent of the eligible voters who voted in the last election
 - Green areas rate:* green area as a per cent of total area at time t
2. Tendency over time
 - For each indicator:* indicator at time t / indicator at time $t-1$

A.3 Conditions for economic well-being

Character: Income and wealth of people.

Suggested proxy indicators:

1. State
Real per capita income: real income at time t / population at time t
2. Tendency
Real per capita income growth: real per capita income at time t / real per capita income at time $t-1$
3. Dispersion and concentration
Real per capita income inequality: normalized squared error from the mean at time t
Gini Index of Inequality at time t

B. Potential of rural development

B.1 Territory with respect to population

Character: territory available to the rural population to live, to cultivate (usable agricultural land) and to perform other economic activities.

Suggested proxy indicators:

1. State
Per capita territory: square kilometres of the surface at time t / population at time t (which is the inverse of the population density)
Per capita AAU: agricultural Area Utilised (AAU) (square kilometres) by rural population at time t / rural population at time t
Rural youth: rural population under 14 at time t / rural population at time t
2. Dispersion
Per capita territory: number of rural territorial units within each size class of square kilometres of surface area per inhabitant at time t
Per capita AAU: number of rural territorial units within each size class of AAU at time t
3. Tendency over time
Rural pop. growth: rural population at time t / rural population at time $t-1$

B.2 Economic structure

Character: Health of the economic environment of the rural population.

Suggested proxy indicators:

1. State
employment rate: population employed at time t / population at time t
local government debt rate: local government debt in region r at time t / population in region r at time t

2. Tendency over time
migration rate: per cent net flow of population at time t
employment growth rate: population employed at time t / population employed at time $t-1$
local government debt reduction: local government debt in region r at time t / local government debt in region r at time $t-1$

B.3 Communications

Character: Ability of rural population to communicate and interact with the rest of the world.

Suggested proxy indicators:

1. State
Per capita stations: number of stations (railway stations, ports and airports) at time t / rural population at time t
Per capita telephones: number of telephones (home, mobile and public) available at time t / population at time t
2. Tendency over time
Per capita stations rate of growth: number of stations at time t / number of stations at time $t-1$
Per capita telephones rate of growth: number of telephones at time t / number of telephones at time $t-1$

C. Special focus on developing countries

This is a list of characters that are relevant from a developing country perspective. The construction of indicators is not suggested as the final choice will depend mainly on data availability in any country.

C.1 Market and institutions

- food price index
- membership in organizations of agricultural producers

C.2 Infrastructure

- rural population with access to electricity

C.3 Poverty

- rural population living on less than \$1 a day
- rural child malnutrition

C.4 Agriculture

- agricultural productivity
- food production index

C.5 Natural resource

- forests and deforestation

C.6 Education

- rural female literacy with respect to rural male literacy
- net rural enrolment ratio in primary education

C.7 Health

- infection among rural population

Scheme 2**ASSETS, CAPACITY to design and implement strategies and desired OUTCOMES
for sustainable livelihoods**

| Selected possible indicators for urban and rural populations | One possible rural-specific indicator for this item |
|---|--|
| Potential indicators of the ASSETS of a locality or region are: | |
| Natural capital: | |
| Potential drinkable water per capita, within a given time period | How much time per day is required to access and transport water for an average family? |
| Hectares of arable land per capita | |
| Hectares of forested land per capita | |
| Financial capital: | |
| Share of population with savings over a given limit (say, with savings greater than one half of the individual's annual income) | What share of these "savings" is in fixed assets (e.g. land, buildings, machinery) and what share is in liquid assets (e.g. stocks, bonds, bank accounts)? |
| Availability of financial institutions (banks, lending circles, etc.) within the community / region (e.g. number of institutions or distance to the nearest institution) | Is the institution required to re-invest a certain share of its portfolio in the local community? |
| Physical capital: | |
| Per cent of population living in a household with electricity | For persons without electricity, what share has no access to electrical services? |
| Housing stock (number of persons per room in the dwelling) | |
| Per cent of population within one kilometre of a paved road | |
| Per cent of population within one hour of an international airport | |
| Human capital: | |
| Infant mortality rate: number of deaths of children under one year of age as a per cent of all live births within a given the time period | For infants who die, what per cent die due to a lack of access to maternal care? |
| Per cent of population, for a given age group, who are literate (For some countries, the OECD Adult Literacy Survey is appropriate. Alternatively, one might tabulate the share of the population, within a given age group, who have completed a given number of years of formal schooling.) | |
| Per cent of children, within a given age group, enrolled in formal schooling | For each age group, per cent of population living more than 30 minutes from a school. |
| Per cent of population living more than one hour (or one half hour) from a hospital | |
| Social capital | |
| Number of newspapers sold per capita, within a given time period | Share of news that is local, national and international |

| Selected possible indicators for urban and rural populations | One possible rural-specific indicator for this item |
|---|---|
| Per cent of eligible electors who voted in a recent election | |
| Per cent of individuals living in a residence with a telephone (land line or cell phone) | |
| Per cent of individuals of a given age group who participate in a voluntary organization or community groups | |
| Potential indicators of the CAPACITY to design and implement development strategies would include: | |
| Per cent of the population, for a given age group, who have attained a secondary school diploma; | For population 20 to 24 years of age without a secondary school diploma, per cent who live more than 30 minutes from a secondary school |
| Per cent of population working in, or with experience in, each of the industrial sectors of the economy (such as agriculture, manufacturing, tourism, retail sales, etc.) | |
| Per cent of population living within 15 minutes of public transport (bus, train, boat, etc.) | |
| Number of new business starts in the past 12 months, calculated on a per capita basis | Per cent of new entrepreneurs who grew up on this locality |
| Potential indicators of the desired OUTCOMES of the sustainable livelihoods of individuals within urban or rural communities or regions: | |
| Life expectancy at birth, for males and females | |
| Population change, tabulated for specific age groups and by gender (some rural communities / regions wish to stop population decline while other communities / regions wish to stabilize their populations at new, but lower, sustainable population level, while there is another group of rural communities / regions who wish to restrict their population growth from in-migrants); | |
| Employment rate (per cent of individuals in a given age and gender group, who are employed – in wage work or self-employed or as an unpaid family worker); | |
| Earned income per worker (1) (by age and gender) | |
| Per cent of population living in poverty (using the measure of poverty suitable for each country, to determine urban – rural differences) | |
| Per cent of population, for a given age group, that dies from a preventable cause (e.g., accidents, communicable disease, AIDS, etc.) | |

(1) One common indicator for international comparisons is the GDP per capita. This is problematic for sub-national analysis. Many countries do not prepare a sub-national set of national accounts – and most certainly not for rural and urban areas. The ability to correctly assign the earnings of labour and the earnings of capital, let alone the number of workers, to the appropriate sub-national geography is problematic (although admittedly still a popular activity for some). Caution is called upon against placing undue emphasis on the calculation of GDP per capita for sub-national areas.