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CHAPTER 5 AND ANNEXES 4 and 5

OF THE HANDBOOK ON RURAL HOUSEHOLD, LIVELIHOOD AND WELL-BEING: STATISTICS ON RURAL DEVELOPMENT AND AGRICULTURE HOUSEHOLD INCOME.

Paper submitted by the Task Force
on Statistics for Rural Development and Agriculture Household Income*

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V INVENTORY OF RURAL INDICATORS BY INTERNATIONAL ORGANIZATIONS

V.1 Introduction

In the sections below a brief account is given of the set of inventories developed by major international organizations. Much of the indicators and the arguments behind them are of course much the same for all international organizations. After giving more details to the indicators of the OECD repetition for the other international organizations have been eliminated, explaining the reason why the text for the OECD is more voluminous than 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, including details about the definitions of the indicators.

V.2 OECD

V.2.1 Introduction

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

Rural to urban migration has always been a major issue but even here perspectives have changed, at least in some countries, as there have been indications of counter-urbanisation and rural revival. Analysis of the economic determinants for migration has often led to particular interest in structural adjustments in agriculture. Rural has often been used as a synonym for agricultural. Such a notion has surely 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 is still managing land resources to a great extent. It continues to shape the environmental quality of the countryside. Land use changes can have an important impact not only an 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 special 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 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 for OECD purpose was selected.

The selection process for indicators reflected the three principles developed earlier: **relevance, reliability, realisability**. It was based on an assessment of 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 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 mid term;
- ◆ desirable in the longer term.

Thus, the basic set of rural indicators cannot be considered final. In the course of further work it might be appropriate to modify the list by tapping off 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, 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 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 organisation of 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 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 out-migration. 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 bases for the calculation of various demographic ratios. Indices relating the number of population in different age classes, such as the dependency ratio - (0-14 + 65+)/15-64 - or the vitality ratio - 20-39/60+ can be used not only 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 organisation can be important in knowing

more about territorial differences and developments. Household size and the share of children growing up in single parent households are considered as variables that could indicate such differences.

Communities: In addition to family and household statistics, data on the shares of population living in local communities of different size class 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 on 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 and the prospects of 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 to describe economic structure and performance were chosen:

- ◆ Labour force,
- ◆ Employment;
- ◆ Sectoral shares;
- ◆ Productivity;
- ◆ Investment (OECD, 1996).

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 participation rates for male and female populations are considered as 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, tertiary) alone already provides valuable initial information. A further disaggregation would be more useful, however. This would allow analysts to distinguish, within the primary sector, agriculture from forestry or fishing, for example, or tourism from other activities in the services sector.

Productivity: If data is 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 yet availability of territorially disaggregated production data is not very good for many countries.

Investment: At present, the territorial detail of statistics on Gross Fixed Capital Formation is given less complete than for total production. However, since investment is crucial for any attempt to promote rural development it appeared 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

Territorial income distribution is an important rural policy concern. However, 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 to describe important aspects of social well-being and equity were chosen:

- ◆ 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 for, which it is measured, the more likely 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 is, 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 truer 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 more comprehensive monitoring of living conditions. To measure and compare housing standards is, however, difficult. The number of persons per room as well as the percentage of households having flush toilets appeared to be variables that could provide initial indications for 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 measure the share of population over age 25 with 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 sustainability

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 for collection and presentation of 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 (OECD, 1996).

Indicators

Topography and climate: Topography and climate not only shape the natural conditions but also 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 (days per year) were selected as potentially relevant indicators. As a synthetic indicator referring to a site-specific mix of threshold values in

temperature, precipitation, sunshine etc., 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 and 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.

Habitants 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.

Soils and water: Conservation of soils and protection of ground and surface water are closely related issues, which 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 mid term. 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, also for assessing air quality, balances of flows should be established. This, however, may not be realistic in the short-term. Since emission data for air pollutants such as SO_x and CO₂ differ considerably between rural and urban places, they may help to provide some initial information on territorial differences in environmental quality and sustainability (OECD, 1996).

Below the discussed set of indicators is listed.

- ◆ Distribution of population by type of region
- ◆ Labour force (total and female) participation by type of region

- ◆ Demographic labour market pressure by type of region (population age structure)
- ◆ Sectoral employment and employment change by
 - industry class: agriculture, industry, services
 - type of region: predominately rural, significantly rural and predominately urban
 - development dynamics: dynamic and lagging regions
 - comparisons to national levels and changes
- ◆ Share of agriculture in regional employment (and employment change) by type of region.
- ◆ Part time and pluriactive farming by type of region
- ◆ Tourism-related employment and employment change by type of region and with comparisons to national averages
- ◆ Agriculture and tourism-related employment by type of region
- ◆ Annual employment change and annual change in number of establishments by type of region
- ◆ Annual employment change and annual change in number of establishments by type industry class
- ◆ Employment change – contribution by establishment size by type of region
- ◆ Unemployment and levels of education
- ◆ Education level by type of region
- ◆ Employment change and education level by type of region

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

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 of potential use, to measure changes in rural regions in Member States.

Table V.1
OECD rural indicators

Selected rural indicators by type of region (Regionen)	Predominantly rural regions	Significantly rural regions	Predominantly urbanised 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: [6]

Note: These indicators are equally valid for urban development indicators.

Information on indicators in the PAIS project was collected in a variety of ways, and from a variety of sources within member state administrations 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 9 member States.

Following an assessment of these indicators, grouped according to the above 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 policy makers 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 the population settlement and structure – in areas of sparse settlement patterns, economies of scale cannot be achieved in the production and/or delivery of goods and services. Both state and change in population, and effects on resources are often key development considerations. Permanent out-migration, 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, 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 to main towns and cities, the scale and nature of inward migration are variable between 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, which are often characterised by top-heavy age structures, due to the consequences of selective in and out-migration in the past. As such indicators of the general well-being of rural areas include:

- ◆ % of population under 18;
- ◆ % of population over 65;
- ◆ % 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 as discussed above 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: $(\text{Population over } 65) / (\text{Population } 0-14) * 100$, and;
- ◆ 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 latter demonstrates the demand for new jobs within the forthcoming ten years within a territorial unit in order to prevent out-migration 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 percent 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 changes in these sectors is increasingly relevant in view of the changing 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 creating and maintaining 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,

and this is a sector that is able to utilise 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; 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 by GVA per employee by 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 or 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)¹:

- ◆ 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 through EU and many national regional development policies.

Business Infrastructure:

Level of provision:

- ◆ number of internet service providers (ISPs) within a territory;
- ◆ Provision of Integrated Service Digital Network (ISDN), Asymmetric Digital Subscriber Line (ADSL) in a territory based on capacity and speed;

¹ NUTS = Nomenclature of Statistical Territorial Units

- ◆ Annual subscription cost of ISDN, ADSL and other broadband technology;

Level of usage;

- ◆ Number of ISDN, ADSL, cable subscribers by businesses within a territory;
- ◆ Internet hosts and business subscribers to digital services;
- ◆ Turnover of business generated from the internet;
- ◆ No 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 recognised 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 this section of the research (rural development), the focus is on the social and economic functions of agriculture, largely excluding landscape and environmental quality, although these are critical dimensions of MFA. In summary, there are three key areas that socio-economic indicators can address: farm household employment; agricultural diversification and agricultural productivity.

The following set of indicators are discussed:

First is the diversification of household activities into non-farming activities, where the unit of analysis is the farm household. 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.

Second is 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’, its ‘percentage of utilisable agricultural area’ (UAA), and its evolution.

Although there is a wealth of efforts to measure agriculture’s impact on the environment there have been fewer efforts to capture the impact of agriculture’s habitat and species maintenance 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 in hectares/km². 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 existence values from altruistic concern for the environment (although this may be more applicable to urban residents, than rural). Other examples could include area of woodland maintained on farmland, 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 utilised.

Third are measurements of farm structure (inputs) and productivity (output). Farm employment structures by EU land use categories are the most common indicators of resources, along with form of farm tenure and total income from farming. Farm productivity is measured using output per hectare variables, and output per employee, and with changes over time. There is little variation in the indicators used between countries, although some levels are able to produce data for 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’s report

The Hay’s report 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 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 harmonisation. 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' but with possibly one fifth of the NUTS 3/2 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 an analysis.

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

Based on the Hay's report and the PAIS project, themes and indicators that were selected by Eurostat are shown in table 3 in annex 4.

IV.3.3 Common indicators for monitoring rural development programming – mid term review

Agenda 2000 required member states and regions to undertake a mid-term review of their rural development programmes, to be submitted to the Commission no later than end-2003, based on common guidelines and indicators (EC, 2003a, 2003d). The purpose of this is of course to assess how well the assistance has performed *vis-à-vis* the different categories of beneficiaries in order to achieve the objectives. (EC, 2002)

Evaluation reports for the above purpose must explain the methodologies applied, including the implications for the quality of the data and the findings. Sampling techniques and sources that have been used to collect data must be indicated. Optimum use should 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 is an indicative 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 Internet address shown below:

http://europa.eu.int/comm/agriculture/rur/eval/index_en.htm

V.4 The World Bank

(i) Introduction

From developing countries perspective, 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 are shown in annex 5. Which indicators to select is of course very much 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.² 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.

*(ii) Suggested Approaches for Collecting the Proposed Data*³

Monitoring of rural poverty efficiently will require effort in data collection on a long-term basis. *Ad hoc* surveys are commonly undertaken in the developing countries, but these do not provide consistent coverage of the different aspects of rural development. One approach is to use the household surveys as vehicles of collecting rural data. Such surveys could focus on rural data related to family status, access to services, economic activity, production practices, expenditure and social activity. The value of these surveys 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

² 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 analyzed and summarized graphically, revealing the underlying structure of the data. Source: http://training.creascience.com/product_info.php?products_id=45

³ This section includes an excerpt from the paper “Integrating Rural Household Survey” which Mr. Vogel presented at the 2004 MEXSAI Conference in Cancun.

approach will ensure comprehensiveness and consistency and avoid the use of excessive amounts of ad hoc, largely anecdotal data. This will require 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 1996.⁴

An approach (see Vogel, 2004) could be an important first step. He proposes a framework and overall design of an integrated annual rural household survey program, 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 and makes some of the MDG indicators as part of the core items and elaborated the issues to consider in the survey design. One is that there are core data items at the household level that need to be monitored every year. It should also be recognized that there is no need to monitor some 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 analysis purposes for current and future policy and investment decisions, especially to forecast the consequences of the proposed actions. A primary goal is to provide a survey framework that provides the data needs to monitor progress towards meeting the MDGs, and more importantly, the inter relationships between them. The other is to foster statistical capacity building. When countries do periodic household surveys, they receive training and technical assistance. However, when the survey is completed the sponsor or donor goes elsewhere leaving the country without the capacity to continue.

Table V.2 provides a brief description of the proposed survey framework. Note that the proposal is to have a national level rural household survey to provide a cross section of information over time.

First, it should be noted that the sample is divided into replicates with 5 being used each year. By the 5th year, each replicate will have been in the sample for 5 consecutive years.

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, are important to monitor food security issues, and provide an overall overview of progress to 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

⁴ <http://www.fivims.net/index.jsp?lang=en>

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 5th year a household is in the sample, it will have been surveyed annually for the core items, once for each detailed questionnaire, and twice for one of the detailed version to provide a matching sample comparison over time.

The content of the detailed questionnaires to be used each year will be targeted to include indicators to measure progress the Millennium Development Goals. An overview of the content of the detailed questionnaires follows:

- A. (MDG 1) Indicators of progress toward eradicating poverty and hunger. This would also information about employment and wage rates included in the October Inquiry. This would provide the primary data to enable computing Purchasing Power Parities for the poor in conjunction with the International Comparison Program.
- B. (MDGs 2 and 3) Indicators of progress toward 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.

Table V.2 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

V.5 FAO

Table V.3 lists the WCARRD list of primary indicators. The indicators marked with an asterisk are the “core” indicators for use in monitoring poverty alleviation.

Table V.3
The WCARRD list of primary indicators

I. Poverty alleviation with equity

Income/consumption

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 *

Nutrition

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 *

Health

5. Infant and child mortality rate *
6. Percentage of the population in villages/communities with at least one health auxiliary

Education

7. Adult literacy rate *
8. Primary school enrolment and completion rates

Housing

9. Percentage of rural household with specified housing facilities, e.g. piped water, electricity and sanitation facilities

Access to community services

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

Access to community services

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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Annex 4
European Union rural indicators

Table 1: Key Rural Development Indicators suggested in the PAIS report			
Theme	Issue	Indicator name	No.
Population and Migration	Demography	Population density	1
		% population aged 16 or under	2
		% population aged 65 or over	3
		Infant mortality rate	4
	Population Change	Average annual population change	5
		Regional net migration balance	6
Social well-being	Service provision	Accessibility to public services	7 ⁱ
	Employment	% resident workforce working outside area	8
		Rural employment rate	9 ⁱⁱ
	Quality of employment	% low skilled and high skilled workers	10 ⁱⁱⁱ
		% of part-time workers	11
		% of employees on short-term contract and long-term contracts	12
		% workforce self-employed	13
	Income	% of households in receipt of social payments	14
		Average earnings per capita	15
		Household disposable income	16
	Housing accessibility	No. of second homes	17
		Average house price deviation from national average	18
		Affordability gap ^{iv}	19
		Rate of transactions (house sales)	20
% turnover in rented sector		21	
Economic Structure & Performance (competitiveness)	Enterprise	Average no. of patents	22
		No. of patent applications	23
		R&D expenditure	24
		New business formation rate	25
		GVA per capita in manufacturing	26
		% GVA in high-technology sectors	27
	Human capital	No. of university students	28
		Share of workforce with higher qualification	29
	Business infrastructure	Supply of broadband services	30
Economic Structure & Performance (diversification of rural economies)	Sectoral shares	Sectoral employment shares: high and low tech manufacturing	31
		Sectoral employment shares: shift share analysis	32
		% foreign owned companies	33
		% employment in foreign owned companies by sector (manufacturing and tradable services)	34
		Enterprise size structure by employee numbers	35

		Net revenue by enterprise sector	36
	Farm households	% share of pluriactive farm households	37
		% income from non-farming activities	38
		% income from off-farm activities	39
	Tourism & recreation	No. of bedspaces per 1,000 inhabitants	40
		No. employed in rural tourism accommodation providers	41
		Accommodation occupancy rate	42
Share of rural enterprises in total tourism turnover		43	
Economic Structure & Performance (Addressing the primary sector)	Agriculture	Farm size distribution (area/output)	44
		Total gross output	45
		Gross value added	46
		Farm net value added per holding, hectare and AWU ^v	47
		Farm business employment	48
	Forestry	Employment (permanent/temporary)	49
		% area forested (on-farm/off-farm)	50
		Total gross output	50
		Total value added	51
		Value of total annual gross fellings	52
	Fisheries, aquaculture & fish processing	Total gross output	53
		Total value added (% of GDP)	54
		Employment by home port	55
		Value of landings (by local registered boats)	56
		CFP Dependency Indicator ^{vi}	57

Table 2. Indicators suggested in the Hay's report

1. Demographic Characteristics and Changes

ISSUES	INDICATORS	VARIABLES
Population Change	Average Population	Population Year 1, Population Year 2
Population Density	Population Density	Population Year 1, Area (Square km)
Age Structure	Elderly and Young Population	% of 55+ to Total Population % of Age Group 14 and Under to Total Population % of Age Group 14 and Under to Age Group 55+
Migration	Age Specific Migration	Interregional Migration
Natural Population Change	Birth/Death Ratio and % Change	Total Deaths Year 1, Total Deaths Year 2 Total Births Year 1, Total Births Year 2

2. Employment and Human Capital

ISSUES	INDICATORS	VARIABLES
Human Capital	Education Levels	% Population Aged 25-59 Having Attained Only Secondary Education or Less
Change in Employment	Employment Growth	Total Employment by Age and Sex Yr 1 Total Employment by Age and Sex Yr 2
Employment and Economic Activity	Employment Rate Unemployment Level Activity Rate	Employed Persons Aged 15-64/Working Age Population Unemployment Rate – Total Population Active Population/Working Population
Opportunities for Women	Employment Rate By Gender	Employed Females Aged 15-64/Working Age Population – National Level Employed Males Aged 15-64/Working Age Population – National Employed Females Aged 15-64/Working Age Population – Regional Employed Males Aged 15-64/Working Age Population – Regional

3. Welfare, Income and Quality of Life

ISSUE	INDICATOR	VARIABLES
Economic Prosperity	Average income and growth/decline	GDP Per Capita Yr 1, GDP Per Capita Yr 1, GDP Per Capita Yr 2
Quality of Work Opportunities	Proportion of Employment Part-Time or Seasonal	% of Part-Time Employment as % of Total Employment % of Seasonal Employed as % of Total Employment
Access to Services	Proximity to hospital, school, postal services, bank	
Deprivation	Jobless Households Dependence Upon State Aid	Share of Households in Which No Member is in Employment Poverty rate before social transfers (original income) Poverty rate after social transfers (total income) % Income From Social Transfers
Health	Life Expectancy at Birth	Life Expectancy of Females at Birth Life Expectancy of Males at Birth

4. Agricultural Adjustment and Structural Change

ISSUES	INDICATORS	VARIABLES
Changing Agricultural Employment	Agricultural Labour Force and Change	Total Agricultural Labour Force in AWU Yr 1 Total Agricultural Labour Force in AWU Yr 2
	Changing Intensity	Average Number of AWU by Holding/Total Holdings Average Number of AWU by 100ha/Total Holdings Number of AWU/Total UAA Yr 1, Yr 2
	Family Labour	Total Family Labour Force in AWU/ Total Labour Force in AWU
Pluriactivity	Holders With Other Gainful Activities	Holder's Being a Natural Person: Work Time>0to<25% - persons Holder's Being a Natural Person: Work Time>25to<50% - persons Holder's Being a Natural Person: Work Time>50to<75% - persons - as a % of - Holder's Being a Natural Person: Sex = Female (Persons) Holder's Being a Natural Person: Sex = Male (Persons)
Ageing of Farmers	Proportion of Older Holders and Change	Holder's Being a Natural Person 55-64 years AWU Yr 1, Yr 2 Holder's Being a Natural Person 65+ AWU, Yr 1, Yr 2/ Holder's Being a Natural Person AWU
Agricultural Viability	Income From Agriculture and % Change	Average Standard Gross Margin per Hectare
Structure of Agricultural Holdings	Farm Size (Business Size)	Total UAA/ Total Agricultural Area
	Farm Size (Area)	Total Standard Gross Margin (ESU)/ Total Number of Holdings
	Intensity	% of Agricultural Area as Irrigated Area Standard Gross Margin per Annual Work Unit SGM per UAA
	Importance of Livestock	ESUs from Livestock

5. Multi-Functionality of Agriculture

ISSUES	INDICATORS	VARIABLES
Uptake of Agricultural Policy	Farms with Agri-Environment Schemes	% of Holdings in Area With Agri-Environmental Scheme
	Farms in Designated Areas	% Holdings in Area Covered by Designated Area Status
Importance of Forestry	% of Farms with Forests	Number of Holdings With Woodland/ Total Number of Holdings
Farms with Pluriactivity	Holders With Other Gainful Activities	Holder's Being a Natural Person: Work Time>0to<25% - persons Holder's Being a Natural Person: Work Time>25to<50% - persons Holder's Being a Natural Person: Work Time>50to<75% - persons - as % of - Holder's Being a Natural Person: Sex = Female - persons Holder's Being a Natural Person: Sex = Male - persons
Uptake of Organic Farming	% of Organic Farms In Region	Total Number of Holdings/ Number of Organic Farms

6. Rural Economic Diversification

ISSUES	INDICATORS	VARIABLES
Dominance of Primary Sector Activities?	Relative Importance of Primary Sector	Total Employment in Primary Sector/Total Employment
Development of New Activities	Employment in manufacturing etc	Total Employment in Secondary Sector/Total Employment
	Employment in business etc Value Added Locally	Total Employment in Tertiary Sector/Total Employment % of Labour Force in Food Processing
	Accommodation Capacity and Change	Number of Tourist Beds in Region % Employed in Restaurants and Hotels Year 1, % Employed in Restaurants and Hotels Year 2
Dependence on Public Sector Employment	Strength of the Public Sector	% Employed in Public Sector

7. Innovation and Enterprise

ISSUES	INDICATORS	VARIABLES
Innovation and Research	Patent Applications	Total International Patent Applications Per Inhabitant
	Research and Development Expenditure	% GDP Spent on Research and Development – Government Sector % GDP Spent on Research and Development – Business Sector % GDP Spent on Research and Development – Higher Education Sector
New Enterprise	Investment and Creation of New Business	Gross Fixed Capital Formation By the Private Sector as % of GDP Gross Business Start-Ups
Importance of Telecommunications	ICT Expenditure	Information & Communications Technology Expenditure/ GDP
	Citizens With Internet Access at Home	% of Citizens with Internet Access Total Population

8. Policy¹

ISSUES	INDICATORS	VARIABLES
Region Eligible for EU Aid	Presence of Objective 1 or 2 in Region	
Importance of Rural Development Regulation	Uptake of Rural Development Regulation	EU Spending on Agricultural Support - the 'Rural Development Regulation'
		National Spending on Agricultural Support
		Number of Approved RDR Approved Applications in Region Amount of Money Awarded to Region for Uptake of the RDR Amount Allocated to Article 33 (Non-Agricultural Measures)
Region Eligible for LEADER Funding	Use of LEADER II and LEADER +	EU Spending on LEADER II and LEADER+ National Spending on LEADER II and LEADER+ Presence of 1 or More LEADER Local Action Groups Within Territory

¹ The main policy areas would include: Structural and Cohesion Policy, The Rural Development Regulation, LEADER +, and mountain and Less-Favoured Areas.

Mountain Areas & Less Favoured Areas	Proportion of Area Covered by Mountain and Less Favoured Area Status	% of Area Covered by Less Favoured Area Status % of Area Classified as Mountainous
Farmers leaving agriculture prematurely	Farmer Retirement Scheme	% uptake of farmer retirement scheme
Dependency of Farm-Payments	CAP Support	CAP Support/Total SGM

9. Rural Environment and Landscapes

ISSUES	INDICATORS	VARIABLES
Type and Scale of Farming	Average Farm Size (Area) Main Farm Type	Total Standard Gross Margin (ESU)/ Total Number of Holdings (See Farm Type Classification in Farm Structure Survey)
Levels of Exploitation of Natural Resources	% of Farm with Forest	Number of Holdings With Woodland/ Total Number of Holdings
Landscape and Biodiversity	Environmental Designations	% of Area Covered by Special Protection Status % of Area Covered by EC Birds Directive % of Area Covered by EC Natural Habitats Directive

10. Infrastructure and Peripherality

ISSUES	INDICATORS	VARIABLES
Peripherality	Peripherality Index Road Quality Rail Transport Existence of Airport in Region Distance to Airport from Centre Point of Region	Presence of Motorway Link to Nearest Large Town Presence of Rail Link to Nearest Large Town Presence of International Airport in Region Presence of Airport Serving National Destinations in Region

Table 3
Specification of Eurostat indicators (as laid down in an ESTAT discussion document)

1. Demographic data

Level of geographic detail: NUTS 5

<i>Issue</i>	<i>Indicator</i>	<i>Variable</i>
Population change	Average total population (This is for a first screening, if there is a change, one should go deeper)	Population year 1 Population year 2
Migration	Age specific migration (Active out and in movement has reasons Who migrates and why?)	In migration Out migration Across NUTS 5 borders
Natural population change	Birth/death ratio and % change (Reflects also the age structure and social well being)	Total births year 1 Total births year 2 Total deaths year 1 Total deaths year 2
Population density change	Population density year 1 Population density year 2 (Pressure on open space?)	Population year Area in km ²
Age structure changes	Age structure year 1 Age structure year 2 (Report e.g. ageing of the population. The ratio 5 – 14 and 55 -64 builds the indicator “demographic labour pressure”)	Minimum 5 – 14 years and 55 – 64 and 65 and older
		Number of households

2. Employment and economic data

Level of geographic detail:

<i>Issue</i>	<i>Indicator</i>	<i>Variable</i>
Forms of employment	Percentage of self-employed persons (This rate is higher where small and medium sized businesses exist; generally the rate is also higher in rural areas due to farmers etc.)	Number of self-employed persons
Importance of different sectors	Employment in primary, secondary and tertiary sector (Is the area shaped by agricultural activities; is there a change to the tertiary sector visible already)	Average total employment in primary/secondary/tertiary sector (By NACE subsection at the work place)

Importance of public sector	Percentage of employment in public sector	Employment in public sector Total employment
Human capital	Educational level of employees / self-employed people (Is the workforce well educated?)	Number of people with higher education (According to the International Standard Classification of Education , ISCED)
Change in employment	Employment growth	Total employment year 1 Total employment year 2 (By age and gender)
Relative changes of employment	Employment rate year 1 Employment rate year 2 (Incl. part time employment and seasonal employment)	Employed persons aged 15-64 (By gender)
Relative changes of unemployment	Unemployment rate year 1; Unemployment rate year 2	Unemployed persons aged 15-64 (By age and gender)
Potentially available human resources	Activity rate year 1 Activity rate year 2	Active population / working population
Importance of commuting	Change in commuter figures (Might give information on the function of the region)	Number of commuters (Number of people crossing NUTS5 borders regularly)
Dynamic of the local economy	Business formation rate (Is the area attractive for start-ups? Are incentives given for new businesses?)	Total number of businesses Number of new businesses
Importance of tourism	Importance of tourism (Covers both agri-tourism and conventional tourism)	Number of tourist beds Number of over night stays

3. Infrastructure data

Level of geographic detail:

<i>Issue</i>	<i>Indicator</i>	<i>Variable</i>
Accessibility of the region	Road network, railway, airport (Accessibility of the region; in certain regions of Europe the railway network becomes smaller, e.g. certain connections are closed)	Distance in km to next motorway or similar road Distance to next railway station distance to next airport (From gravity points? Or time to be spend to reach sth.)
Development of transport infrastructure	Investments in transport network last 5 years	EU and national subsidies spent in millions of Euros

Access to services	Proximity to services (banks, post, shops, restaurants, schools, doctors, hospitals, pharmacy etc.) (Attractiveness of the region)	Presence and distance to them
Availability of telecommunications	Internet access, mobile phone cover (These are basic parameters for new businesses)	Number of households /businesses with internet access number of registered mobile phones
Potential for new business formation	Availability of land for industry and other businesses	Area of industrial estates in ha

4. Welfare data

Level of geographic detail:

<i>Issue</i>	<i>Indicator</i>	<i>Variable</i>
Deprivation	Dependence upon social aid (Difficult variable because the threshold to receive social aid varies between member states)	Number of people receiving social aid
Quality of life?	Percentage of people living in self owned property	Total number of people living in own property Total number of people
	Poverty rates	

5. Agriculture and structural change

Level of geographic detail:

<i>Issue</i>	<i>Indicator</i>	<i>Variable</i>
	Structure of Agricultural Holdings	
	Total number of holdings	
	Average age of owners of holdings	
	Farm Size (area),	Average AWU per holding
	Intensity	% of area irrigated % of area under ecological farming LSUs per ha
	Main farm type	According to the classification of the FSS
	Importance of family labour	
	Percentage of part time farmers	
Pluriactivity		Holders with other gainful activities
Importance of Forestry	Percentage of farms with forests	Total number of farms Number of farms with forest

Table 4
EU questionnaire on which common indicators for monitoring rural development programming are constructed

Common cross-cutting evaluation questions

(transversal to the individual chapters of the Council regulation)

1. To what extent has the assistance influenced the population level, composition and distribution in rural areas?
2. To what extent has the assistance been conducive to securing employment?
3. To what extent has the assistance been conducive to provide an appropriate level of income to the rural community?
4. To what extent has the market situation been improved through the assistance especially from redeploying production, improving quality and competitiveness?
5. To what extent have environmental concerns been integrated into rural development programming so as to improve the environmental aspects of activities in rural areas, including agricultural practices?
6. To what extent have programming and implementation helped in producing the anticipated impacts?

Common chapter-specific evaluation questions

(related to the individual chapters 1 to IX of the Council regulation)

Chapter I - Investments in agricultural holdings

- I.1.- To what extent have the investments improved the income of beneficiary farmers?
- I.2.- To what extent have the investments contributed to improve efficiency at holdings?
- I.3.- To what extent have the investments contributed to the reorientation of farming by redeployment of production and diversification of activities?
- I.4.- To what extent have the investments improved the quality of farm products?
- I.5.- To what extent has the diversification of on-farm activities originating from the investments helped maintain employment?
- I.6.- How significant are the impacts of the investments on the rural environment?
- I.7.- To what extent have the investments improved the quality of the production process, notably by improving the working conditions and animal welfare and hygiene?

Chapter II - Setting up of young farmers

- II.1.- To what extent has the setting up aid covered the costs arising from setting up?
- II.2.- To what extent has the setting up aid contributed to the earlier transfer of holdings?
- II.3.- To what extent has the aid influenced the number of young farmers of either sex setting up?

II.4.- To what extent has the setting up of young farmers actually achieved, contributed to safeguard employment?

II.5.- How significant was the synergy with the aid for early retirement in achieving earlier transfer? (cf., question IV,4)

Chapter III - Training

III.1.- To what extent has vocational training of individuals of either sex assisted in achieving efficient and competitive structures?

III.2.- To what extent has the improved level of training contributed to employment, more specifically to enhance job quality?

III.3.- To what extent has vocational training promoted environmentally sustainable management and practice in agriculture and forestry?

III.4.- To what extent has vocational training enabled farmers to conform to standards in the field of hygiene and animal health?

III.5.- To what extent has vocational training been conducive to the uptake of rural development activities?

Chapter IV - Early retirement

IV.1.- To what extent has the aid for early retirement contributed to the earlier transfer of farms and the rejuvenation of the agricultural population?

IV.2.- Was the income offered to the transferors and to farm workers appropriate in terms of offering them a fair standard of living and making them abandon farming?

IV.3.- To what extent has the reassignment of released land to non-agricultural activities contributed to the quality of environment and the preservation of landscape?

IV.4.- To what extent has the aid for early retirement in conjunction with the aid for setting up of young farmers contributed to the improvement of agricultural structures? (11.5)

Chapter V - Less favoured areas and areas with environmental restrictions

V.1.- To what extent have the allowances contributed to farm income?

V.2.- To what extent have the allowances helped in ensuring a continuation of the agricultural land use?

V.3.- To what extent have the allowances in less favoured areas helped in maintaining the farming population?

V.4.- To what extent have the allowances contributed to the protection of the environment?

V.5.- To what extent has differentiation of the allowances with a view to the natural handicaps and environmental problems and according to the regional, sectoral and structural situation, improved the effectiveness and efficiency of the assistance?

Chapter VI - Agri-environment

PM: Biodiversity (habitats and damage to them from farm pollution)

PM: Rural landscapes (biophysical features, appearance of habitats and agricultural ecosystem, cultural & historical features)

PM: Natural resources (soil, water,)

Chapter VII - Improving processing and marketing of agricultural structures

VII.1.- To what extent have the investments helped increase the competitiveness and added value of agricultural products?

VII.2.- To what extent have the producers of the basic agricultural products benefited from the investments?

VII.3.- To what extent have the investments improved human health conditions thanks to the quality of the products and the working conditions?

VII.4.- How significant are the impacts of the investments on the environment and natural resources?

Chapter VIII - Forestry

VIII.1.-To what extent would forest resources be improved or safeguarded in the short, medium or long term due to the aid?

VIII.2.-To what extent has the economic function of forests been improved in a sustainable manner?

VIII.3.-To what extent have the forestry measures contributed to other socio-economic or social functions?

VIII.4: To what extent has biological diversity been conserved or improved?

VIII.5.- To what extent have the protective functions of forest been better ensured?

VIII.6.-How significant is the anticipated stocking of carbon dioxide due to afforestation and forest improvement on a time scale relevant to the international engagements?

Chapter IX - Promoting the adaptation and development of rural areas

IX.1.- Have the assisted actions, specifically those undertaken to improve the living conditions in rural areas, contributed to maintain the population in rural areas?

IX.2.- To what extent has diversification of activities originating from the assistance contributed to the maintenance or creation of employment in rural areas?

IX.3.- To what extent have the actions contributed to maintain or improve the income of the rural population?

IX.4.- How significant have the assisted actions contributed to the rural environment?

Source:[].

Annex 5

World Bank indicators

(i) *List of indicators*

I Basic Data

Annual GDP growth (%)
 Rural population (millions)
 Rural population (% of total)
 Population density, rural (people/sq km arable land)
 Rural life expectancy (years)
 GNI per capita (rural), Atlas method (\$)

II Enabling Environment for Rural Development

Empirical evidence indicate that sound overall macro-economic policy and a supportive institutional framework, good functioning markets and appropriate infrastructural facilities serve as an enabling environment for economic growth and poverty reduction.

II.1. Policies and Institutions

Agricultural subsidies (% of total)
 Agricultural tariffs (%)
 Fiscal decentralization (% of budget transferred to local governments)
 Food price index (1995 = 100)
 Independence of local courts
 Land Gini coefficient
 Local government elections
 Number of farmers' organizations

II.2 Markets

Agricultural raw materials exports (as a % of total merchandise exports)
 Food imports (as % of total merchandise imports)
 Food exports (as % of total merchandise exports)
 Employment in agriculture female (% of female labour force)
 Agriculture household net disposable income as a percentage of all household disposable net income
 Net disposable income per agriculture household member compared to that of members of all households
 Gross rural domestic savings
 Percentage of rural households with access to formal credit services in financial institutions
 Number of market outlets for agricultural input - produce
 Rural labour force, employed

II.3. Infrastructure

Rural roads (% of rural population with access to motorable roads all year round)
 Rural population with access to electricity (%)
 Rural population with access to communications (%): radios, telephone, newspapers and computers

III Broad Based Economic growth For Rural Poverty Reduction

Agricultural development plays a central role in poverty reduction in low-income countries. Increased agricultural productivity, driven by technological investment, has a powerful dynamic effect, which benefits the poor. However, without complimentary growth in non-farm rural income and employment, rural poverty reduction initiatives will not be sustained.

III.1 Poverty

Rural per capita income
 Rural poverty gap ratio
 Proportion of rural population below \$1 (PPP) a day
 Rural poverty headcount ratio (percentage of rural population below poverty line)
 Rural per capita dietary energy supply (calories per day)
 Rural infants with low birth weight (% of births)
 Rural child malnutrition (% of children under five who are stunted)

III.2. Agriculture

Agricultural gross value added (% of total GDP)
 Agricultural gross value added (average annual growth, 1980-2000)
 Agricultural productivity (gross value added per worker 1995\$)
 Number of farm households (narrow definition)
 Number of farm households (broad definition)
 Food production index (1989-91 = 100) and index per capita
 Irrigated land (% of cropland)
 Cropland/ arable land (%)
 Cereal yield (kilograms per hectare)
 Cereal yield (average annual growth)

III.3 Non-farm

Rural gross fixed capital formation (% of GDP)
 Rural labour force, employed in non-farm activities
 Share of rural women employed in the non-agricultural sector (% of total employment in sector)
 Growth of non-agricultural GDP
 Number of rural businesses
 Number of non-agricultural jobs created (annual)

IV Natural Resource Management and Biodiversity

Sustainable management of natural resources (soil, water, pasture and fisheries) provide the foundation for pro-poor rural development. Agriculture is a heavy consumer of natural resources and innovative approaches have to be found to meet agricultural productivity goods while conserving the natural resource base.

Forest area (% of total land area)
 Rural protected areas (% of total land area)
 Annual deforestation (% change, 1990-2000)
 Ratio of rural protected area to maintain biological diversity to rural surface area
 Annual freshwater withdrawal (% of total resources)

Agricultural withdrawal (% of total freshwater withdrawal)
Emission of organic water pollutants (kg per day)

V Social Well-Being (Education and Health)

Improving social wellbeing, and managing and mitigating risks and the vulnerability of rural people is one of the main goals of rural development. To achieve this goal, emphasis should be put on supporting programs that foster human capital (health and education) and social inclusion.

V.1 Education

Rural illiteracy rate (%)
Rural literacy rate (% ages 15-24)
Ratio of rural literate females to males (% ages 15-24)
Net rural enrolment ratio in primary education (% of relevant age group)
Ratio of rural girls to boys in primary, secondary, and tertiary educational (%)
Proportion of rural pupils who reach grade 5 (% of grade 1 students)
Rural primary completion rate (% of relevant age group)

V.2 Health

Prevalence of HIV/AIDS (% of rural adults, age 15-49)
HIV prevalence among pregnant rural women (ages 15 to 24)
Condom use rate of the contraceptive prevalence rate in rural areas
Percentage of rural population 15- to 24-years olds with comprehensive correct knowledge of HIV/AIDS
Prevalence of child malnutrition (% of rural children under five)
Per capita caloric consumption
Immunization rate, measles (% of rural children under 12 months)
Rural maternal mortality ratio (per 1,000 live births)
Rural infant mortality rate (per 1,000 live births)
Proportion of rural births attended by skilled health staff (% of total)
Rural population with access to improved sanitation (%)
Rural population with access to an improved water source (%)
Rural population with access to health services
Per capita caloric consumption
Under-five mortality rate (rural, per 1,000)
Immunization rate, measles (% of rural children under 12 months)
Prevalence of child malnutrition (% of rural children under five)

(ii) Definitions of the indicators

I Basic Data

GDP growth (annual %)

Annual percentage growth rate of GDP at market prices, based on constant local currency. Aggregates are based on constant 1995 U.S. dollars. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without

making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

Rural population (millions)

Rural population is calculated as the difference between the total population and the urban population.

Rural population (% of total)

Rural population is calculated as the difference between the total population and the urban population.

Population density, rural (people per sq km arable land)

Rural population (see definition above) density is the rural population divided by the arable land area. Arable land includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded.

Rural life expectancy at birth, total (years)

Rural life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life in rural areas.

GNI per capita, rural (Atlas method, current US\$)

GNI per capita, rural (formerly GNP per capita) is the gross national income, converted to U.S. dollars using the World Bank Atlas method, divided by the midyear population. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad. GNI per capita, calculated is in current U.S. dollars, converting using the World Bank Atlas Method (see the Statistical Methods in the 2001 World Development Indicators).

II Enabling Environment**II.1 Policies and Institutions****Agricultural subsidies (% of total)**

Agricultural subsidies as a percentage of total value of agriculture output.

Agricultural tariffs (%)

Tariffs on imports of agriculture raw materials and food, percentage of total import value.

Tariffs on agriculture raw materials and food in major export markets.

Fiscal decentralization

Fiscal decentralization is the share of total fiscal resources under control under control of sub-national governments or regional political bodies.

Food price index (1995 = 100)

Food price index is a subindex of the consumer price index.

Independence of local courts

Independence of local courts measures the strength of impartiality of the legal system and observance of the law in sub national government. Besides qualitative appreciation, this indicator can also included information about number of appeals and percentage share of appeals won by plaintiffs.

Land Gini coefficient

This coefficient measures the extent that land distribution in rural areas, among the individuals or households, deviates from a perfectly equal distribution.

Local government elections

Local government elections measure the existence of a system of free and fair elections that are held on a regular basis at the sub-national level. Besides qualitative appreciation, this indicator can also included information about number of political parties or independent list taking part in the election, frequency of election, participation rates, number of appeals to election results etc.

Number of farmers' organizations

Number of farmers' organizations as a share of the number of active community groups, including civil society's networks existing at regional and national levels. Alternatively, percentage share of framers belonging to farmers' organizations.

II.2 Markets**Agricultural raw materials exports (% of merchandise exports)**

Agricultural raw materials comprise SITC rev.3, section 2 (crude materials except fuels) excluding divisions 22 (oil seeds and oleaginous fruits), 27 (crude fertilizers and minerals excluding coal, petroleum, and precious stones), and 28 (metalliferous ores and scrap).

Food imports (% of merchandise imports)

Food imports (% of merchandise imports comprises the commodities in SITC rev.3, sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds and oleaginous fruits).

Food exports (% of merchandise exports)

Food comprises the commodities in SITC rev. 3, sections 0 (food and live animals), 1 (beverages and tobacco), and 4 (animal and vegetable oils and fats) and SITC division 22 (oil seeds and oleaginous fruits).

Employment in agriculture, female (% of female labour force)

Percentage share of total female labour force engaged in agriculture as employed or through self-employed households. Women as a percentage of all persons engaged in agriculture. Agriculture includes hunting, forestry, and fishing corresponding to major division 1 (ISIC revision 2) or tabulation categories A and B (ISIC revision 3).

Agriculture household net disposable income as a percentage of all household disposable net income

For definition of agriculture household net disposable income see chapter X of the present Handbook. For definition of households, see chapter IX. Besides comparison with all households, agriculture household net disposal income could be compared with that of other socio-economic groups, e.g. other self-employed households.

Net disposable income per agriculture household member compared to that of members of all households

Household net disposable income is divided by size of household using equivalence scales as suggested in chapter IX of the present Handbook.

Gross rural domestic savings per capita, percentage of total gross domestic savings per capita

Gross rural domestic savings per capita is the total savings in the rural area divided by the size of the rural population.

Percentage of rural households with access to formal credit services in financial institutions

Number of farmers and percentage of all farmers with credits in financial institutions.

Number of markets outlets for agricultural input-produce

Number of markets outlets for agricultural input-produce is the total number of all physical outlets where buyers and sellers meet regularly to buy or sell agricultural inputs and products.

Rural labour force, employed

Rural labour force, employed refers to agricultural employment. This is the number of workers in agriculture, excluding self-employed persons or persons working in co-operatives as partner.

II.3 Infrastructure

Rural roads (% of rural population with access to roads that can be used by motor vehicles all year round)

Rural population with access to electricity (%)

Rural population with access to electricity (%) is the percentage of rural population with access to public electricity in a given year.

Rural population with access to communications (%)

- access to radios is the estimated number of radios receivers in use for broadcasts to the general public in a rural area.
- access to telephone is the access to telephone main lines which are the telephone lines connecting a customer's equipment to the public switched telephone network.
- access to newspapers is the access to daily newspapers.
- access to computers is the access to personal computers or public facility computers for personal use in a rural area.

III Broad Based Economic Growth for Rural Poverty Reduction

III.1 Poverty

Rural per capita income

Rural per capita income is the annual GNP per capita based on constant local currency. Aggregates are based on constant 1995 U.S. dollars.

Rural poverty gap ratio (incidence x depth of poverty)

Rural poverty gap ratio is the mean distance separating the rural population from the rural poverty line (with the non-poor being given a distance of zero), expressed as a percentage of the poverty line.

Proportion of population below \$1 (PPP) per day

Proportion of rural population below \$1 per day is the percentage of the rural population living on less than \$1.08 a day at 1993 international prices. The \$1 a day poverty line is compared to consumption or income per person and includes consumption from own production and income in kind. Because this poverty line has fixed purchasing power across countries or areas, the \$1 a day poverty line is often called an “absolute poverty line”.

Rural Poverty headcount ratio (% of rural population below the rural poverty line)

The *rural poverty headcount ratio, (% of rural population below the rural poverty line)* is the proportion of the rural population whose incomes are below the official threshold (or thresholds) set by the national government. Rural poverty lines are usually set for households of various compositions to allow for different family sizes. Where there are no official poverty lines, they may be defined as the level of income required to have only sufficient food or food plus other necessities for survival.

Rural per capita dietary energy supply (calories per day)

Rural per capita dietary energy supply (calories per day) refers to the total amount of the commodity available for human consumption during the year.

Rural infants with low birth weight (% of births)

Rural infants with low birth weight (% of births) is the percentage of newborn babies weighing less than 2,500 grams, with the measurement taken within the first hours of life, before significant postnatal weight loss has occurred.

Rural child malnutrition (percentage of children under five who are stunted)

Rural child malnutrition (percentage of children under five who are stunted) is the percentage of children under five whose height for age are more than two standard deviations below the median for the international reference population ages 0 to 59 months. For children up to two years of age, height is measured by recumbent length. For older children, height is measured by stature while standing. The reference population adopted by the WHO in 1983, is based on children from the United States, who are assumed to be well nourished.

III.2 Agriculture

Agriculture, gross value added (% of total GDP)

Agriculture corresponds to ISIC rev. 3 divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Gross value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. For definition, see System of National Accounts 1993.

Agriculture, gross value added (average annual % growth, 1980-2000)

Average annual growth rate for agricultural gross value added (for definition, see above) based on constant local currency. Aggregates are based on constant 1995 U.S. dollars.

Agricultural productivity (Agriculture gross value added per worker)

Agricultural productivity is measured as agriculture gross value added per worker or hours worked.

Number of farm households (narrow definition)

Number of farm households (narrow definition) is the number of households, whose main source of livelihood is directly derived from farming activities, including crop cultivation and animal husbandry.

Number of farm households (broad definition)

Number of farm households (broad definition) is the number of households, whose livelihood is to some extent derived from farming activities, including crop cultivation and animal husbandry.

Food production index (1989-91 = 100) and index per capita

Food production index covers food crops that are considered edible and that contain nutrients. Coffee and tea are excluded because, although edible, they have no nutritive value.

Irrigated Land (% of cropland)

Irrigated land (% of cropland) refers to areas purposely provided with water, including land irrigated by controlled flooding. Cropland refers to arable land and land used for permanent crops.

Cropland/arable land (%)

Permanent cropland is land cultivated with crops that occupy the land for long periods and need not be replanted after each harvest, such as cocoa, coffee, and rubber. This category includes land under flowering shrubs, fruit trees, nut trees, and vines, but excludes land under trees grown for wood or timber. Arable land (in hectares) includes land defined by the FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow. Land abandoned as a result of shifting cultivation is excluded.

Cereal yield (kilograms per hectare)

Cereal yield, measured as kilograms per hectare of harvested land, includes wheat, rice, maize, barley, oats, rye, millet, sorghum, buckwheat, and mixed grains. Production data on cereals relate to crops harvested for dry grain only. Cereal crops harvested for hay or harvested green for food, feed, or silage and those used for grazing are excluded.

Cereal yield (average annual growth)

Cereal yield, measured as average annual growth is the rate of change of total cereal harvested in a given year.

III.3 Non-Farm

Rural gross fixed capital formation (% of GDP)

Gross fixed capital formation in rural and non-rural areas are related to GDP.

Rural labour force, employed in non-farm activities.

Rural labour force, employed in non-farm activities is the share of rural labour force employed in non-agricultural activities.

Share of rural women in wage employment in the non-agricultural sector

Share of women in wage employment in the non-agricultural sector is the share of female workers in the non-agricultural sector expressed as a percentage of total employment in the sector.

The *non-agricultural sector* includes industry and services. Following ISIC rev.3, *industry* includes mining and quarrying (including oil production), manufacturing, construction, electricity, gas, and water. *Services* includes wholesale and retail trade; restaurants and hotels; transport, storage and communications; financing, insurance, real estate and business services; and community, social and personal services. Employment refers to people above a certain age who worked, or held a job, during a reference period. Employment data include both full-time and part-time workers whose remuneration is determined on the basis of hours worked or number of items produced and is independent of profits or expectation of profits.

Growth in non agricultural GDP

Growth in non-agricultural GDP is the annual growth rate for non-agricultural value added based on constant local currency.

Number of rural businesses

Number of rural businesses is the total number of all newly created businesses in the rural area in a given year. This includes all legal form of businesses, from sole proprietorships to corporations.

Number of non-agricultural jobs created (annual)

Number of non-agricultural jobs created (annual) is the annual number of newly created jobs in the non-agricultural sector in rural areas.

IV Natural Resource Management and Biodiversity

Forest area (% of land total area)

Forest area (% of total land area) is the total surface area of the country covered by forest less the area covered by inland waters, like major rivers and lakes. As defined in the Food and Agricultural Organization's (FAO) *Global Forest Resources Assessment 2000*, forest includes both natural forests and forest plantations. It refers to land with an existing or expected tree canopy of more than 10 percent and an area of more than 0.5 hectare where the trees should be able to reach a minimum height of 5 meters. Forests are identified both by the presence of trees and the absence of other land uses. Land from which forest has been cleared but that will be reforested in the foreseeable future is included. Excluded are stands of trees established primarily for agricultural production, such as fruit tree plantations.

Rural protected areas (% of total land area)

Rural protected areas (% of total land area) are totally or partially protected areas of at least 1,000 hectares that are designated as national parks, natural monuments, nature reserves or wildlife sanctuaries, protected landscapes and seascapes, or scientific reserves with limited public access in rural areas. The data do not include sites protected under local or provincial law. Total land area is used to calculate the percentage of total area protected.

Annual deforestation change (% change, 1990-2000)

Average annual deforestation refers to the permanent conversion of natural forest area to other uses, including shifting cultivation, permanent agriculture, ranching, settlements, and infrastructure development. Deforested areas do not include areas logged but intended for regeneration or areas degraded by fuelwood gathering, acid precipitation, or forest fires. Negative numbers indicate an increase in forest area.

Ratio of rural protected area to maintain biological diversity to rural surface area

The *ratio of rural protected area to maintain biological diversity to rural surface area* is defined as nationally protected area as a percentage of total surface area of a country. The generally accepted IUCN–World Conservation Union definition of a protected area is an area of land or sea dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources and managed through legal or other effective means.

Annual freshwater withdrawals (% of total resources)

Freshwater use refers to total freshwater withdrawals for domestic, industrial, and agricultural use, not counting evaporation losses from storage basins. Total resources refer to total renewable resources, which include internal flows of rivers and groundwater from rainfall in the country, and net river flows from other countries. Withdrawals also include water from desalination plants in countries where they are a significant source, and can exceed 100 percent of total renewable resources where extraction from non-renewable aquifers or desalination plants is considerable or where there is significant water reuse.

Agricultural withdrawals (% of total freshwater withdrawals)

Agricultural withdrawals (% of total freshwater withdrawals) refer to the total freshwater withdrawals for irrigation and livestock production.

Emission of organic water pollutant (kg per day)

Emissions of organic water pollutants are measured in terms of by biochemical oxygen demand, which refers to the amount of oxygen that bacteria in water will consume in breaking down waste. This is a standard water-treatment test for the presence of organic pollutants.

V Social Well-Being

V.1 Education

Rural illiteracy rate

Rural illiteracy rate is the proportion of rural population age 15 and above, who cannot, with understanding, read and write a short, simple statement on their everyday life.

Rural Literacy rate of 15–24 year-olds

Rural Literacy rate of 15–24 year-olds, or the youth literacy rate, is the percentage of the rural population ages 15–24 years old who can both read and write with understanding a short simple statement on everyday life. The definition of literacy sometimes extends to basic arithmetic and other life skills.

Ratio of literate rural females to males 15–24 year olds (% ages 15-24)

The *ratio of literate rural female to males 15–24 years old* (Literacy Gender Parity Index) is the ratio of the rural female literacy rate to the rural male literacy rate for the age group 15–24.

Net rural enrolment ratio in primary education (% of relevant age group)

Net rural primary enrolment ratio is the ratio of the number of rural children of official school age (as defined by the national education system) who are enrolled in primary school to the total rural population of children of official school age. *Primary education* provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music

Ratio of rural girls to boys in primary, secondary and tertiary education

Ratio of rural girls to boys in primary, secondary and tertiary education is the ratio of the number of female students enrolled at primary, secondary and tertiary levels in public and private schools to the number of male students in rural areas.

Proportion of rural pupils starting grade 1 who reach grade 5 (% of grade 1 students)

The *proportion of rural pupils starting grade 1 who reach grade 5*, known as the survival rate to grade 5, is the percentage of a cohort of pupils enrolled in grade 1 of the primary level of education in a given school year who are expected to reach grade 5 in rural areas.

Rural Primary completion rate

Rural Primary completion rate is the ratio of the total number of rural students successfully completing (or graduating from) the last year of primary school in a given year to the total number of children of official graduation age in the population.

V. 2Health**Prevalence of HIV/AIDS (% of rural adults, age 15-49)**

Percentage of rural population aged 15-49 whose blood test samples test positive for HIV.

HIV prevalence among 15-24 year old pregnant rural women

HIV prevalence among 15-24 year old pregnant women is the percentage of pregnant rural women ages 15-24 whose blood samples test positive for HIV.

Condom use rate of the contraceptive prevalence rate in rural areas

Condom use rate of the contraceptive prevalence rate in rural areas is the number of women ages 15-49 in marital or consensual unions who are practicing contraception by using condoms as a proportion of all of women of the same age group in consensual unions who are practicing, or whose sexual partners are practicing, any form of contraception.

Percentage of rural population aged 15-24 with comprehensive correct knowledge of HIV/AIDS

Percentage of rural population ages 15-24 with comprehensive correct knowledge of HIV/AIDS is the share of women and men ages 15-24 who correctly identify the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), who reject the two most common local misconceptions about HIV transmission and who know that a healthy-looking person can transmit HIV.

Immunization rate, (rural children under 12 months)

The Immunization rate, (rural children under 12 months) is the percentage of rural children under 12 months of age who have received at least one dose of measles vaccine.

Rural Maternal mortality ratio (per 1,000 live births)

The rural *maternal mortality ratio* is the number of rural women who die from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, per 1,000 live births. The 10th revision of the International Classification of Diseases makes provision for including late maternal deaths occurring between six weeks and one year after childbirth.

Rural infant mortality rate

The rural *infant mortality rate* is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of one if subject to current age-specific mortality rates in rural areas.

Proportion of rural births attended by skilled health staff (% of total)

The proportion of rural births attended by skilled health staff (% of total) is the percentage of deliveries attended by personnel trained to give the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period; to conduct deliveries on their own; and to care for newborns in rural areas. *Skilled health personnel* include only those who are properly trained and who have appropriate equipment and drugs. Traditional birth attendants, even if they have received a short training course, are not to be included.

Rural population with access to improved sanitation (%)

Rural population with access to improved sanitation (%) refers to the percentage of the rural population with access to facilities that hygienically separate human excreta from human, animal and insect contact. Facilities such as sewers or septic tanks, pour-flush latrines and simple pit or ventilated improved pit latrines are assumed to be adequate, provided that they are not public, according to the World Health Organization (WHO) and United Nations Children's Fund's (UNICEF) *Global Water Supply and Sanitation Assessment 2000 Report*. To be effective, facilities must be correctly constructed and properly maintained.

Rural population with access to an improved water source (%)

Rural population with access to an improved water source (%) is the percentage of the rural population who use any of the following types of water supply for drinking: piped water, public tap, borehole or pump, protected well, protected spring or rainwater. Improved water sources do not include vendor-provided waters, bottled water, tanker trucks or unprotected wells and springs.

Rural population with access to health services

Rural population with access to health services is the proportion of the rural population that can expect treatment from common diseases and injuries, including essential drugs on the national list, within one hour's walk or travel

Per capita caloric consumption

Per capita caloric consumption refers to the total amount of the commodity available for human consumption during the year.

Under-five mortality rate (rural, per 1,000)

Under-five mortality rate (rural, per 1,000) is the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of five if subject to current age-specific mortality rates in rural areas.

Immunization rate, measles (% of rural children under 12 months)

The proportion of 1-year-old children immunised against measles is the percentage of children under one year of age who have received at least one dose of measles vaccine.

Prevalence of child malnutrition (% of rural children under five)

Prevalence of child malnutrition (% of rural children under five) refers to the percentage of rural children who are stunted. This refers to children under five in the

rural area whose height for age is less than minus two standard deviations from the median from the international reference population aged 0-59 months. For children up to two years of age, height is measured by recumbent length. For older children, height is measured by stature while standing. The reference population, adopted by WHO in 1983, is based on children from the United States, who are assumed to be well nourished.