Using indicators in planning education for rural people:

a practical guide

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List of abbreviations

CD	Compact disc
EFA	Education for All
ERP	Education for Rural People
FAO	United Nations Food and Agriculture Organization
FRESH	Focusing resources for effective school health
GDP	Gross domestic product
GNP	Gross national product
IIEP	International Institute for Educational Planning
INES	Indicators of education systems
INSEE	*Institut national de la statistique et des études économiques* (National Institute for Statistics and Economic Studies, France)
IPES	*Indicateurs de pilotage des établissements du secondaire* (Indicators for the guidance of secondary schools, France)
ICT	Information and communication technology
MOE	Ministry of Education
NER	Net enrolment rate
NFE	Non-formal education
NFE-MIS	Non-formal education management information system
NGO	Non-governmental organization
OECD	Organisation for Economic Co-operation and Development
PRSP	Poverty Reduction Strategy Paper
SDAR	Rural Institutions and Participation Service, FAO
SDRE	Extension, Education and Communication Service, Sustainable Development Department, FAO
SMT	Science, mathematics and technology
UNDP	United Nations Development Programme
UNESCO	United Nations Organization for Education, Science and Culture
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
US	United States

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Preface

Education for rural people is crucial to achieving both the Education for All (EFA) goals, and the Millennium Development Goals (MDGs) of eradicating extreme poverty and hunger, ensuring universal primary education by 2015, promoting gender equity and ensuring environmental sustainability. In 1996, the World Food Summit in Rome stressed increased access to education for the poor and members of disadvantaged groups, including rural people, as a key to achieving poverty eradication, food security, durable peace and sustainable development. The 2002 World Summit on Sustainable Development, held in Johannesburg, also emphasized the role of education.

As the majority of the world's poor, illiterate and undernourished live in rural areas, it is a major challenge to ensure their access to quality education. The lack of learning opportunities is both a cause and an effect of rural poverty. Hence, education and training strategies need to be integrated within all aspects of sustainable rural development, through plans of action that are multisectoral and interdisciplinary. This means creating new partnerships between people working in agriculture and rural development, and people working in education.

To address this challenge, the Directors-General of FAO and UNESCO jointly launched the flagship programme on *Education for rural people* (ERP) in September 2002 (http://www.fao.org/sd/erp/), during the World Summit on Sustainable Development. This initiative involves an inter-agency approach to facilitate targeted and co-ordinated actions for education in rural areas.

It is within this framework, and to provide inspiration for the flagship initiative, that the FAO's Extension, Education and Communication Service and UNESCO's International Institute for Educational Planning (IIEP) have jointly launched a series of publications. This series is co-ordinated and edited by David Atchoarena (IIEP) and Lavinia Gasperini (FAO).

Introduction

Despite all the efforts deployed by the countries of the world and the vigorous mobilization of the international community, rural people are lagging far behind in education and are particularly hard hit by poverty and hunger. In developing countries, the slow progress towards universal education is largely due to the sluggish growth of school enrolment among rural people, and the consequent persistence of very low enrolment rates in rural areas. The poverty, hunger and underdevelopment afflicting rural areas are holding back educational development. These instances of interdependence illustrate the complementarity of goal 1 (eradicating extreme poverty and hunger) with goal 2 (achieving universal primary education) of the Millennium Development Goals as well as with the Education for All (EFA) goals.

As stated in the preface, this guide is the fruit of collaboration between the International Institute for Educational Planning (IIEP) and the United Nations Food and Agriculture Organization (FAO) in the 'Education for Rural People' (ERP) Partnership Programme. ERP is one of the Education for All (EFA) flagship programmes launched at the World Summit on Sustainable Development in Johannesburg in 2002. The objectives of this initiative – for which FAO is the lead agency in partnership with UNESCO – are, among others, to close the educational gap between rural and urban areas, to broaden access to basic education for rural dwellers, and to improve the quality of basic education in rural areas. In this context, policy-makers and indeed all members of the educational community need objective data to inform educational management and planning policies that are attuned to the needs of rural people. This requirement forms part of the broad-based movement to develop a culture of evaluation.

The booklet sets out the principles and techniques used to develop tools specifically for the monitoring and guidance of rural education strategies. These should address two basic concerns:

- How should the implementation of actions to reduce disparities be evaluated and monitored?
- How can the progress achieved with respect to the designated goals be measured simply, but with strict accuracy?

The guide focuses more particularly on the development of a coherent set of indicators to monitor national education strategies for rural people. Since the issues of access, equity and quality assume somewhat different forms in the rural context, indicators specific to that context must be selected.

Another aim of the guide is to promote transparency in the use of the considerable resources that have been, and continue to be, allocated to educational development for rural people.

Although the booklet mainly concerns the national level, some guidelines will be provided on producing similar sets of indicators to measure regional diversity within a country.

Many countries already have databases on rural education. They are compiled from data collected regularly on the education system and updated periodically using the results of school censuses. Although the quality and accuracy of these data are far from perfect, their relevance and utility for policy-making are evident. Only in a few countries, however, do policy-makers refer to these data to guide education policy. The problem lies with their presentation and dissemination. With a few exceptions, they are not easily accessible and/or available in a form that non-specialists find easy to use.

In this volume, the FAO and IIEP are building on earlier work on indicators for rural development and education. Several types of publications containing a variety of indicators have appeared in the past 15 years. The first international comparative studies were initiated by UNESCO, and the OECD has greatly expanded on this work (see OECD, 1993-2004). At the same time, a number of publications dealing with individual countries and generally produced by education ministries have appeared. The first of these were *Education indicators* (Ministry of Education, Quebec, 1994) in Quebec and *L'état*

de l'école (Ministry of Education, France, 1991) in France. The latter has since been supplemented by *Géographie de l'école* (Ministry of Education, France, first published in 1993), a report on regional disparities within France.

The IIEP became involved in this area in 1991. This led to the publication of two documents, one on Lesotho (in English; Ministry of Education, 1992) and the other on Mali (in French; Ministry of Basic Education, 1993). The originality of these documents lies in the way in which the quantitative data are presented and analyzed, and hence in the type of document published, rather than in the design of the indicators themselves. In fact, these studies were a continuation of the Institute's longstanding work on the construction of useful indicators for educational planning. This body of research includes publications on school mapping (see Hallak, 1976), regional disparities (see Carron and Châu, 1981) and, more recently, the quality of education (Ross and Mählck, 1990; Chapman and Mählck, 1993).

To date, however, no work of this type had dealt specifically with the issue of education for rural people. Several publications address general problems of rural development, but most devote little space to education, despite monitoring of the ERP goals being a vital component of the EFA process.

Monitoring and follow-up of ERP strategies, which have often been neglected, are vital to make stakeholders aware of the issues and to improve the planning and implementation of both EFA and rural development plans.

CHAPTER 1
PRELIMINARIES

In order to develop a system of indicators for any given educational sector, it is essential to have an information system and a development plan for that sector. For rural education, a plan concerned specifically with the rural environment – and more precisely with education for rural people – is also required. In addition, environmental data are needed more in the rural context than for the education system as a whole. To begin thinking about these questions, it is essential to define both what is to be considered part of the rural environment and the common characteristics of rural people.

1. Rural people and the rural environment: definitions

The FAO's Rural Institutions and Participation Service (SDAR) in the Rural Development Division defines rural people as those living in settlements with an average of less than 10,000 inhabitants and located in areas where the dominant features are farms, forests, bodies of water, mountains and/or deserts.

Most rural dwellers work in agriculture, often for low rates of compensation. They face high transaction costs[1] and have little political clout. The government services to which they have access are generally inappropriate and of poor quality. Rural people are generally farmers, stockbreeders, fishermen and, in some cases, nomads.

The rural environment may be defined in a number of ways. Interestingly, no definition is universally accepted. These differences of definition are found both among the developed and developing countries.

A first classification is based on categories of municipalities.

Many countries classify municipalities in categories ranked by size: those with less than 1,000 inhabitants, those with 1,001 to 5,000 inhabitants, etc. This cannot be the only criterion used, however, as some small municipalities belong to very large and heavily populated urban areas. The size criterion is therefore combined with one based on the type of settlement and, as a result, an urban unit is defined in terms of continuity of built-up areas and the size of the population. Such an urban unit is made up of 'population clusters'.

One possible definition of a 'population cluster' is a set of dwellings with at least 50 inhabitants, such that no dwelling is more than 200 metres from the next.

If this definition is adopted, a municipality may be called rural when it does not belong to an urban unit and when its clustered population is less than 2,000.

Another type of classification that can be used to describe the rural environment is analysis by type of economic activity. For example, rural municipalities whose primary activities are farming-related may be distinguished from municipalities with similar characteristics but whose economic activities are in manufacturing or services.

Some developing countries select a third type of classification, combining the previous classification by type of activity with one based on criteria related to infrastructure or accessibility. In Lao PDR, for example, an urban area is defined as meeting three of the five following conditions:

- the availability of a market in the village;
- the availability of an access road for motor vehicles;
- the location of the village near the district or provincial capital;
- the presence of electric power in the majority of homes or households in the village; and
- the availability of running water in the majority of homes or households.

This type of definition is sometimes combined with the notion of poverty. In Lao PDR, districts are also defined as poor or extremely poor on the basis of criteria related to resources and available infrastructure. It is helpful, however, to distinguish clearly between these two approaches, even if they often overlap. Extreme poverty is very often linked to a situation of rurality and geographical isolation.

A fourth type of classification is used in countries with highly detailed information for their entire territory, notably on the basis of

1. Transaction costs are understood to comprise all of the costs related to the exchange of goods and services, as well as those related to property (legal costs, etc.).

very thorough censuses. On this basis, they can identify rural areas with great precision according to population density. England and Wales, for example, use information based on the smallest unit for which statistical data are available: one hectare, i.e. 100 metres by 100 metres. There are 35 million such units in England and Wales combined. The population density in this unit is calculated. However, in order to distinguish between high density in a village[2] and in a major city, densities are calculated for increasingly large areas with a view to characterizing the initial unit. Thus, if population density decreases very rapidly when the area considered is enlarged, the initial unit is probably the centre of a village; if it decreases only slowly or not at all, the initial unit is probably the centre of a city.

On the basis of these principles, 'density profiles' and various criteria relating to the values of these densities are determined, allowing a highly accurate description of the characteristics of each unit.

Once each basic unit has been described, it is necessary to establish rules for defining groupings of such units (electoral divisions, districts, etc.). An administrative unit is thus described according to the weighted proportions of its constituent basic units. By combining types of units and population dispersion, we obtain five broad categories of administrative divisions:

- urban (population cluster greater than 10,000);
- town with only slightly dispersed housing;
- slightly dispersed village/hamlet;
- town with dispersed housing; and
- dispersed village/hamlet.

The point of this classification is to be able to group the basic units together in the ways most relevant to the various types of analysis, as well as to identify locations where the population is highly dispersed and where provision of social services, particularly education, is difficult and costly. This allows better targeting of the operational areas and cost of a 'rural' policy, especially where education is concerned.

2. Which in fact measures the density of the centre of the village.

This methodology requires a very precise population census and highly detailed demographic maps. An example of maps produced as part of this approach is presented in *Chapter 4*.

In the European Union, a fifth classification is sometimes used:

- areas dominated by a major city;
- areas formed of multiple nuclei with high urban and rural population density (but what exactly is meant by high urban and rural population density?);
- networks of small towns; and
- remote rural areas.

France has defined an aggregate called a 'predominantly rural area' that is of considerable size, representing 18 per cent of the country's population and 58.9 per cent of its land area. But what is a 'predominantly rural area'?

For the purpose of clarity, a series of definitions is proposed. To give a negative definition, a predominantly rural area can be considered as a space that is not predominantly urban. A 'predominantly urban area' is an urban centre, an urban periphery or a multipolar municipality:

- An 'urban centre' is an urban unit offering more than 5,000 jobs. An urban unit is an aggregate composed of municipalities linked by their built-up areas, the whole forming a population cluster of at least 2,000 inhabitants. A population cluster is a group of dwellings in which no one dwelling is further than 200 metres from the next;
- An 'urban periphery' is an aggregate made up of municipalities (or small clusters) in which at least 40 per cent of the employed resident population works in the urban area;
- An 'urban area' is a group of touching municipalities, without pockets of clear land, made up of an urban centre and its periphery; and
- A 'multipolar municipality' is a rural municipality or an urban unit not located in an urban area, in which at least 40 per cent of the employed resident population works in several nearby urban areas, but where this percentage is not reached with respect to any one of these urban areas.

For the sake of precision, this complexity of definition is necessary. Finally, a great deal of statistical information on the population and working population are used at the local level, but most countries are far from possessing data at this level.

These diverse classification schemes also reveal the difficulty with the different approaches to defining rural and urban areas and the relationships between them. Definitions based on the criterion of physical clustering of a settlement (population density and/or land use) do not capture more complex relationships within the territory considered, whereas a more functional approach to rural/urban differences might do so. To capture these linkages properly, however, a great deal of information is required.

A final obstacle that should be mentioned is that after primary education, pupils from rural areas are assigned to secondary schools that do not belong to the rural environment. It is therefore difficult to obtain a comprehensive view of their education and the difficulties they face if the analysis is restricted to rural schools.

2. An information system

Without a good information system, it is obviously impossible to construct a meaningful set of indicators. As mathematicians would say, however, an information system is a necessary but not sufficient condition.

Most countries have set up information systems. The ever-growing size of education systems and the complexity of their operations make it necessary to spell out the reasons and arguments underlying educational strategies and actions. This requirement has been accentuated by the quest for efficient resource use in a context of increasing scarcity. Hence the growing need to develop or strengthen information systems so that they can become one of the pillars of the planning or decision-making process.

Education for rural people has benefited from this development, but the system is even more costly to run in rural areas than in urban areas. In many cases, it has produced only statistical yearbooks that are not easily accessible to most stakeholders in the education system: policy-makers; teachers; parents; and pupils. Hence the quality and quantity of information have often decreased, since information that is used little or not at all tends to become less reliable or disappear altogether.

The conditions specific to rural people and the rural environment make it necessary to undertake further investigation so that the difficulties encountered can be properly analyzed. In rural areas, for example, it is particularly important to have information on the distances students travel to school; the existence of school canteens and boarding schemes; teacher turnover rates; the granting of bonuses; and housing allocations for teachers.

It will often be important to have an information system for the local level (the municipality, district or township) in order to capture the diversity and complexity of this level and to monitor and properly assess its development. Data collection should cover the non-formal education system, which plays a fundamental role in local development. We will come back to these points in *Chapters 3* and *4*.

Further, if the information is to be useable, it must be up to date. Another important requirement, then, is to have recent data, i.e. for the current school year or, failing this, the previous school year. In many countries, this requirement is not always met, however decision-makers cannot be asked to rely on old data. They are interested in the impact of their actions, which makes it essential to have data for the current year, and in sufficient detail to gauge the effect of recent policy. Ministers need to know what results their policies and actions are having; parents want to use the data to influence the ongoing schooling of their children.

To hasten availability of data, a growing number of countries conduct quick surveys of representative samples of schools to collect information on education. This approach can be particularly useful in the following situations:

- to ease the burden on schools, certain types of information (those that do not require exhaustive collection) will be collected only for a limited number of schools. This approach is also very useful in cases where it is difficult to collect information on all schools, as reaching some of them can be very difficult and time-consuming;

- to obtain quick feedback, for example on the implementation of a new policy, a sample of schools can furnish the needed data.

In this respect, it should be recalled that an indicators system is not designed for the same purpose as a statistical yearbook. The former is intended to show change in the education system, highlight certain trends and identify problems, while the latter brings together all the available data on education in one comprehensive volume. The latter must be exhaustive, whereas the former need not be.

Working with indicators can help to improve the information system in terms of both volume and reliability. The dissemination of indicators provides feedback for those who produce the basic information (school principals, regional education authorities, etc.). The latter can see the extent to which their data gathering work is important, helpful and put to use.

Work on indicators can also identify gaps in data collection that make it impossible to calculate a given indicator, even if the latter is regarded as highly significant. In this case, it will be worthwhile to change the data collection process so that it better meets the needs of the indicators system.

A great deal is said today about the reliability of such data. Admittedly, it is often impossible to have precise details on school enrolments, but waiting passively for some hypothetical degree of accuracy to emerge is not an option. On the contrary, it is by disseminating and using data (with all due precaution) that one can improve its quality. This is what statisticians call the 'virtuous circle'.

Some problems, of course, are so evident that precision closer than a few percentage points is not needed. Even with demographic data of highly uncertain quality, the Timbuktu and Gao regions in Mali cannot be seen as having high enrolment rates or encouraging schooling for girls. Similarly, despite uncertainty over the accuracy of pre-school enrolment figures in Ethiopia (Ministry of Education, Ethiopia, EMIS Department, 2002), rural areas are still seen to be disadvantaged (with gross enrolment rates of under 5 per cent in most rural areas) compared to urban areas (36.4 per cent in Addis Ababa). To improve the quality of statistics, one must put them to use.

In addition, policy-makers will be able to give more support to entities that provide them with directly useable information.

The data collected by information systems must then be transformed into a set of indicators. This process is the subject of this guide.

3. An education policy and/or education plan

An information system is vital, but not sufficient, for the construction of a relevant set of indicators. An education policy or plan is equally as important as far as the selection of indicators is concerned.

Indeed, in addition to providing a clear, relevant and simple description, indicators should measure events or changes of interest on the part of the various agents of the education system, in particular the rural population. Clear and measurable objectives for the education system must next be defined. These can be presented in different ways: through a plan; a framework policy; well-identified measures in education policy; or in certain decrees, etc.

The most appropriate indicators for the selected objectives can then be designed.

Many countries have rural development plans. These plans address development in its various aspects (economic activities, poverty, etc.), but give only a minor role to education. Further reflection is therefore needed to determine which indicators are significant and identify those best suited for monitoring and evaluating educational development in rural areas. This last point also concerns the developed countries, several of which have deliberately implemented rural development policies with a fairly substantial education component (see *Chapter 2*).

One of the difficulties involved will be inducing the various ministries concerned with rural development (education, agriculture, planning or regional development, etc.) to work together and adopt commonly agreed-on goals, coherent strategies and measurement instruments.

Finally, it should again be emphasized that non-formal education is an essential factor in

rural development. The difficulties involved in managing, evaluating and sustainably developing non-formal education are well-known, and we must strive to construct indicators that will be of assistance to these processes. This is not the least of the challenges presented by this type of work, and is one that this guide will endeavour to take up.

In Lesotho, the five-year plan called for bringing 80 per cent of a generation to literacy, i.e. to the fourth year of primary school. In this case, the indicator was defined immediately as the proportion of a generation reaching the fourth year. Mozambique specified that in 2015 compulsory primary education should be available free of charge to all children, and particularly girls in rural areas. In Paraguay, the goal was to reduce the illiteracy rate among rural women and men to 12.5 per cent and 8.5 per cent respectively by 2005. Thailand, where primary education is far more developed, wished to increase provision at the lower secondary level, so that by 2000 all primary school completers could go on to this level. Most countries have set similar quantitative goals. Objectives such as reducing disparities between girls and boys and increasing the budget share allocated to basic education may be placed in the same category.

Defining an objective in quantitative terms is not always sufficient, however, to make it perfectly precise. For example, an objective such as 'increasing enrolment in a country, region or continent by 40 per cent' is poorly formulated, as what this 40 per cent really applies to is not clear. Is this to be an increase in absolute terms (in which case, the question arises as to how to treat a location that already has an enrolment rate of 80 per cent)? Or is it to be an increase in relative terms? Despite its quantitative formulation, the definition is ambiguous.

When the objectives and policy orientations are more vague, such as 'improving the quality of teaching', the work is trickier. One must know what 'quality' means in the country concerned: Does it refer, for example, to the qualification of the teacher; the achievement of the pupils; the average number of years spent at school; a schooling without repetition; or a good rate of management support? This shows the utility of a debate preparing a fixed set of indicators and the variability of difficulties in transforming a policy objective into an indicator. Objectives such as 'strengthening institutional capacities', 'improving the school network' or 'improving management support for teachers' are of the same nature.

CHAPTER 2
DEVELOPMENT OF A LIST OF INDICATORS ON EDUCATION FOR RURAL PEOPLE

1. What is an indicator?

An indicator may be defined as a tool that should make it possible both to have a sense of the state of an education system and to report on that state to the whole of the education community, in other words, to the whole of the country.

One misunderstanding is very important to avoid: An indicator is not an elementary item of information. It is information processed so as to permit the study of an educational phenomenon. Therefore, one should not confuse a list of indicators with a set of tables produced for a statistical yearbook or to meet management needs. If, for example, the raw data consist of the number of pupils entering secondary school or the number of teachers and pupils, the corresponding indicators will, in the former case, be the proportion of a given generation that reaches the secondary level, and in the latter be the number of pupils per teacher. The difference is obvious, as is the difference in analytic potential.

It is often very tempting to add crude data to indicators. This distortion must be avoided in order to preserve the appropriate character of work with indicators.

An objective may be defined by a number (for example, increasing the number of teachers in rural areas by 5,000). In this case, this number must be included in the set of indicators. However, this should remain an exception that does not change the rule.

As mentioned in other studies, the characteristics of a good indicator may be outlined as follows:

- relevance;
- ability to summarize information without distortions;
- co-ordinated and structured character, allowing it to be related to other indicators for a global analysis of the system;
- precision and comparability; and
- reliability.

It should enable users to:

- measure how far or how close one is from an objective;
- identify problematic or unacceptable situations;
- meet policy concerns and answer the questions leading to its choice; and
- compare its value to a reference value, to a standard or to itself, as computed for a different observation period.

A system of indicators works like a control panel. It facilitates the identification of problems and allows for their magnitude to be measured. Detailed diagnosis and solution-finding requires complementary analysis and research. An apt (classical but appropriate) image would be that of a light warning that an engine is overheating. When the light goes on, a specialist must first find out why, and then search out the solution to the problem.

In summary, indicators play an important role in monitoring and evaluating the functioning of the education system.

2. What should be measured in the context of the Education for Rural People (ERP) strategy?

In order to construct a good indicator, one must be able to identify the most interesting phenomena to measure. These will depend, *inter alia*, on the country's choices as inspired by the objectives of its education policy. The relevance of some indicators is more universal and descriptive, but in every case their importance will depend on the context. The areas covered generally relate to access, coverage, quality, efficiency and resource management (see the summary of this chapter, p. 32).

The enrolment rate in primary education is a good indicator, but loses much of its importance once a country achieves universal enrolment. It comes as no surprise, then, that the net enrolment rate at the primary level appears in the indicator documents of Mali and Lesotho, but not in France's *L'état de l'école* (Ministry of Education, 1991-2004). On the other hand, not all indicator documents contain indicators of enrolment among children aged two to five years.

The following examples are more specific to the issues we are concerned with here: a) in countries that leave part of the curriculum to local initiative, indicators of the organization and content of these options will be highly relevant, whereas

they would not be applicable in countries where the entire curriculum is set at national level. Kosovo, for example, gives its lower secondary schools discretion over 10-20 per cent of pupils' schedules (depending on the grade and subject); b) the percentage of pupils 'who walk more than 3 km to school' or 'who attend a single-teacher school' may be useful indicators for the countryside, but certainly not for urban areas.

Many such examples could be cited, particularly as regards the choice of relevant indicators for rural versus urban areas. It is therefore necessary to analyze the situation and the specific plans of the country under study.

These indicators must also aim to describe the education system. In this respect, simplicity and precision must be the order of the day. A general overview is needed; it should provide points of comparison for the analysis of various phenomena. Moreover, it is clear that some aspects of an education system can only be observed in time series. Hence it is essential to present trends over several years. Finally, it is also vital to report on diversities or disparities. Even, in rural areas, these may be multiple in nature: geographic or socio-demographic (gender, social class, etc.).

Aside from their descriptive aspects, indicators must provide grounds for a policy analysis. One should be able, by using a set of indicators, to find a means of better understanding and explaining the causality relations underpinning the functioning of the education system. Such is the price of transparency. Naturally, these different interpretations are delicate. It is for this reason that it is important that the selected group of indicators allow for several points of view. This is difficult work, but is the only way to provide monitoring tools to decision-makers as well as the means for society as a whole to understand.

3. Defining the objectives of an education policy or plan in the ERP context

This phase is essential, as in order to properly evaluate a given educational policy or plan, it is important that the objectives pursued be clearly spelled out. They may be either:

- qualitative (improving educational quality or enhancing the equity, effectiveness or efficiency of rural education); or
- quantitative (an 80 per cent primary school enrolment rate, a repetition rate of 5 per cent, achieving a specific pupil/teacher ratio, etc.).

Defining goals is not always easy, as many educational policies and plans do not state them explicitly. In such cases, it is necessary to extract them from official education policy statements and instruments, and then to have the reformulated goals approved by the officials responsible for these policies or plans.

Objectives related to the reduction of urban/rural disparities are appearing with increasing frequency in education policies, although they are not yet very widespread. Based on countries' official documents, such objectives, which may be either quantitative or qualitative, may be divided into two broad categories: a) those which merely reproduce the national objectives (access, quality, effectiveness) while giving priority to rural areas; and b) those which attempt to pinpoint issues specific to rural areas.

National EFA action plans[3] contain some goals in the first category:

- *Vietnam*: to achieve universal enrolment in lower secondary education in urban areas and the 30 largest provinces. To expand enrolment in rural areas.
- *Burkina Faso*: to raise the enrolment rate to 100 per cent by 2015, accepting a repetition rate of 10 per cent, with a particular effort in favour of girls and the most disadvantaged rural areas.
- *Egypt*: to gradually step up implementation of free public pre-school education and give priority to rural and poor urban areas.
- *Egypt*: to develop community schools and small schools to contribute directly to the elimination of ... the urban/rural disparity, as these schools are to be established in poor areas.

3. See UNESCO's web page on EFA action plans: www.unesco.org/education/efa/db/index_national_plans.shtml

- *Moldova*: to provide social and occupational protection for education system personnel, particularly those working in rural areas.
- *Lithuania*[4]: to ensure the quality of education, *inter alia* by addressing problems such as the disparities between urban and rural schools.

Other examples of goals include those set forth by the Dakar Forum in 2000 concerning Education for All (EFA). This conference was organized by five major international organizations – the World Bank, the United Nations Population Fund (UNFPA), the United Nations Development Programme (UNDP), UNESCO and the United Nations Children's Fund (UNICEF) – to set broad objectives for the development of basic education.

The six goals of the Dakar Framework for Action (2000)

1) "Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children;

2) ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to, and complete, free and compulsory primary education of good quality;

3) ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes;

4) achieving a 50 per cent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults;

5) eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality;

6) improving all aspects of the quality of education and ensuring excellence of all so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills."

(*World Education Forum*, 2000: 8)

The Dakar Framework focuses on certain aspects of education (such as the elimination of gender disparities at the primary level and access to the secondary level, as well as in non-formal education) that entail strategies whose implementation presents varying degrees of difficulty depending on the country. In particular, implementation is more difficult in rural areas, where the situation is less favourable in terms of educational supply and demand and the socio-economic environment. These strategies require the development of new indicators to monitor and assess the progress achieved, particularly in the case of the rural population, for which better evaluation methods, research and means of communicating information on rural education have yet to be developed.

Very few official education policies specifically target rural people. By way of example, we will consider below the strategic goals set forth in the document *A medium-term strategy for education for rural people in Kosovo* (Ministries of Education, Agriculture, Forestry and Rural Development, Science and Technology, Kosovo, FAO and UNMIK, 2004), along with goals extracted from ministerial proposals, EFA plans or other policy statements from a number of countries (second category of goals defined above).

The following strategic goals are proposed in the 'National Education Plan for Rural People in Kosovo', which purports to be an evaluation of rural education intended for use in decision-making and strategic planning:[5]

"**Goal 1.** To improve school-community cooperation and increase community responsibility for education in rural areas (in order to develop an active partnership in school management).

Goal 2. To improve participation and retention of rural children in basic education and develop opportunities for their enrolment into post-compulsory education.

4. Information drawn from the OECD web site on 3 November 2004.

5. Document prepared by the Ministry of Education and Agriculture, with the technical support of FAO. The Kosovo government is a member of the FAO-UNESCO initiative in favour of Education for Rural People.

Goal 3. To provide education adapted to the learning needs of children in rural areas.

Goal 4. To increase participation of rural people in relevant non-formal education and training programmes (adult education), especially linked to income generation.

Goal 5. To improve the physical and material resources of rural schools and ensure at least a minimum level of resources necessary for the teaching process.

Goal 6. To establish a reliable and accessible education information system (not only related to rural schools).

Goal 7. To develop the management capacity and organizational structure of rural schools.

Goal 8. To develop the human resources of education in rural areas by improving the recruitment, training and retention of teachers in rural schools."

In the case of France, education officials propose to "revitalise [rural education] via a policy of encouraging projects involving specialisation and partnerships with other schools and with the various components of the rural environment (for areas with very scattered populations rather than for all rural areas, as the latter do not systematically present difficulties for education policy)" (Lebosse, General Education Inspectorate and Ministry of Education, France, 1998).

Ethiopia has developed fairly specific objectives concerning rural people. The Ministry of Education lists the following goals, among others:

- "Village schools with multi-grade teaching shall be established to improve access to education for children, especially girls, who are unable to participate in primary education due to long distance to schools.
- The introduction of school calendar and daily schedule to enable working children to attend schools during agricultural activities will be highly encouraged. [...]
- [The] school feeding program shall continue and be expanded in areas where there is serious shortage of food and [...] the feeding program will actually serve as incentive to go to school.
- Special arrangements shall be made for children in the pastoralist areas. Holistic and sector-wide integrated methodologies would be applied in the pastoralist areas which include sensitization of the population, curriculum revision, training of teachers, provision of textbooks, establishment of alternative non-formal schools, mobile learning centers, boarding schools, construction of hostels and introducing and expanding school feeding programs. [...]
- School-community and parent-teacher relationships will be established and strengthened.
- Teacher residences will be constructed in the rural areas in order to create a better working environment.
- School clusters will be established and strengthened so that the school-based training system shall become a means for continuous professional development of teachers." (Ministry of Education, Ethiopia, 2002).

Brazil plans to extend the public of (radio) distance learning courses for young people and adults, particularly in primary and secondary education, paying special attention to rural dwellers. Peru, with a view to ensuring equal access, wishes to promote opportunities to obtain an intercultural and bilingual education of good quality, with priority to girls from rural areas.

Other goals specific to rural areas and their inhabitants have been identified (in some cases, they are also proposed for marginalized urban areas), covering:

- concerns about adaptation to the specific environment, particularly poverty;
- issues relating to different forms of provision, such as work/study or 'sandwich' training;
- appropriate delivery of a variety of services to rural dwellers, as encouragement to enrol children and keep them in school (health, nutrition, meals at school, transport for pupils living far from school, etc.);
- co-ordination of activities between these services and social institutions;
- improvement of the working conditions of rural teachers to attract and retain good teachers;
- pre-school establishments; and

- illiteracy, which is particularly high among the rural population.

These examples illustrate the diversity of the goals that countries or groups of countries may set with the aim of better meeting the needs of rural people. The appropriateness of each goal will depend on the local context.

Once the objectives have been set, efforts to achieve them must be monitored and the results evaluated. This is where indicators come in.

4. From objectives to indicators

Once a first list of objectives has been drawn up, each objective should be linked to a set of indicators. A given indicator may be used for more than one objective. Several examples are given below.

Senegal's overall goal of providing support for rural girls in difficulty is reflected in a more specific objective: improving girls' performance in science, mathematics and technology (SMT). The strategies adopted to achieve this are local recruitment of coaches and expansion of SMT reinforcement classes for girls; the indicator proposed by the plan is 'improvement of girls' performance in SMT'.

The objectives defined by Kosovo are matched to specific actions needed to achieve them, as well as expected outcomes. This makes it much easier to define the right indicators for monitoring and evaluation.

In point of fact, it is often difficult to move directly from broad objectives to working with indicators. Overall objectives need to be broken down into secondary objectives, and appropriate indicators defined for each secondary objective.

Consider, for example, strategic goal 8 from Kosovo: "To develop the human resources of education in rural areas by improving the recruitment, training and retention of teachers in rural schools".

The secondary objectives derived from this overall goal are as follows:

1. To update teachers' skills and improve teaching methods through in-service training programmes in rural schools;
2. To improve the training of new teachers (provided by Faculty of Education) who will work in rural areas;
3. To improve the working conditions and terms of employment of teaching staff in rural schools;
4. To introduce a system for teacher assessment and evaluation (including guidance and support) in rural schools.

Kosovo is deeply concerned with the development of human resources in rural areas and, more specifically, faces the problem of recruitment, retention and training of teachers in the rural environment. The government must address the problems facing teachers, which include:

- lack of access to continuing education;
- limited career prospects;
- an inadequate evaluation system; and
- difficult working conditions (Ministries of Education, Agriculture, Forestry and Rural Development, Science and Technology, Kosovo, *et al.*, 2004).

The actions proposed to address these problems include:

- identification of the training needs of teachers in rural schools;
- definition of national standards for teacher training;
- establishment and equipment of regional training centres for in-service training;
- expansion of opportunities for distance training;
- encouragement of networking between teachers and between rural schools;
- increasing of incentives to attract qualified teachers to rural schools; and
- enhancing salaries for teachers for increased performance or responsibility.

Table 1 presents a fictitious list of indicators that may be used to reflect these objectives.

Table 1. Fictitious example linking Kosovo's objectives to indicators concerning teaching staff

	Improving qualifications of rural teachers		Improving recruitment and retention of teachers in rural areas		
Specific objectives	**Initial training**	**In-service training**	**Working conditions**	**Terms of employment**	**Integration environment**
% of qualified teachers	X	X			
% of teachers using an active teaching method (inspection reports)	X	X			
Avg. distance or % of teachers less than x km from an in-service training centre		X	X		
% of teachers having received in-service training during year (in centre or distance learning)		X	X		
Avg. number of days of in-service training or person-days of training		X	X		
If new programme for new teachers: % of teachers affected by new training programme	X				
% of teachers participating in a teacher network		X	X		
% of networked schools		X	X		
% of teachers who know at least half the parents of their pupils		X	X		X
% of teachers who live in the community		X	X		X
% of teachers with staff housing				X	
% of teachers with ICT training		X	X		
% of teachers not inspected for *x* years		X	X	X	
% of teachers not promoted for *x* years				X	
Difference with respect to average salaries of other government employees in rural and in urban areas				X	
% of teachers who receive bonuses				X	
Teachers' absences			X		
Teachers' years of service in the school (average or % with less than 2 years of service)					X
% of qualified head teachers				X	

The document on rural education strategies in Kosovo sets forth many strategic goals, all of which are translated into practical strategies and hence into secondary objectives (see *Appendix*). As a result, the indicators needed to measure progress towards these objectives can be selected with greater precision.

In the United States of America, the objectives for monitoring and evaluating rural areas are not spelled out in such detail. The main concern is to help rural districts become more competitive and use federal assistance more efficiently. In 2001, the US Congress adopted a 'rural education achievement' programme (Beeson *et al.*, 2003) to improve performance in rural education. Debate over this programme provided the occasion for the first in-depth exploration of rural issues before the Congress. More specifically, a list of 19 indicators relating to the rural environment was drawn up (see *Table 2*). As can be seen, many of these indicators are concerned with financial matters: Eight of them relate to spending, teachers' salaries, children living in poverty, etc. This illustrates the importance of the policy stances and problems specific to each country in the selection of indicators.

A first group of seven indicators, constituting the 'importance gauge', measure the size, relative size and educational coverage of the rural population in each state. A second group of 13 indicators, making up the 'urgency gauge', measures the conditions faced by pupils, teachers and other education officials in rural schools and communities. One indicator – the percentage of the state population that is rural – is included in both groups. All these indicators are assigned the same weighting for calculation of the average profile. States are ranked in order of importance or urgency on a scale from 1 to 50 (with '1' being the most urgent or important). Some methodological comments on these proposals appear in the section on analysis of indicators in *Chapter 4*.

To evaluate and monitor the goals laid down at Jomtien, the five organizations that hosted the conference defined 18 indicators. It is regrettable, however, that 1) they did not do so until after the 1996 Amman conference, which was supposed to conduct a mid-term review, but lacking reliable indicators was unable to evaluate anything; and 2) they did not emphasize monitoring of progress towards EFA in rural areas, despite the fact that most out-of-school children and illiterate adults are rural dwellers. It would be preferable to disaggregate these indicators by type of environment (urban or rural).

Table 2. Indicators for monitoring rural education in the United States of America

7 'importance gauge' indicators	13 'urgency gauge' indicators
% of state population that is rural	Average rural teacher's salary
Number of rural people	Ratio of rural to non-rural teacher's salary
% of public schools in rural areas	% of rural students eligible for free or reduced-price lunch
% of public school students enrolled in rural schools	Average rural student-to-teacher ratio
% of students enrolled in rural schools who are minorities	% of rural teachers using computers in class
% of all students attending small rural schools	% of rural expenditures on school administration costs, difference from median
% of rural children in poverty	Income per capita in rural areas
	% of rural teachers reporting parental support
	% of rural expenditures on transportation
	% of rural expenditures on instruction and pupil support
	Average number of students per grade
	% of rural schools whose enrolments declined by at least 10%, 1996-2000
	% of state population that is rural

Source: Beeson *et al.*, 2003.

The six Jomtien objectives*

Objective 1

Expansion of early childhood care and developmental activities, including family and community interventions, especially for poor, disadvantaged and disabled children:

Indicator 1: Gross enrolment in early childhood development programmes, including public, private, and community programmes, expressed as a percentage of the official age-group concerned, if any, otherwise the age-group 3 to 5.

Indicator 2: Percentage of new entrants to primary grade 1 who have attended some form of organized early childhood development programme

Objective 2

Universal access to, and completion of, primary education (or whatever higher level of education is considered as "basic") by the year 2000:

Indicator 3: Apparent (gross) intake rate: new entrants in primary grade 1 as a percentage of the population of official entry age.

Indicator 4: Net intake rate: new entrants to primary grade 1 who are of the official primary school-entrance age as a percentage of the corresponding population.

Indicator 5: Gross enrolment ratio.

Indicator 6: Net enrolment ratio.

Indicator 7: Public current expenditure on primary education a) as a percentage of GNP; b) per pupil, as a percentage of GNP per capita.

Indicator 8: Public expenditure on primary education as a percentage of total public expenditure on education.

Indicator 9: Percentage of primary school teachers having the required academic qualifications.

Indicator 10: Percentage of primary school teachers who are certified (or trained) to teach according to national standards.

Indicator 11: Pupil/teacher ratio.

Indicator 12: The repetition rate per grade.

Indicator 13: The survival rate to grade 5 (percentage of a cohort of pupils who enrolled in the first grade of primary education in a given school-year and who eventually reach grade 5).

Indicator 14: The coefficient of efficiency (optimum number of pupil-years needed for a cohort to complete the primary cycle, expressed as a percentage of the number of pupil-years actually spent by the cohort).

Objective 3

Improvement in learning achievement such that an agreed percentage of an appropriate age cohort (e.g. 80 per cent of 14 year- olds) attains or surpasses a defined level of necessary learning achievement:

Indicator 15: Percentage of pupils having reached at least grade 4 of primary schooling who master a set of nationally defined basic learning competencies.

Objective 4

Reduction of the adult illiteracy rate (the appropriate age group to be determined in each country) to, say, half its 1990 level by the year 2000, with sufficient emphasis on female literacy to significantly reduce the current disparity between male and female illiteracy rates:

Indicator 16: Literacy rate of 15-24 year olds.

Indicator 17: Adult literacy rate, is the percentage of the population aged 15+ that is literate.

Indicator 18: Literacy Gender Parity Index.

We can note that no indicator was defined to follow objectives 5 and 6 of the Jomtien Framework.

Objective 5

Expansion of provisions of basic education and training in other essential skills required by youth and adults, with programme effectiveness assessed in terms of behavioural changes and impacts on health, employment and productivity.

Objective 6

Increased acquisition by individuals and families of the knowledge, skills and values required for better living and sound and sustainable development, made available through all education channels including the mass media, other forms of modern and traditional communication, and social action, with effectiveness assessed in terms of behavioural change.

* *Source* : *World Conference on Education for All*, 1990: §8.

Although the complexity of the task must be acknowledged, it can only be regretted that, as a result of this information gap, the actions taken to achieve goals 5 and 6 of Jomtien during the 1990s could not be evaluated.

These indicators were used to draw up the statistical review for the Dakar Forum. On the basis of the experience drawn from this review and the new goals set at Dakar, adjustments now need to be made to the list of 18 indicators.

These new indicators should track the reduction in gender, urban/rural, ethnic group or other disparities as regards access to primary education, and verify that all children who enter school complete primary education. This means that a rate of access to the last grade of primary must be defined to serve as a gauge for this objective. This rate should be based on universal access to the first grade of primary education (i.e. the access rate should be 100 per cent) and the elimination of all drop-outs at the primary level (the survival rate should be 100 per cent up to and including the final grade).

Access to secondary education and to continuing education programmes should also be measured to study the equity of the system. Finally, it is necessary to measure pupils' reading, writing and arithmetic skills and to specify and assess essential life skills. This analysis must allow for an urban/rural breakdown.

To achieve this, information systems must be upgraded, not only where the new objectives are concerned but also in the areas where the statistical review conducted in 2000 (Lievesley *et al.*, 2000) showed serious shortcomings, namely education financing and population statistics.

To evaluate and monitor rural education systems within the framework of these goals, many other indicators are needed. Issues of access, equity and quality take a somewhat different form in rural areas, making it necessary to use indicators specific to the rural context.

Improvement in access and quality, for example, may be observed through specific items (*Table 3*):

Table 3. Examples of issues more specific to the rural context and corresponding indicators

Item	Possible indicators
Access	
School calendar	% of schools with an appropriate school calendar
Scheduling	% of schools with appropriate scheduling
Irregular first intakes (every two, three or more years)	% of schools that do not recruit pupils each year
Distance between home and school	Average distance travelled by children % of children taking more than an hour to travel to school
Availability of school canteen, boarding school	Children receiving school meals as % of all children requesting them
Quality	
Multigrade classes	% of single-teacher schools % of teachers trained in multigrade instruction
Teachers	See *Table 1* on the qualifications and motivation of teachers in Kosovo
Community participation	% of teachers knowing at least half of the parents of their pupils % of parents participating in various school activities at a given time of the year
Infrastructure and learning materials	% of textbooks received on the scheduled date % of classrooms built of local materials

It is very important to remember that the indicator must be selected according to the context of the country and the way in which schools operate. There is no 'standard' list of indicators. Consider, for example, the question of how to measure teachers' working conditions.

In China, measures have been taken to pay teachers better than other government employees in rural areas, and to establish interschool networks, via the Internet at the secondary level and via satellite digital TV for primary schools. Possible indicators are: the percentage of rural teachers paid less well than other rural government employees; and the percentage of teachers participating in the network.

In Lao PDR, a system of school networks (clusters) has been in place in rural areas since 1992 in order to facilitate sharing of resources and offer better ground-level support to teachers. Pedagogical advisors, selected from among the best secondary-level teachers, must visit each school in their clusters at least once a year. The problem is that teachers find it difficult to attend the meetings organized by the pedagogical advisor. Possible indicators are: the percentage of advisors having visited each school in their clusters at least once during the year, and the percentage of teachers not having attended any of the advisor's meetings.

Similarly, the above-mentioned example of recruitment and retention of rural teachers in Kosovo featured indicators on training and specific working conditions. For Mongolia, a different indicator would be needed owing to the implementation of the following measure: If newly certified teachers work for two years in rural district schools (*soums*) or for five years in provincial schools (*aimag*), the capital and interest of the state loans contracted for their university education will be forgiven. The obvious indicator is the percentage of teachers having this type of contract with the state.

A less country-specific set of rural education issues concerns the development of feeding programmes, means of transport and 'multigrade' classes, the reason being that thinly populated, hard-to-reach areas are characteristic of most rural environments. These geographic and demographic features are often accompanied by poverty and food insecurity. The formulation of policy objectives in these fields and the development of appropriate indicators is thus of considerable importance from the standpoint of controlling and reducing the rural/urban divide. Here again, the choice of indicators will be dictated by the context.

In industrialized countries, for example, the main concern regarding multigrade instruction is to examine "the effectiveness of multigrade instruction in comparison with monograde instruction in a context of declining rural enrolments. The problem is often financial: multigrade instruction costs more per pupil; the question is whether or not to close the school. In developing countries, [...] population growth and increased demand for education lead to the establishment of a multigrade school located far from the nearest school, but these multigrade schools are short of resources and teachers do not want to work there. The question is no longer one of closing these schools [...], but of supporting multigrade instruction in order to provide an education", according to Brunswic and Valérien (2003). The indicators selected in the industrialized countries will therefore seek to measure the cost-effectiveness of multigrade instruction, whereas in developing countries the indicators will focus more on its coverage and quality.

Few developing countries have strategies concerning school transport, as such strategies are rather expensive. Indeed, they require a sufficient number of vehicles and maintenance costs are high owing to poor road infrastructure. Indicators can measure, among other things, the level of coverage of pupils needing such a service (a well-known school mapping indicator tracks the proportion of pupils who live more than a certain distance from school, or take more than a given time to travel to school), the cost for a given area, or the accessibility of roads. In France, school transport is a source of conflict between local authorities, central government officials and regional education authorities. In the Aveyron department, the various means of school transportation cover 40,000 km daily, and this figure is increasing as more rural primary and lower secondary schools are closed.

In the United States, transportation is provided to approximately one quarter of pupils enrolled in rural schools, or some 23 million children (Zars, 1999). This service employs 400,000 vehicles and costs over US$10 billion.

Given the complexity, scale and cost of school transportation, it is worthwhile devoting monitoring and evaluation indicators specifically to this topic. The information needed to manage

these strategies must include assessment of the prospects for change in the school network, the impact of such change on transport costs and the quality of the partnership among the various authorities concerned.

Policies promoting school meal programmes are justified by surveys such as those that "showed that in Africa, more than half of all children in school are stunted and anaemic" (UNESCO, 2004*b*). The Focusing Resources for Effective School Health (FRESH) initiative, another EFA flagship programme, supports school nutrition policies that "ensure that children are in good health and able to take full advantage of what is often their first and only opportunity to enter formal education" (UNESCO Division of International Coordination and Monitoring, 2004).

Indicators must be developed to measure the extent to which these programmes benefit poor and disadvantaged children, as well as to assess whether the environment is propitious for implementing these programmes.

Many examples of specific indicators could be given, depending on the rural development measures taken by each country and the context. The choice of relevant indicators should logically be made on this basis.

To obtain the information required, it is essential to improve information systems at both the national and local levels. This will be discussed in the next chapter.

5. Qualitative versus quantitative indicators

As we have seen, particularly in the example of Kosovo and in *Table 1*, indicators can perfectly well be developed for so-called qualitative phenomena. This is of course a more complicated and delicate task, but there is always a way of measuring quality once this notion has been properly defined. Educational quality can be measured if its precise meaning is explained. If the term refers to the quality of teachers, it will be necessary to consider teachers' level of qualification; if it refers to pupils' performance, then their cognitive skills should be measured; if it refers to the quality of teaching tools, an appropriate indicator might be how many textbooks are provided to students, etc. It is also possible to gauge the quality of the services provided to students: whether the school has a resource centre and/or whether staff are available to provide students with information, advice and guidance. All of these types of data can be aggregated in the form of a composite indicator that can be used to rank schools. In short, the debate over, or apparent opposition between, the terms 'qualitative' and 'quantitative', can be overcome through efforts to define and clarify their meaning, and such efforts are essential to proper understanding by the agents of the education system.

6. How to classify indicators

Classifications of indicators vary from one institution or publication to another. If the 'analysis of functioning' aspect is predominant, the breakdown used is into costs, activities and results, supplemented by a description of the social and cultural environment.

If one wants to classify the different entities, a breakdown of the following type can be used: schools; pupils; teachers; and costs.

Three publications, *L'état de l'école* and *Géographie de l'école* (Ministry of Education, France, 1991-2004) in France, and the OECD's *Education at a glance* (Ministry of Education, France, 1993-2004), use the first classification. The work done by the IIEP in Mali and Lesotho tends to apply the second.

Major themes can also be grouped: the level of knowledge of pupils; preparation for the labour market; preparation for social life; equity or the democratization of education. The effectiveness or efficiency of the education system in these four areas is then measured. However, these are themes for transversal analysis of indicators rather than a logical way of presenting the document.

Finally, presentation in the form Resources/Activities-Processes/Results is no doubt the one that most facilitates the reader's analysis. It is the closest to an explanatory model of education systems. The three components are actually linked by close and multi-directional relations. One can add the characteristics of the socio-demographic environment that interact with each of the components.

International organizations like UNESCO and the European Union choose or have chosen to classify indicators according to the objectives they serve, as we saw in UNESCO's classification of the 18 indicators used to monitor the Education for All goals.

In all cases, the secondary breakdowns used with each method are generally very similar: All methods break down indicators by educational level, accompanied by a cost analysis. A few predictive indicators could be developed (for example, to forecast the number of teachers required in the future), on the condition that reliable population data are available. This would be an additional advantage that indicator systems rarely offer.

The method selected for the ERP indicator system should, to the greatest extent possible, be the same as that used at national level, for ease of comparison.

7. Summary

Analysis of indicators always involves two stages:

The descriptive analysis: This consists of the presentation and description of distributions related to official standards or average objectives. Chronological analysis and analysis of disparities (by region, by gender, urban or rural zones, etc.) will supplement the comparison with standards. This analysis concerns first and foremost the school admission rates and enrolment rates at different levels. In this regard, it is very important to have net rates, for only they give an idea of the intensity of enrolment. Gross rates give merely an indication of the system's intake capacity.

Cost indicators are essential at national level. However, it is difficult to obtain a breakdown for rural areas alone, as certain data on educational costs are not disaggregated by geographical area. They may be replaced by non-financial indicators of resources (pupil/teacher ratio, textbooks per pupil, table-bench units, etc.). Indicators on expenditures can be calculated only on the basis of information collected from schools, such as the average contribution made by parents. When additional funds are allocated to rural schools, however, it is worthwhile to record and use this information.

The causal analysis: The first type of analysis outlined above is not sufficient. One must also seek to understand, explain and introduce causality into the relations that exist with the other variables, brought to light by the descriptive analysis. The selection of indicators will depend on the selected objectives. Three categories that must always be present are the following: quality; efficiency; and the analysis of costs both by pupil and by level.

(a) indicators on the quality of teaching could include: number of hours of courses; conditions offered to pupils (double shifts, number of pupils per classroom or per teacher, school cafeterias, boarding schools); qualifications of teachers; and availability of teaching materials;

(b) as regards the efficiency or results of education: Here the rates of access to different levels, repetition and drop-out rates as well as examination pass rates and results of pupil evaluations are used, if such information is available; and

(c) analysis of resources per pupil allows for verification of the match-up between resources and objectives.

Although these two types of analysis are fairly different, they can employ some of the same indicators. What generates causality is the way in which these indicators are linked and how some are used to shed light on others. This process leads to what amounts, in general, to the beginnings of a causal explanation.

Obviously, the list of indicators should not be definitive until after verification of the availability of the data needed to calculate the indicators. Thus there will always be a compromise between what is desired and what is actually possible. Policy-makers in Lesotho were interested in the use of the radio as a pedagogical tool. However, the available data did not allow for the calculation of this particular indicator. In some other cases, work on indicators may result in the addition of new questions to existing surveys, or even in the design of new surveys. For instance, Mali is trying to obtain more information about class textbooks available to pupils, while Lesotho asked for information

about visits by inspectors or the activities of school-related associations. Sample surveys will be held in Lesotho to obtain information about the use of pedagogical manuals.

The number of selected indicators should not exceed forty, for beyond that number the document is no longer easy to use. Most such publications adhere to this standard for the number of indicators, and this is welcomed by their users. As stated above, it is important to avoid transforming the document into just another statistical yearbook. One must stick to the concept of an indicator as defined at the beginning of this chapter.

By way of example, the list of indicators chosen for *Géographie de l'école* (Ministry of Education, France, 2003) is reproduced below.

Development of a list of indicators

The example of France: *Géographie de l'école*

The economic and social environment

1 Demographic trends
2 The economic and social context
3 Wealth of regions and households
4 Unemployment and insecure employment

Educational provision

5 Trends in enrolment
6 Provision at the primary level
7 Provision at the lower secondary level
8 Provision at the upper secondary level
9 Proportion represented by higher education
10 Entry flows to higher education
11 Private educational institutions
12 'Priority' education zones and networks
13 Conditions offered to pupils

Financial and human resources

14 Education spending by the MOE and local authorities
15 Proportion of grant holders
16 Conditions offered to university students
17 Class size at the primary level
18 Class size at the secondary level
19 Teaching staff
20 Administrative, technical, disciplinary and supervisory staff

Streams

21 Percentage of 16 to 24 year-olds enrolled in the education system
22 Lagging achievement in secondary education
23 Rate of access to level IV (upper secondary) education
24 Percentage continuing on to university
25 Enrolment of girls
26 Apprenticeship

Performance

27 Performance on evaluation exam on entry to first secondary year
28 Proportion of pupils reaching the level of the baccalauréat (general or technical) or vocational qualification
29 Examination pass rate
30 The situation of young people seven months after leaving the education system

Development of a list of indicators (continued)

The example of France: *Géographie de l'école*

Indicators in the 'Trends in enrolment' component

Change in number enrolled in primary education/secondary education/apprenticeship programmes between 1990 and 1999

Change in number enrolled in university between 1990 and 1999

Percentage of children enrolled at two years of age in 1999 and change between 1990 and 1999

Proportion of pupils in the fourth and fifth years of primary education studying a modern language in 1999-2000.

Breakdown of pupils between the general, technical and vocational streams, in both school-based learning and apprenticeship

Enrolment in higher education: % of total population in school

Percentage of secondary school completers enrolling in higher education in 2000-2001

Breakdown of students entering higher education by stream in 2000-2001

Proportion of pupils in the private sector

Private sector share at each level in 1999-2000 and change from 1990 to 2000

Proportion of pupils in priority education networks (REP) and zones (ZEP)

Primary school pupils (1999-2000)

Lower secondary pupils

Class size (public schools)

Primary, lower secondary (1999-2000)

Proportion of single-teacher primary schools in 1999-2000

Proportion of primary schools with eight classes or more in 1999-2000

Proportion of lower secondary schools with fewer than 250 pupils in 2000-2001

Proportion of lower secondary schools with more than 750 pupils in 2000-2001

Source: Ministry of Education, France, 2003.

CHAPTER 3
STRUCTURES TO BE ESTABLISHED

The development of an indicators system should be regarded as a project in its own right that should be managed with great care, using proven managerial resources. For this reason, as soon as a decision is taken to embark on such a project – i.e. to develop an indicators system to monitor and guide progress in ERP – a project leader should be appointed. This is the person who will lead the various structures established or mobilized for the purpose of monitoring the ERP goals. He or she will need extensive experience in statistics and proficiency in analyzing the rural education system as well as the ability to run a project of this kind from its inception right through to final publication. His or her appointment should be approved by all the structures involved.

The project must be integrated into existing structures, with the existing entities being organized in the best possible manner.

As such, the project leader should be attached to an entity that enjoys strong legitimacy in the field of rural education as the co-ordinator of other structures, in order to minimize disputes over respective roles.

The list of indicators must be constructed with the close involvement of the various actors responsible for the preparation and implementation of education policy. As indicated previously, such involvement will facilitate the specification of objectives to be monitored.

These choices must be the subject of discussions among senior officials of all the units involved. For this work on indicators, it is often very useful to constitute a monitoring or steering committee consisting of representatives of all these entities. This group can be made up of members from different ministries: education; agriculture; and sub-sectors such as higher education and vocational training, if these have a separate ministry. The aim is to report on the entire rural education system, not merely for the activities of the education ministry.

Once the steering committee has laid down the broad guidelines and specific goals and the project leader is appointed, a working group, consisting of a small number of experts and headed by the project leader, does the actual work. All aspects of the subject must be addressed.

In short, two bodies are needed: a steering committee for the project to monitor and follow up the ERP objectives; and a working group responsible for developing ERP indicators. This is quite typical for project management and is indispensable. Deadlines should be clearly defined, with strict timetables for the production of indicators by the working group and for policy validation by the steering committee.

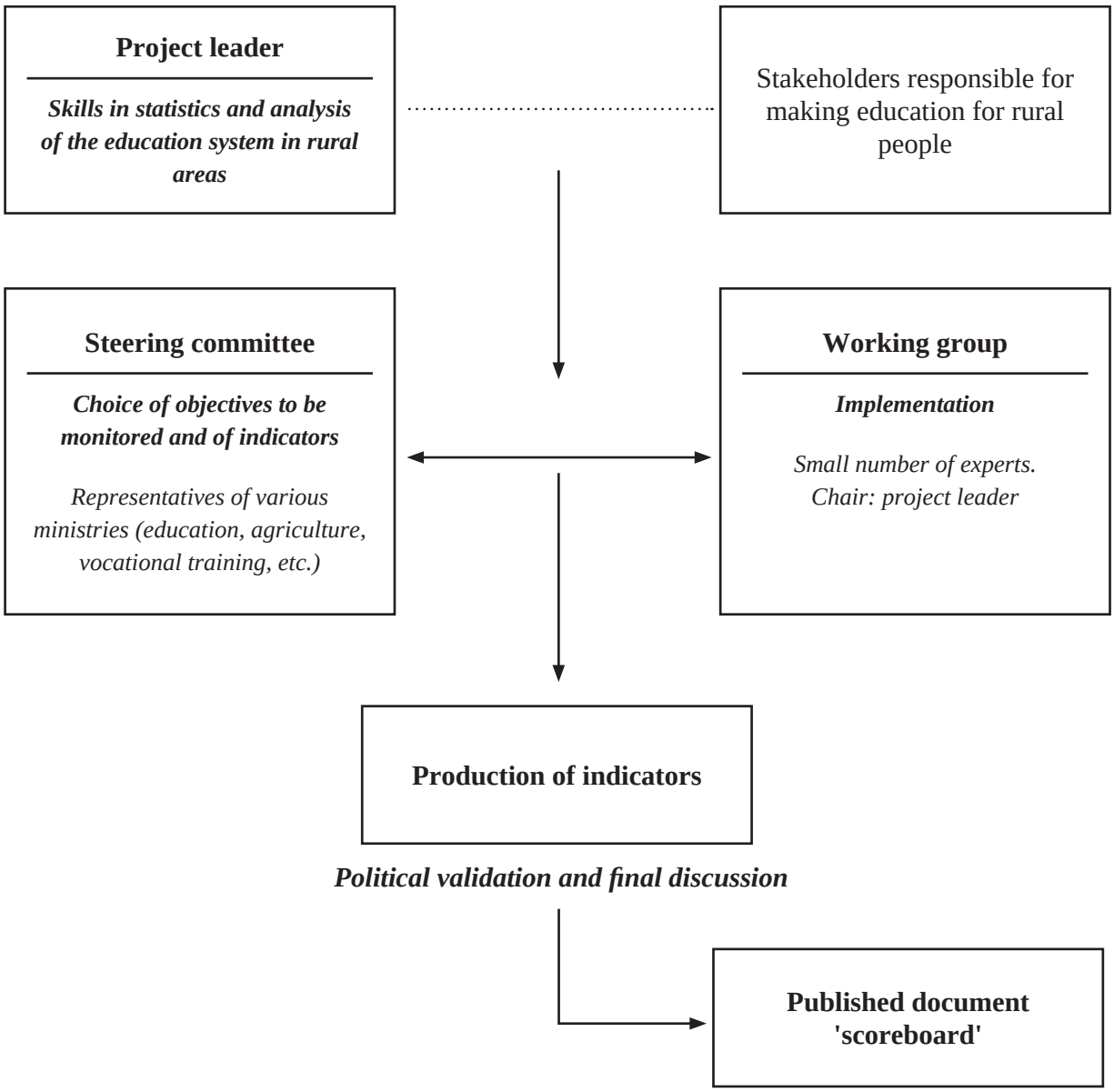
The total duration from the project's beginning to the publication of a first issue of the document must not exceed twelve months, as the implementation deadline must be short in order to involve and mobilize all the necessary energy. The organizational form must keep this in mind.

Two or three steering committee meetings should produce a final list of the indicators that will appear in the published document. The list approved by the steering committee cannot be called into question unless there are major, unforeseeable problems of data availability.

After validation of the list, the steering committee will again come into play at the time of the final discussion of the indicators document and prior to its publication. We will come back to this point. If the project is to be sustainable, the relevant departments of the ministry or ministries must be involved. After publication of the first document, preparation of the second should start immediately, as establishing a regular routine for this work is of paramount importance to the ultimate success of the project. If the operation stops after producing one document, its purpose is not achieved.

The ministerial departments normally responsible for education in rural areas must be fully involved in the project structure, since it is they who will produce the document. Subsequently, the project should rapidly be dissolved and its activity absorbed by these departments. Obviously, the successor to the project leader must be clearly identified and officially appointed. These points will be explained further below.

Figure 1. Structures to be established



Establishing an information system at local level and an information system on non-formal education is key.

1. The information system at the local level

During the inventory of available data sources on education for rural education (see *Chapter 4*), it soon becomes apparent that many types of information must be collected at the local level, more so than for the education system as a whole.

Analysis of statistics or indicators for managerial and decision-making purposes is often conducted only at national level. This work is essential, but too general to be used for school-by-school analysis. A detailed view of the functioning of individual schools is needed for proper management and efficient monitoring in rural areas; it is also essential in a context of decentralization.

To achieve the EFA goals, the Dakar Framework for Action calls for the development of: "responsive, participatory and accountable systems of educational governance and management: The experience of the past decade has underscored the need for better governance of education systems in terms of efficiency, accountability, transparency and flexibility so that they can respond more effectively to the diverse and continuously changing needs of learners. Reform of educational management is urgently needed – to move from highly centralized, standardized and command-driven forms of management to more decentralized and participatory decision-making, implementation and monitoring at lower levels of accountability. These processes must be buttressed by a management information system that benefits from both new technologies and community participation to produce timely, relevant and accurate information" (World Education Forum, 2000: 18).

Such an information system is therefore highly useful. Where there is no such system, decision-makers must be convinced of the importance of building it. Otherwise, description and detailed analysis of the rural environment and population will be extremely difficult.

Another important task is to make local personnel aware of the value of this information-gathering work. Building an information system on education for rural people serves two main purposes, namely the management and monitoring of schools. This information system should facilitate the management and allocation of human and material resources in rural areas, as well as analysis of educational provision, the needs of schools and imbalances in resource use. It will also allow better monitoring of the functioning and quality of schools within the administrative unit concerned and help the school inspector and pedagogical advisors with their supervisory tasks. This second point is more of a challenge, in that it requires qualitative information on inputs, processes and outputs.

Building such a system will allow better use of information in terms of both:

- vertical communication, feeding into the national information system in order to ensure the overall coherence of the system; and especially
- horizontal communication, by fostering dialogue among the various local stakeholders – local representatives of the education ministry (including the inspector, school principal and teachers), local representatives of other ministries, the community and NGOs.

Another challenge is that of stimulating social demand for education or meeting the information requirements of the public: informing parents as well as encouraging them to participate and exchange ideas with the other partners. In some countries, social demand for schooling is not always present in a clear-cut way, while in others it is increasingly strong and has led to faster introduction of evaluations of student performance and school efficiency.

This database is an analytical tool, but also comes to serve, for the community, as an accountability tool. For example, France's system of indicators for the guidance of secondary schools (*Indicateurs de pilotage des établissements du secondaire*/IPES) has, in addition to its monitoring function, evolved into a tool for dialogue with the partners of the education system.

The information should be presented in a simple way that lends itself to an analysis suited to the educational level of local stakeholders. This will ensure regular use of the tool. Similarly, the data should be processed in such a way that the services of a specialist are not required to analyze and interpret overly sophisticated or technical information. This point is extremely important for local take-up of the tool and hence for its sustainability.

In time, the database will allow historical analysis of information. The percentage of schools that do not recruit pupils annually may prove to be a relevant indicator for a district, but would be incomplete if it cannot also be analyzed over time. It will therefore be necessary to rationalize the archiving, analysis and use of data from previous years.

Many administrators do not have the training needed to analyze and use data efficiently for managerial and decision-making purposes. This lack of training is even more acute in the case of other stakeholders. A strategy for training people in analyzing and using data is necessary at the local level to enable realistic planning, management and monitoring of the system.

Furthermore, the job mobility of education officials – owing to migration from rural to urban areas – makes it necessary to ensure that the database is used by at least two individuals in each regional or local education office in order to avoid cessation of this activity if one of them leaves.

An effective means of ensuring proper use of the database is to involve all potential users in the process of gathering information. A permanent interface must be created between the ordinary activities involved in school management and the information collected. In this way, the database becomes dynamic and serves as an automatic checking tool, which means that the information it contains is reliable.

The local level database should be designed so as to be accessible to all those involved in running a school. This approach offers three major advantages: It makes the management of the school more transparent, since everyone has access to the same type of information; it gives all those concerned a better understanding of the difficulties of school management in rural environments; and it makes the database – and this is a crucial point – a jointly used and accepted tool for analysis, planning, setting of objectives and performance assessment. In this way, all involved feel a sense of horizontal accountability, rather than simply accountability to their superiors.

Analysis and communication will be based on two specific tools:

- the database, a flexible instrument that will have many information requests in boilerplate form, thanks to the earlier stage in which information requirements were identified; and
- the published document, a set of indicators and statistics offering local officials a quick summary of the general profile of each school and its environment.

These two tools will not be functional until the various local stakeholders have indicated which types of data they wish to have and until they have considered, in conjunction with the officials in charge of the administrative unit and the database, how these data should be collected and presented. In this way, local stakeholders, working with the education officials, will be able to make the database and indicators document more relevant to their needs. This will be possible only if local stakeholders regard these tools as their own, take them over and use them regularly. The database and document will become operational only under these conditions.

For this to happen, it will be necessary at the same time to work on improving the survey forms and questionnaires. Some data will be missing from the database or may prove incorrect. In this case, it will not be possible to obtain the expected results as, in some cases, the documents that might have provided this information were not completed, or were completed incorrectly. In order to take full advantage of the tool now available to them, those who produce the information will have to improve their collection methods. Failure to prepare and sensitize the parties involved will certainly slow down the early stages of the process.

In this connection, we may refer to one of the IIEP's country capacity-building activities. The Institute has developed a programme on the design and use of an information system that meets this need for management and monitoring

at the local level. This information system should provide a more detailed picture of how the system works, school by school, and of school conditions, and hence should help bring improvements in quality. The availability of information is a basic prerequisite for the participation of social stakeholders in the development of education systems. The project is conducted with a team from the Ministry of Education, representing the central and provincial levels as well as the district selected for the pilot project. This arrangement contributes to the process of transferring skills to the national team.

2. The information system on non-formal education

Few countries have an information system on non-formal education. Yet this sector is of vital importance to the rural population, as in most cases it is non-formal education that covers important matters such as adult literacy; health and hygiene (including problems connected with HIV prevention); family planning; local development (such as income-generating activities); environmental protection; and the development of leisure activities. Where rural dwellers are concerned, all 'non-formal' activities can play a very important role in local development.

Creating such an information system involves a number of difficulties, the first of which relates to the large number of actors. Non-formal education is provided in a great variety of locations both within a given country and across countries. These locations may be training centres or rooms or places used by NGOs and community groups.

Another difficulty is the diversity of the institutions providing NFE: not only ministries and public agencies, but also not-for-profit associations. Yet another is the range of ways in which NFE is organized (training sessions range from one-day workshops to multiyear programmes) and delivered (correspondence courses, radio, television, Internet, etc.). Instructors in this branch of the education system rarely belong to the staff categories found in formal education. This complexity means that there are a great many options regarding the way in which data are entered and processed.

There is no single 'legitimate' body for data collection; rather, there are several such bodies. This makes it necessary to adapt to each country's organizations and institutions and ensure proper co-ordination among them. Many of them are wholly unaccustomed to generating statistical information and unqualified to process it.

To resolve these difficulties, the organizational structure best suited to the specific environment of each country must be selected. In particular, an effort to ensure coherence with the formal system is needed, as some non-formal activities closely resemble those of formal education. For example, certain non-formal initiatives for young people with little or no schooling show little difference in terms of content from what is taught in formal education.

The basic goals laid down in Dakar in 2000 mention the need for progress in adult literacy (goal 4), but fail to lay the emphasis on the rural population, where the greatest number of illiterate people are to be found. It is therefore important to have accurate measurements of what is happening in this field as regards the number of learners, how long the courses last and the outcomes of these initiatives in terms of knowledge and knowhow. Measuring effectiveness is very important to the credibility and sustainability of the initiatives. Once again, however, these are relatively unexplored topics for which few analytical tools are available. It is always very difficult to gauge the impact of literacy programmes, which is, incidentally, one of the reasons why it is difficult to raise funding for such activities.

All of the above points show how difficult and important it is to include the non-formal sector in the information system. UNESCO has initiated experiments in this area that should be pursued. For further information on this issue, see the UNESCO manual on monitoring and information systems for non-formal education (UNESCO Division of Basic Education, Section of Literacy and Non-Formal Education, UNESCO Institute for Statistics, 2004).

In conclusion, the database and indicators on education for rural people should include information on the non-formal sector and be underpinned by functional information systems at the local level.

CHAPTER 4
PREPARATION OF THE SCOREBOARD

Once the indicators have been identified and the necessary structures established, the preparation of the scoreboard itself can begin. Production of a finished document involves a number of steps. The first consists in identifying the available sources and data. The next step, calculation of indicators, is not as easy as it may appear at first glance, as a variety of calculation methods may be used. It is therefore very important to have precise definitions of the indicators, and in particular to have a glossary of the terms used. These issues are addressed in detail below, as well as the subsequent steps: verification of the consistency of the results; analysis of indicators; and the layout of the computerized document.

1. Inventory of available sources and data: types of data; annual surveys; selective data; and management data

All useable sources should be identified and used.

Most of these data are derived from annual censuses of school enrolments and annual surveys of staffing, examination results and infrastructure components. In general, the data allow identification of schools that belong to or are linked to the rural environment. Some data sources are internal to the Ministry of Education, but not necessarily to its statistics department. For example, while data about pupils and schools are generally available from the statistics department, the source for information about the various categories of staff, their status, their housing conditions, and their initial and in-service training is often the department that manages human resources.

Demographic data, which are usually the responsibility of the national statistics office, are highly important, as it is essential to have data broken down by age for all years. Estimates made for inter-census or post-census years (with respect to the last census) must be of good quality, for if they are not enrolment rates may be highly distorted. Similarly, it is important to have regional data in order to capture regional disparities in enrolment. Finally, projections are necessary to enable forecasting of school enrolments and hence teacher recruitment needs. Several forecasting indicators can then be developed.

Partial data covering a few regions or a sample of pupils may also be used. For example, inspectors' reports furnish considerable information on learning materials and pedagogical support provided to teachers, and may be used to illustrate an analysis. Selective data, collected for a specific study or project or even through public opinion surveys, can be used in the same manner. As was pointed out above, what matters is to have a well-constructed sample that is representative of the level considered. In some cases, sampling studies are the only choice available as comprehensive surveys would be too costly. The resulting level of precision is perfectly acceptable for analysis of many problems encountered in the education system.

A list of data sources concerning the local level in Côte d'Ivoire appears in *Table 4*.

During the development of the indicators, gaps may appear in either the data collected or in the frequency and scope of data collection. It soon becomes apparent that a permanent information system must be established for calculating indicators.

Chapter 3 strongly emphasized the need for information systems at the local level and for non-formal education. Without these, it is impossible to calculate many indicators at the relevant geographical level (due to lack of local information) or concerning non-formal education, a crucial form of provision for the rural population.

2. Calculation

A specific formula must be given for calculating each indicator. This makes it possible to draw up a detailed list of the basic information needed to calculate the indicators. For example, to calculate the rural net enrolment rate for the ages corresponding, in principle, to primary education (usually 6-11 years or 7-12 years), one needs to know how many rural children in these age groups are enrolled and the total rural population in this age group. Another reason for making the formula explicit is that, in many cases, the same indicator (enrolment rate, access rate, etc.) can be calculated in different ways by different people. By specifying the formula, one avoids or at least limits ambiguity. At this stage, it is also a good idea to specify how the indicators should be broken down: by age, sex, other categories, etc.

It is immediately apparent that the overall enrolment and population figures will not suffice. Specific data on rural enrolment and population are needed. This explains the importance of clearly defining what is meant by the rural environment and the rural population and of collecting data on the basis of this definition.

As an illustration, the examples in *Box 1* indicate the information needed to specify the formula for calculating an indicator.

Box 1. Information needed to specify the formula for calculating an indicator

Indicator: rural gross admission rate **Purpose:** to measure the increase in rural schools' admission capacity **Level:** national and regional **Breakdown:** by sex **Formula:** actual number of rural children entering a level / rural population at the theoretical age for entry to this level (e.g. 7 years of age for primary education) **Source:** annual enrolment census, demographic data **Validity:** to be specified **Frequency:** annual	**Indicator:** rural repetition rate **Purpose:** to track the repetition of classes in rural areas **Level:** national and regional **Breakdown:** by sex **Formula:** number of repeaters in year n+1 in grade 'a' in rural areas / number enrolled in year n in grade 'a' in rural areas **Source:** annual enrolment census **Validity:** to be specified **Frequency:** annual
Indicator: rural gross enrolment rate **Purpose:** to measure the increase in rural schools' enrolment **Level:** national and regional **Breakdown:** by sex **Formula:** total rural enrolment in a given level / rural population of the theoretical age for entry to this level (e.g. 7-12 years for primary education) **Source:** annual enrolment census, demographic data **Validity:** to be specified **Frequency:** annual	**Indicator:** percentage of rural schools that do not recruit pupils annually **Purpose:** to measure the intensity of enrolment in rural areas **Level:** national and regional **Breakdown:** by sex **Formula:** rural schools recruiting pupils every two, three or more years / total schools in rural areas **Source:** annual enrolment census **Validity:** to be specified **Frequency:** annual
Indicator: rural net enrolment rate **Purpose:** to measure the intensity of enrolment in rural areas **Level:** national and regional **Breakdown:** by sex **Formula:** number of enrolled rural children in a given age group / rural population in this age group **Source:** annual enrolment census, demographic data **Validity:** to be specified **Frequency:** annual	**Indicator:** achievement of rural pupils **Purpose:** to measure how much rural pupils actually know **Level:** national **Breakdown:** by level **Formula:** knowledge tests **Source:** national evaluation exam **Validity:** to be specified **Frequency:** every *x* years, to be specified

Table 4. Partial list of indicators at local level by source: a school inspectorate in Côte d'Ivoire

	School archives	Provincial education authority (reports from school inspectors, principals etc.)	Special survey	School census	'Postes déshérités'* survey
School environment index *(community with running water, electricity, health centre, market)*					X
% of pupils in multigrade classes				X	
Avg. distance to nearest primary school				X	
Existence of school calendar specific to the community			X		
Difficulty of access inspectorate/ school			X		
Existence of a cooperative				X	
Number of classrooms in permanent structure and in good condition				X	
Number of houses for teachers used		X			
Classroom conditions: well ventilated/stuffy, quiet/noisy, light/dark		X	X		
Principal's length of teacher service		X			
Number of inspections in school each year	X	X			
Number of seminars, refresher courses, pedagogical support days per year (or 2 years, etc.)		X			
Average length of teacher service		X			
Average length of service in current school		X			
Teacher absenteeism: average number of days absent per month	X				
Reason for absence of teachers	X				
Average home/school distance (km)			X		
Pupils' monthly attendance rate	X				
Participation in extracurricular activities			X		

Source: Developed as part of the joint project of IIEP and the Ministry of Education, Côte d'Ivoire, on the information system at local level.

* "Postes deshérités" was an exhaustive survey carried out in Côte d'Ivoire, which produced a diagnosis of the socio-economic level of the school commune.

It is important to ask the entities responsible for data collection to indicate how valid or reliable their data are. This allows the reader to form a more accurate opinion of the information provided.

It is also important to define the terms used, and hence a glossary must be included in the final publication. A few examples of glossary entries are given below. It should be pointed out, however, that glossaries may differ from one country to the next depending on the way in which the indicators are interpreted.

3. Example of a glossary

Rural population: most rural dwellers are farmers, livestock farmers, fishermen or people whose means of subsistence are closely tied to the soil and to coastal areas, and to production, processing, marketing and related services. The precise make-up of the rural population must be specified for each country.

Educational indicators: indices, ratios, growth rates and quantities calculated from educational statistics and, when required, demographic, economic or other data. Indicators should synthesize the available information to make it more accessible and easier to use for those who deal with quantitative data.

Basic education: the first nine years of schooling, comprising a six-year primary level and a three-year secondary level.

School: administrative unit where education is provided.

Private education: comprises denominational schools, non-denominational schools and elementary schools.

Medersa: an elementary school founded through private initiative as a successor to Koranic schools. The language of instruction is Arabic. French is introduced in the third year as a subject of study, with the same status as arithmetic, history, geography, etc.

Classroom: any building attached to a school and used to accommodate a class.

Number of pupils per class: the average number of pupils in a class.

Multigrade classes: classes containing children in two or more grades.

Double-shift teaching: accommodation of two different groups of pupils in the same classroom at different times on the same day.

Gross admission rate: all new entrants to a given educational level, regardless of their age, as a ratio of the total population of legal age to enter this level (7 years of age for the primary level, 13 years for secondary).

Pupil: a child enrolled in full-time education; the figures are taken from the attendance register.

Teacher: any person teaching full-time in a primary school, whether paid by the government or from private sources. The annual survey includes temporarily absent teachers, e.g. those on sick leave. Any teacher on leave for a period of more than six months should not be included.

4. Checking results for consistency

Having calculated various indicators, it is necessary to verify the consistency of the final results. After all, several sources of information will have been used, and every statistician knows the difficulties involved in such an approach. For example, it must be verified that the net enrolment rates do not exceed 100 per cent, that they are not inconsistent with employment rates, and that the education expenditure figures provided by the Ministry of Education are of the same order of magnitude as those provided by the Ministry of Finance or the national statistics office. This check is very important, as it ensures the validity of the overall effort. The necessary time must therefore be allocated to this step.

Some examples of consistency problems: If net enrolment rates are added to employment rates for the post-primary levels, we obtain rates above 100 per cent for several countries. Here, we have a problem of definition. It turns out that training in work/study programmes such as on-site traineeships is counted by both sides, as the young people concerned are in training, but also have an employment contract.

Net enrolment rates are also sometimes greater than 100 per cent when there is a lack of consistency between demographic data and school

data. It is less surprising that within a country net enrolment rates exceed 100 per cent in some regions, in particular in capital cities, as children from more remote regions, with fewer school facilities, enrol in more educationally developed regions. In Tanzania, for example, the net enrolment rate exceeds 100 per cent in one of the western districts because children from neighbouring districts are enrolled there. Unfortunately, this situation is very rare in rural areas, although children rejected by their local schools or with no school nearby may sometimes attend school in a neighbouring administrative unit.

If all the data cannot be harmonized, estimates may be used if accurate data covering several previous years are available as a basis for estimation. The other possible solution is to clearly identify the sources of the data and explain why there are discrepancies. We must not forget that this document is intended for non-statisticians, and hence that it is necessary to avoid jargon and clearly describe the concepts underlying the different types of data. It is important to show users that the statistics cannot be used to say whatever one wishes. This is the whole point of verifying the consistency of indicators. One must not lose sight of this goal, which can only be achieved through transparency. Absolute precision is not a *sine qua non* condition. It is possible to monitor change in the education system and identify crucial problems (which is the main purpose of an indicators document) even without infallible data.

5. Analysis of indicators

This stage is vital to the success of the project. The analysis must be accessible to all those concerned with rural education. Great care needs to be taken to present even complex information in simple terms, but without sacrificing precision.

Most of the documents cited in this guide follow the same layout: Each indicator or group of indicators occupies two facing pages, with a text portion supplemented by tables and figures. This layout offers the advantage of being clear and easily understood. Some publications depart from this model when the topic or objective analyzed is too complex to be covered in a single two-page spread. In this case, one must once again take a pragmatic approach and select the layout that is easiest to read.

The structure of the analysis is very important. The text begins with a general analysis of the indicator, and more particularly of its change over time, after which the most recent results are examined in greater detail. Next, one or more breakdowns of the indicator – for example, by sex and by region – are considered. The commentary should be written in measured and precise language that can easily be understood by a non-specialist.

An excess of data detracts from the text's readability. The analysis should not be overburdened with too many figures, especially if they already appear in a table or a graph.

The tables and graphics should be carefully chosen to provide maximal information with minimum data. Depending on the indicator, they may present a chronological series, a distribution of the indicator with respect to a given category, and if possible a breakdown by region. In the case of graphics, the following most common uses may be noted:

- line charts to present chronological series;
- bar charts to present the distribution of a given indicator by region or by sex; and
- cartographic representations to highlight regional diversities or disparities. Mapping is particularly appropriate for analyses of the rural environment, as the reader can easily see where the problems lie and better grasp the difficulties facing rural education, particularly those arising from the scattered nature of human settlements and the long distances that pupils must therefore travel to attend school.

A document of this kind cannot systematically present statistics and figures for all indicators, owing to lack of space. A selection must be made based on the precision required or on which indicators are easiest to understand.

For example, if an indicator such as the percentage of rural schools with a canteen displays small variance over time, it can be presented in a table. This is because a table will present the exact values, which would convey little to readers if presented in a figure, as they vary only slightly. In contrast, rates of access for girls in rural areas are

better viewed in a graph than in a table, particularly if they have changed substantially over time.

The guiding principle is flexibility and a constant search for the type of presentation that is easiest for the non-specialist to understand.

The next sections are concerned with the analysis and selection of indicators; the presentation and design of figures; the period analyzed by the document; the mapping; and finally the design of the scoreboard.

a) Analysis and selection of indicators

In some cases, the analysis may lead the project team to change its choice of indicator. Suppose, for instance, that one wishes to measure gender disparities in primary education in the rural areas of country *X*. The basic data are shown in *Table 5*.

Looking at the percentage of girls, one is tempted to conclude that the disparity has diminished. However, continuing the analysis, we realize that the gap between the enrolments of boys and girls, or between the enrolment rates of boys and girls, has increased. This leads to the conclusion that the disparity has increased. In order to demonstrate this, it is preferable to choose one of the two elements above rather than the percentage of girls. This table can be considered from yet another angle, by calculating the boy-girl ratio (or its inverse). This time, one notes a slight decline (from 2.25 in 1999/2000 to 2.06 in 2003/2004). In relative terms, then, the enrolment of girls has increased slightly more quickly than that of boys. The same basic data yield two indicators that give a different, apparently contradictory impression of the same reality. However, this contradiction is deceptive. The absolute gaps and relative increase are two aspects of the same problem. They complement rather than contradict one another, showing that there is sometimes more than one way of analyzing an observed phenomenon.

In any event, it is clear that the percentage of girls, taken on its own, is not a good indicator of change in gender disparity. The analysis can indeed lead to a re-definition of the indicator.

One must therefore be careful in choosing how to calculate an indicator.

Table 5. Choice of the indicator describing the evolution of gender disparities

School year	Total rural enrolment	No. of boys enrolled in rural areas	No. of girls enrolled in rural areas	% of girls	Gross enrolment rate for boys in rural areas	Gross enrolment rate for girls in rural areas
1999/2000	301,218	208,634	92,584	30.7	39.3	16.7
2000/01	346,807	237,456	109,351	31.5	44.5	19.7
2001/02	359,406	246,156	113,250	31.5	44.6	19.7
2002/03	421,869	288,092	133,777	31.7	51.1	22.8
2003/04	471,792	317,654	154,138	32.7	55.2	25.7

The importance of clearly analyzing questions in this respect, and of knowing what question is asked when an indicator is being analyzed, cannot be over-emphasized. For instance, what question is asked when the level of enrolment is being analyzed? Some examples are given in *Table 6*.

Table 6. Relevance of the choice of indicator: examples

Question	**Indicator**
Can your education system accommodate all school-age children in the rural population?	Gross enrolment rate in rural areas
How many children of official school age are enrolled in rural areas?	Net enrolment rate in rural areas
How many children start school in rural areas?	Very detailed data are needed, but are not always available: number enrolled and repeaters by age in first year of school. If these data are not available, the percentage of children born in a given year who start school can be calculated. Proxy: admissions rate
How long do they stay?	Cohort analysis, life expectancy
Do all rural children complete primary education?	Rate of access to the last primary year in rural areas, which may be calculated in at least two ways: • as the product of the real rural admission rate and the rate of 'survival' to the end of primary school in rural areas; and/or • as the total number of rural pupils in one generation in the last primary year divided by the total population of that generation (one generation = all children born in a given year in rural areas).
What is the capacity of school canteens? How many children are covered by canteens?	Children receiving meals at school as a percentage of the total number of pupils in rural areas.
What proportion of rural children needing a feeding programme are covered? Or how many rural children meeting the need criteria for feeding programmes are actually covered?	Children receiving meals at school as a percentage of the total number of children deemed to meet the criteria.

An important point in analyzing an indicator is whether the significance of its value can be judged. Is a given value of the indicator satisfactory? Does it indicate a need for corrective action? A pre-determined reference point will make it possible to assess this.

As an example, consider the indicators used in the US scoreboard. How should the value of the indicator 'percentage of rural expenditures on transportation' be gauged? Whereas the indicator 'percentage of rural teachers reporting parental support' can be judged in relation to an ideal objective of 100 per cent, the indicator of expenditure on transportation is not easy to interpret, as no specific quantitative target is defined for this indicator.

Ranking these values will of course provide an initial indication of their significance, but in some contexts this reference point would not be sufficient. The value for the country as a whole is a useful additional datum for assessing the specific situation of the area concerned.

The figures included in the US scoreboard (see end of this chapter) can be used for this analysis with respect to the national value for six of the indicators selected.

The same type of problem arises with the indicator 'income per capita in rural areas'. How should one judge the situation of Alabama, which ranks tenth? Is Alabama's income per capita very different from that of the nine higher-ranking states? Is it *much* lower than that of the 40 states ranked below Alabama (see indicators for Alabama *page 68*)?

The user should already be clearly identified when the indicator is selected, as this may affect the technical difficulty of the calculation chosen. The indicator should be easy for users to understand and interpret. In the case of Alabama, how will the indicator 'average number of pupils per grade' be used by decision-makers in the United States?

b) Layout of figures

The graphic presentation of an indicator is also important. This sub-section (*Figure 2*) presents various types of figures and suggests simple, clear ways of presenting information.

Depending on the choice of type of graph, or even its form, the perception of the ill-informed reader can be changed. For instance, by altering the width or the length of a graph, or by varying its scale, one can accentuate or weaken the perception of change or of disparity. Hence it is important to present the graph in a relevant way, so as to facilitate its visual analysis.

Figure 2.
Different types of possible representations

Figure 2.1 Regional breakdown of the 150 million children suffering from malnutrition

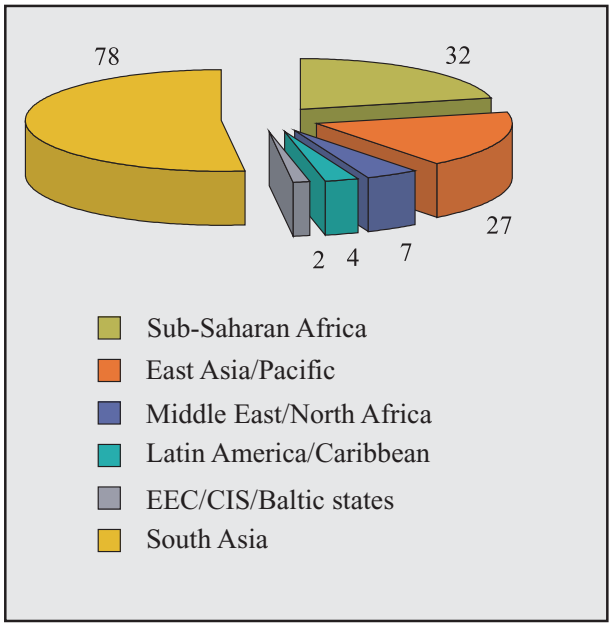
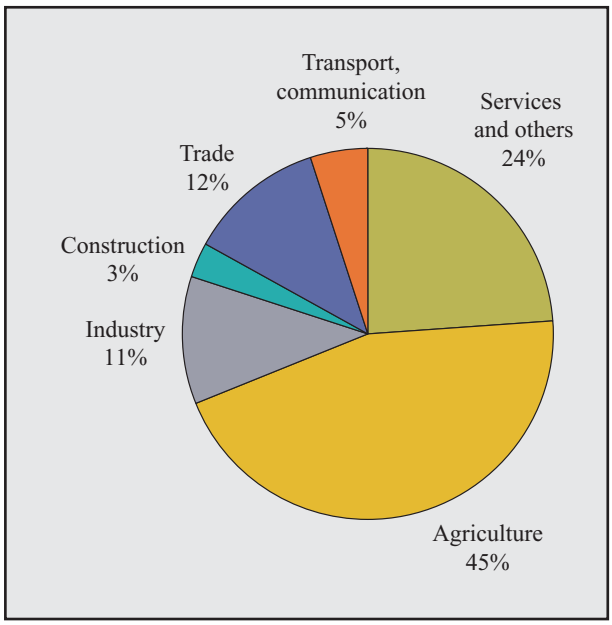
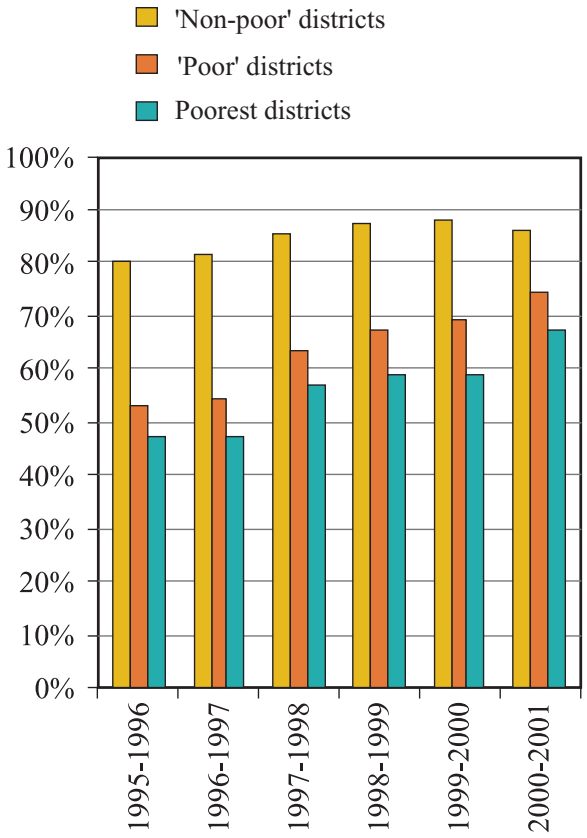
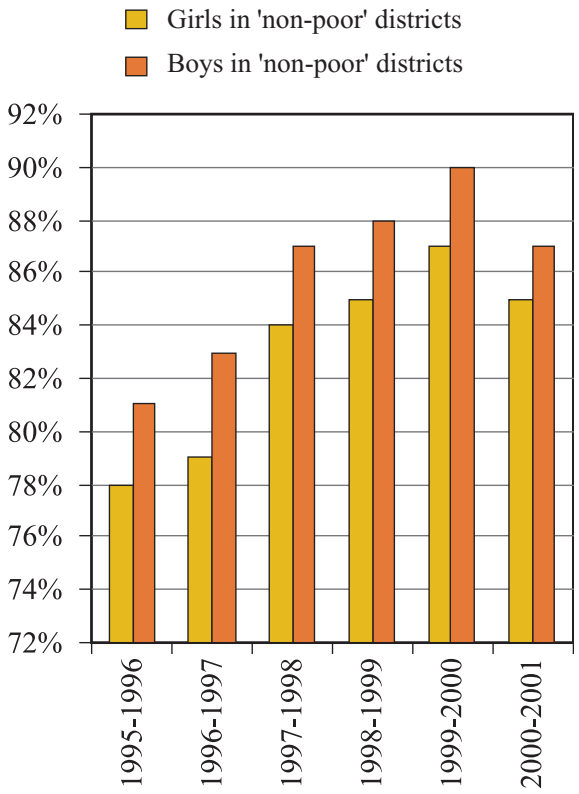


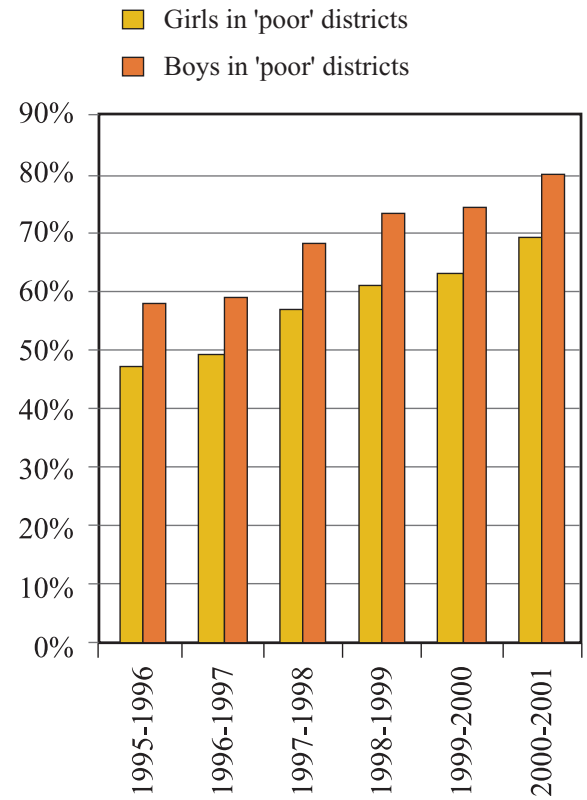
Figure 2.2 Employed working population in Mongolia, by major sector (%)



Figures 2.3 Lao PDR: net enrolment rates by district type and comparison of net enrolment rates for boys and girls according to the poverty level of the district







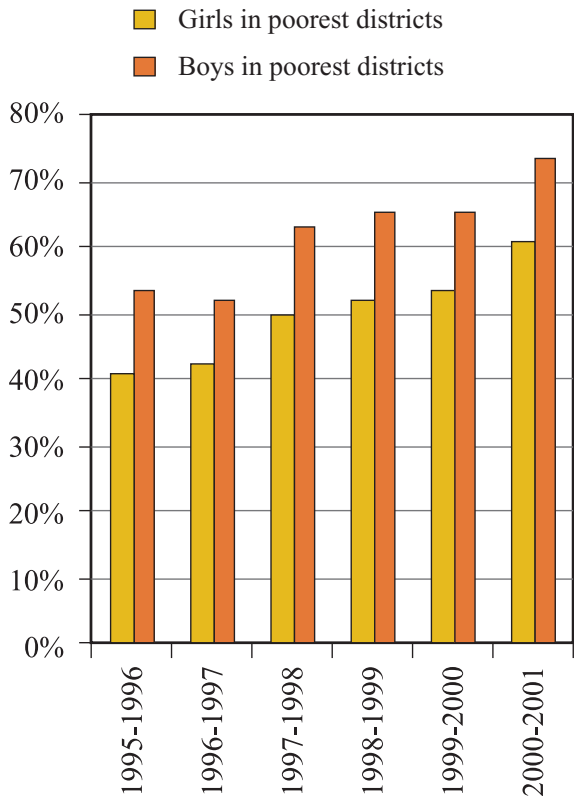


Figure 2.4 **Thailand: enrolment pyramid, academic year 1990**

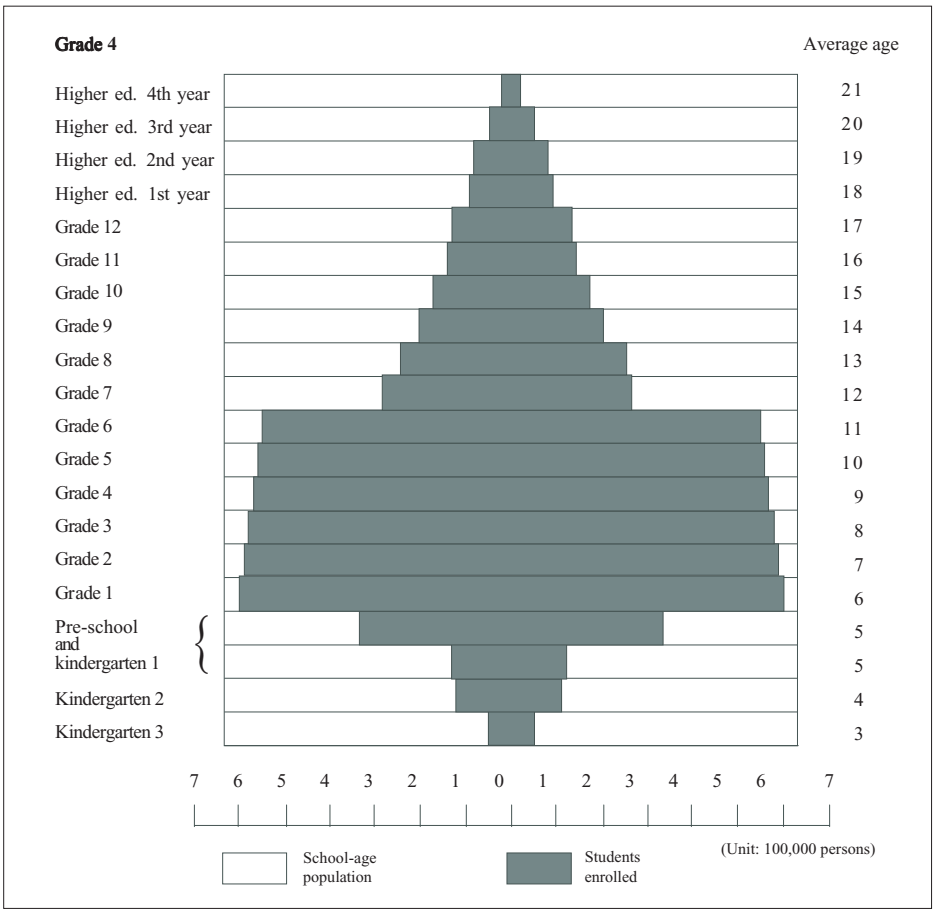
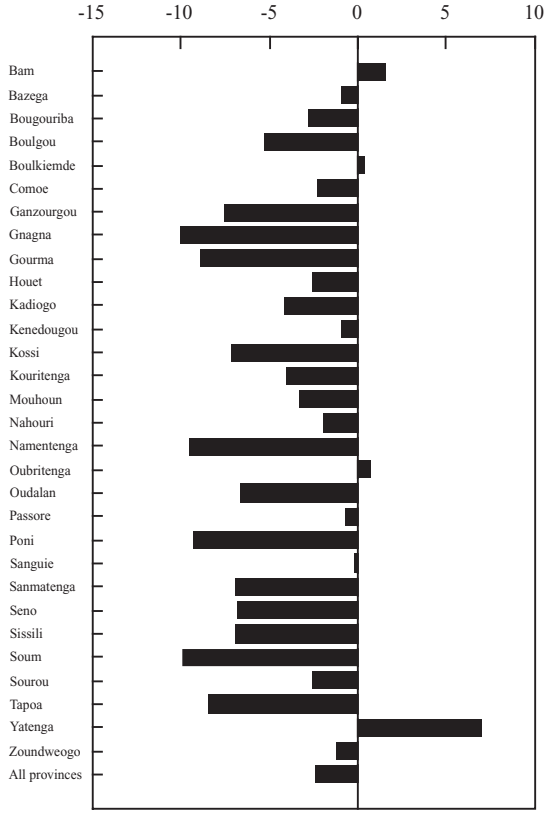


Figure 2.5 **Burkina Faso: discrepancy between enrolment objectives and results, by province, 1993-1994**



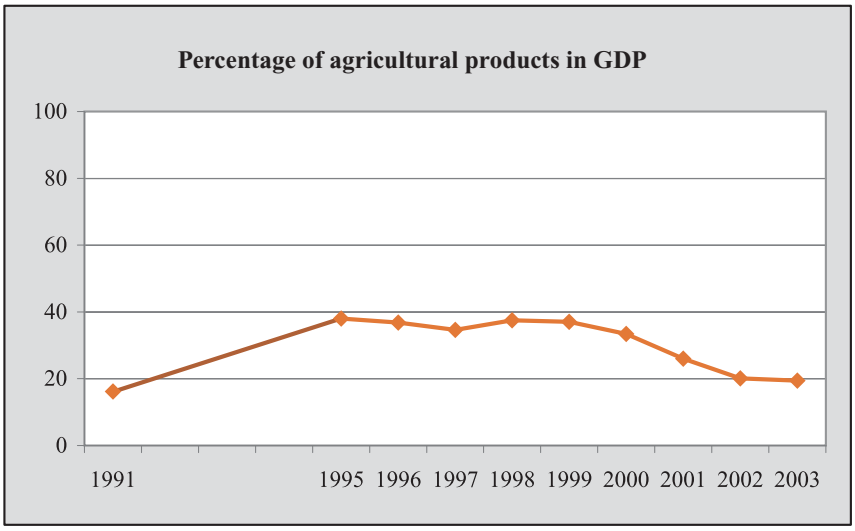
The two graphs in *Figure 3* offer a good illustration of this point. They are based on the same table and both of them represent the share of agricultural products as a percentage of Mongolia's GDP. Why, then, are the two graphs so different? The differences are due to two choices made by the person presenting the information concerning the width and length of the graph and the maximum and minimum values of the *y* axis.

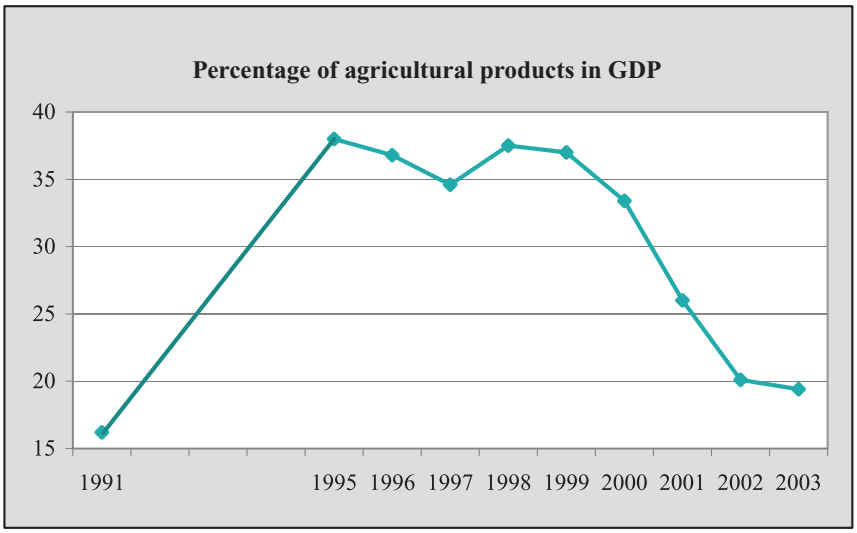
The result of these choices is manifest. The first graph shows a rather flat trend, while the second indicates a very substantial drop between 1999 and 2001. In this case, it is certainly of interest to point out recent changes, but preferably in a less marked way than in the second graph and more perceptibly than in the first. Once again, it is a matter of finding the right balance between two extremes.

Figure 3. Choice of scale for a graph

Percentage of agricultural products in Mongolia's GDP

Indicator	1991	1995	1996	1997	1998	1999	2000	2001	2002	2003
Percentage of agricultural products in GDP	16.2	38	36,.	34.6	37.5	37	33.4	26	20.1	19.4





c) Period analyzed

The time periods covered by the figure also have an impact on the way it presents the indicator, as illustrated by the example below.

Figure 4 presents net enrolment rates for rural children 7-12 years of age[6] in a country from 1970 to 1997. All three graphs in *Figure 4* are based on this table, but their periods of reference are different:

- *Figure 4.1* covers the period from 1970 to 1998 and uses data from 1970, 1975, 1980, 1985, 1990, 1995, 1996 and 1997;
- *Figure 4.2* covers the period from 1993 to 1997, using annual data;
- *Figure 4.3* presents annual data from 1980 to 1997.

Figure 4. Analysis of the indicator: period covered
Example: net enrolment rate for rural children aged 7 to 12

1970	1975	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
71	72.2	79	81.2	89.4	91.2	92.7	92.3	93.2	93.4	93.6	92.6	91.8	91.1	91.6	92.2	91.7	91.2	89.5	87.5

Figure 4.1

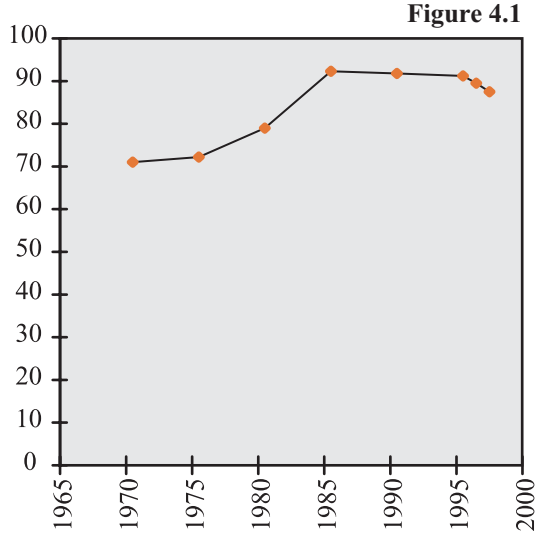


Figure 4.2

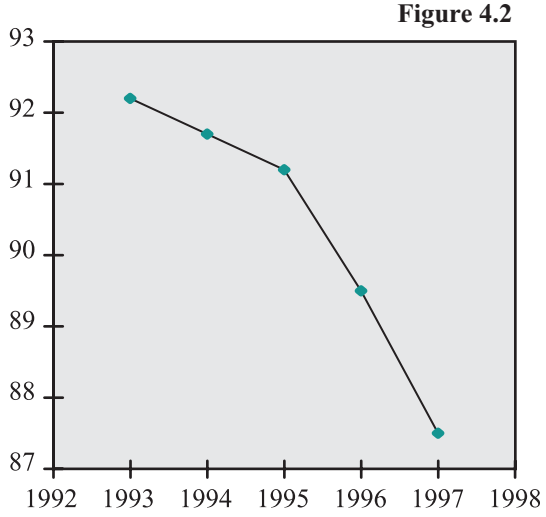
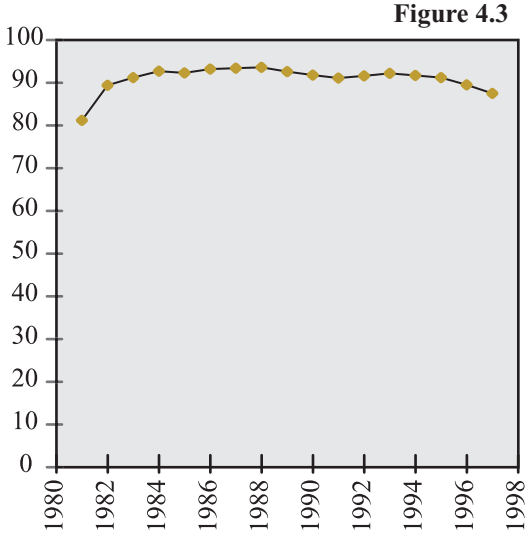


Figure 4.3



Source: Adapted from Sauvageot, 2003.

6. Included also are the 7-12 year-olds enrolled at secondary level.

Once again, the choice of presentation – in this case, the years covered – greatly changes the analysis. The second graph presents a most alarming picture, revealing a dramatic fall in the net enrolment rate (NER); the third gives the impression that the NER has changed very little; while the first clearly positions the recent fall against the background of rather rapid growth from 1970 to 1985. The choice among these graphs will partly depend on the objective tracked. In this specific case, however, there is little doubt that the first graph supports the analysis that is most to the point: strong growth, followed by stagnation and then a decline in the most recent years. Obviously, it is of great importance to seek explanations for these fluctuations.

d) Mapping

Indicators that are broken down by area, district or any other geographical unit can also be presented in the form of a map. This is a highly readable way of presenting a large amount of information – not only the values for the geographical units used, but also the specific distribution over the territory concerned.

The importance of mapping in analysis of rural education is demonstrated in the English example representing the distance between pupils' homes and the nearest primary school (*Figure 5.1*).

Another example, at a higher level of aggregation, is the map representing the ranking of states in the United States according to the urgency of the need for a rural education policy (*Figure 5.2*).

e) Scoreboard design

To summarize, the above examples show that the choice of the type of data presentation is a matter of critical importance.

The terminology must also be precise. The reader must be 'educated' by the right term being used at all times. This is very important for communication. If a graph is complex, it must be accompanied by an explanatory note to assist the reader in understanding.

If, for the same phenomenon, the data come from several sources and are different, it is absolutely necessary for the document's credibility to note this fact and give the reason for it in simple terms.

Three examples will serve to round out this brief presentation. The first is drawn from the document published by Mali on school conditions and double-shift classes; the second, concerned with the characteristics of rural education, from *Géographie de l'école* (Ministry of Education, France, 2003, No. 8); and the last from the US report on the development programme for rural communities and schools (pp. 63-69).

The success of the entire project depends on the quality of the work done at this stage. An all-out effort is required, calling on all available expertise and making every effort to produce concise, to-the-point syntheses. The aim is to stick to the basic ideas, though without blurring the nuances that are inevitable in a system as complex as the education system. Drafting such a document requires a great deal of time.

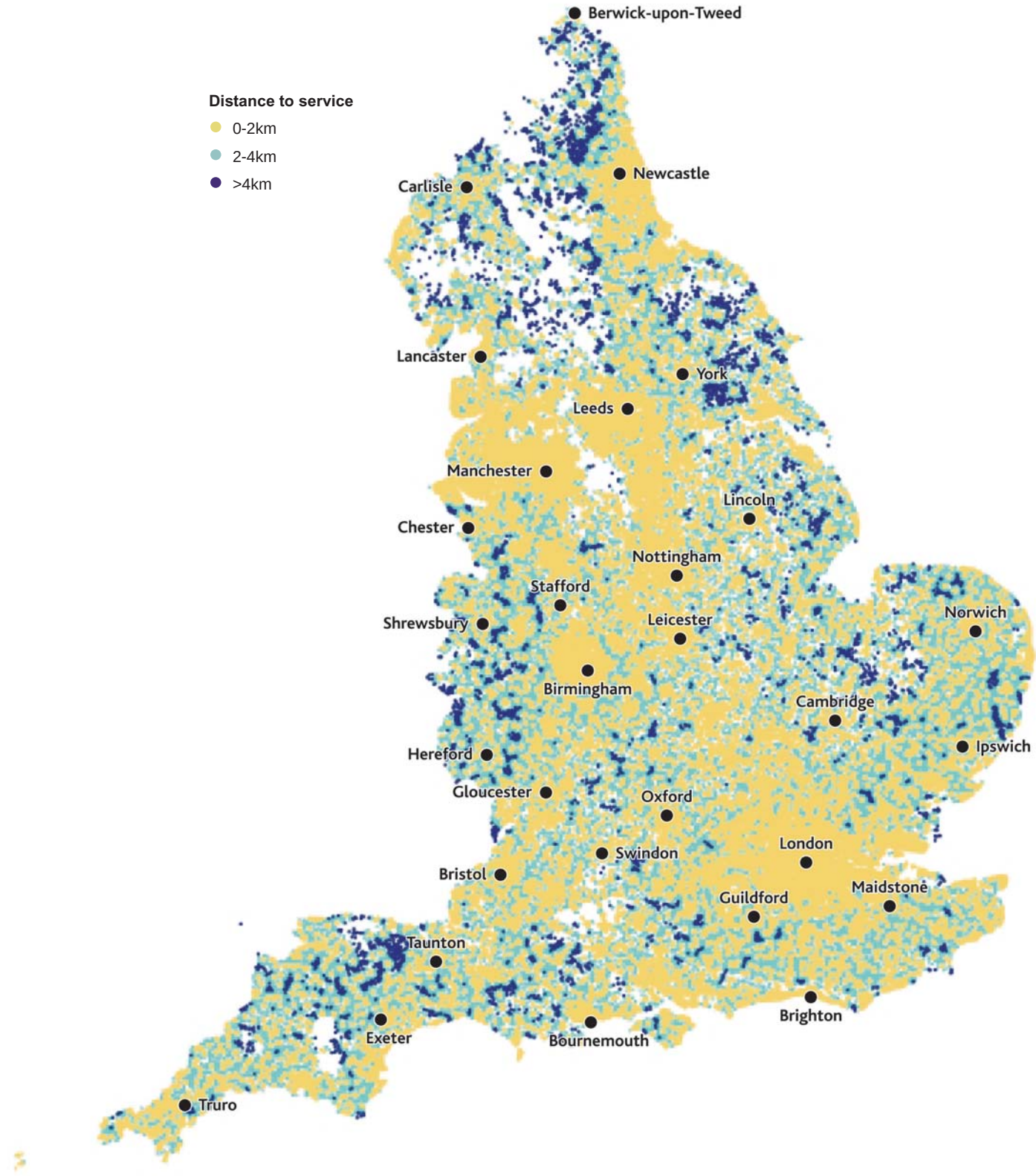
The project leader must play the role of editor-in-chief. He or she verifies the homogeneity of the drafting style, especially when there are several writers, as well as the overall consistency of the presented indicators, years of observation and presentation of tables and graphs. For example, he or she checks that the symbols used in graphs are the same throughout. It is desirable that he or she supervise a team of statisticians and/or analysts, each of whom drafts a different part of the scoreboard after the indicators have been distributed between them according to their expertise. Each writer should consider themself responsible for the quality of their indicator or indicators.

Very important work still remains to be done at this stage. Given the scope of his or her tasks, the project leader may be assisted by another person with good experience in supervisory editing. He or she must set out the editing principles, harmonizing the drafting styles of the various writers. It is not acceptable for a work of this type to have too much diversity.

In this particular area, training and expert assistance are often necessary.

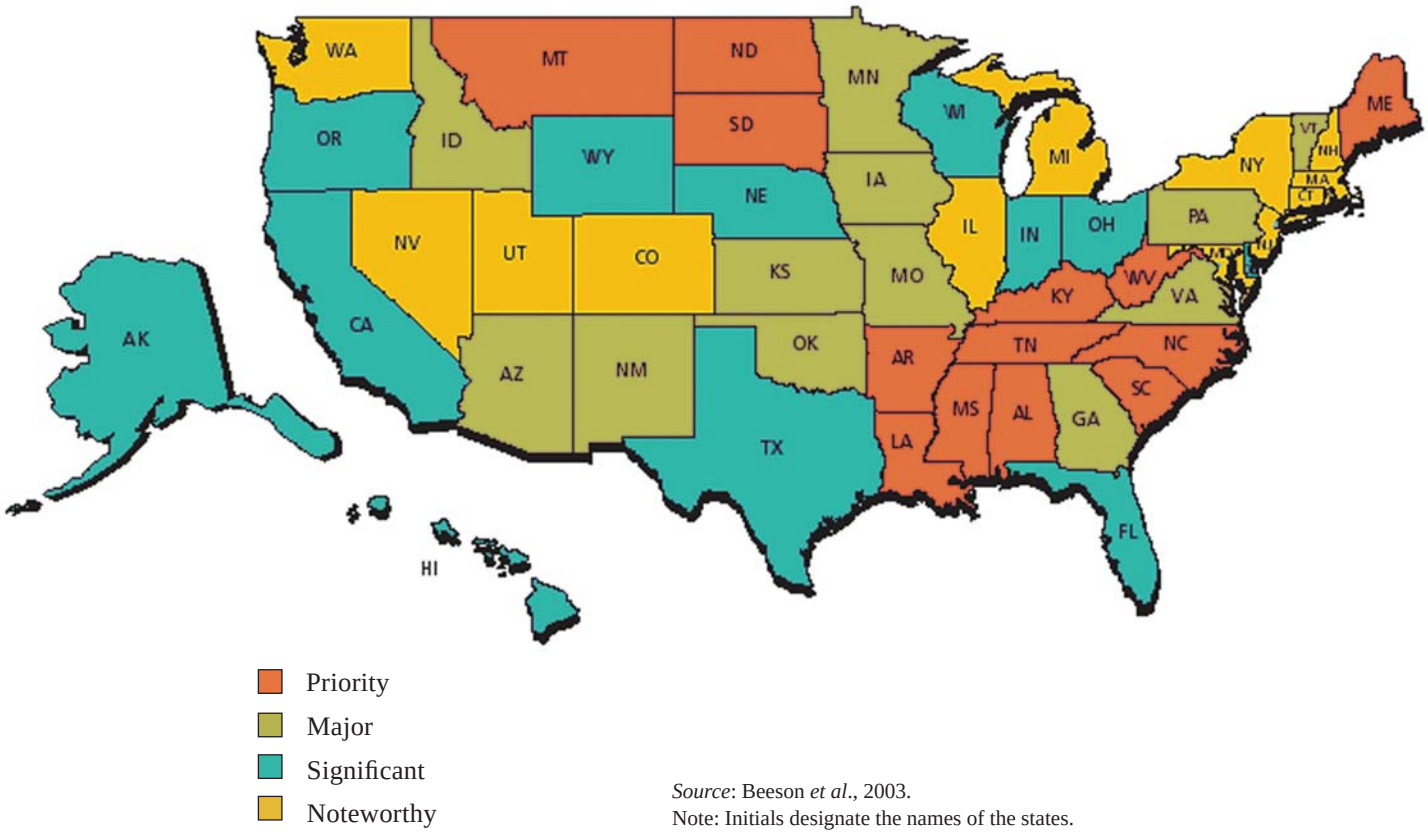
Figure 5.
The importance of mapping in the analysis of rural education

Figure 5.1 Geographical availability of primary schools in England, by distance from nearest school



Source: Countryside Agency, 2000.

Figure 5.2 United States: ranking of states according to the urgency of the need for a rural education policy



Source: Beeson *et al*., 2003.
Note: Initials designate the names of the states.

6. Layout of the document: microcomputing tools

This is another important stage of the project. Many data processing tools available today allow easy formatting of the document, which consists of text, tables and figures. As shown by the examples drawn from the documents on Mali, France and the United States, the point is to present the indicator clearly so that the user can see at a glance how it behaves over time.

The type of presentation will depend on the medium selected for dissemination of the document.

When the document is to be published in paper format, the simple choice is to place all the components related to a given indicator (tables, figures and analysis) on two facing pages, with the text on one side and the tables and figures on the other. As soon as the table and figures are ready, a dummy of the two-page spread should be produced in order to position all the components and check that the composition is well balanced and easy to read.

Some publications no longer rely exclusively on double-page spreads. Generally speaking, the priority, as for all the elements described in this guide, is a clear presentation that is easy for readers to grasp.

If the document is to be disseminated via an electronic medium (compact disc/CD or Internet site), the range of possible presentations is wider. The layout must be kept simple, however, in order to make the reader's task easy.

A wide range of products now on the market make it easy to format either a paper publication (Word, Excel) or a CD or Internet site (Dreamweaver, Frontpage, etc.).

Data can be exported directly from a statistical management database to a spreadsheet or other formatting software. For example, databases compiled using software such as Access, Interbase and Oracle, as well as SAS and SPSS, can be exported to spreadsheets. However, one must be careful about the time required to set up this interface. Data entry is actually not a very cumbersome operation. Therefore, one should not devote too much time to the creation of a gateway that is not indispensable. The choice must be made as a function of this ratio between the gateway creation time and the data entry time. It will depend on local conditions, but must not set back the work's progress.

With respect to the printed documents, that on Mali, for example, was produced in black and white with Word for Windows and Excel. In France, *L'état de l'école* (Ministry of Education, 1991-2004) was produced by means of a graphics chain using Corel Draw and Ventura. These software import the texts and graphics produced by drafters with Word and Excel. They are used in order to make possible subsequent work in the graphics chain, and in particular the separation of colours to produce the films, corresponding to each selected colour, before moving on to printing.

Other software combinations are possible: WordPerfect or Lotus in the first case, PageMaker, InDesign or Xpress in the second. In fact, as soon as one can use Windows, most problems for a black and white publication are resolved, as the printing is done directly on a (good and high-speed) photocopier from an original produced by a (quality) printer.

Difficulties arise when the document must go through a graphics chain, in the case of two- or four-colour publications. In this case, the numerous technical problems to be resolved will necessitate lengthy training for the staff entrusted with the scoreboard's preparation. It is possible, of course, to use a local publisher, but the cost of the document for the Ministry will then change its order of magnitude. In any event, a good analysis of local costs must be made before deciding on the type of document to publish. In this respect, being very ambitious can do more harm than good.

It is also important to publish the scoreboard soon after it has been produced. Throughout this study, we have stressed the necessity of producing a document containing the most recent data. One should not lose too much time on the physical production and printing phase. This must be kept in mind when choosing the type of production tools.

7. Scoreboard extracts

Extracts from three scoreboards are presented as examples below.

a) Mali

Schooling conditions

Double-shift classes

(Adapted from Ministry of Education, Mali, 1993)

The number of school canteens has changed very little since 1985/1986. In fact, the proportion of schools with a canteen has fallen: It was 11.8 per cent in 1991/1992.

The number of pupils fed in school canteens has never exceeded 10 per cent of total enrolment since 1985/1986. In 1991/1992, the proportion benefiting from a canteen was 7.3 per cent.

There is considerable regional disparity in this respect. Schools in Bamako have no canteens, whereas 37 per cent of pupils in the Timbuktu region do have access to one. The proportion of schools with canteens is also high in the Gao and Mopti regions.

This situation is, of course, strongly linked to the distance pupils must cover in order to attend school. In the three regions mentioned above, this distance is particularly long. Even in the Koulikoro, Sikasso and Ségou regions, 40-60 per cent of pupils live more than 5 kilometres from their schools.

Another important indicator is the percentage of pupils with seats. The situation in this regard gives some cause for concern. In the four regions for which the data are available, only 54.1 per cent of primary school pupils and 70 per cent of lower secondary pupils have a seat provided by the school (table-bench units). The situation is generally better at the lower secondary level, where over three quarters of pupils have seats in the Ségou and Koulikoro regions, and nearly all in Sikasso. The district of Bamako is less well-off, as only half of lower secondary pupils are provided with table-bench units.

Many schools have double-shift classes. Detailed data are available for four regions for the 1992/1993 school year, allowing a first assessment of this practice.

Overall, for these four regions, 15.8 per cent of pupils are in this situation.

Here again, regional disparities are strongly marked. There are very few double-shift classes in the district of Bamako (0.2 per cent of all classes), but they constitute one third of all classes in the Koulikoro region and one-sixth in the Sikasso region.

The grades most often grouped in double-shift classes are fifth and sixth year pupils, slightly ahead of third and fourth year groupings and significantly more than first and second year groupings.

Table 1. Change in number of school canteens in Mali

School year	No. of canteens	% of schools having a canteen	No. of pupils with access to a canteen	% of pupils
1985/86	236	15.7%	30,690	8.9%
1986/87	247	16.2%	34,537	10.0%
1987/88	240	15.1%	35,506	10.0%
1988/89	223	14.2%	33,346	9.2%
1989/90	241	14.6%	35,792	9.5%
1990/91	233	14.1%	38,101	9.6%
1991/92	203	11.8%	32,202	7.3%

Table 2. Number of school canteens by region in 1991/1992 in Mali

Region	No. of canteens	% of schools having a canteen	No. of pupils with access to a canteen	% of pupils
Kayes	66	30.4%	2,288	4.8%
Koulikoro	5	1.3%	942	1.3%
Sikasso	2	0.7%	527	0.7%
Segou	37	15.9%	4,326	6.6%
Mopti	38	21.0%	7,957	18.6%
Tombouctou	32	40.0%	4,852	37.6%
Gao	23	24.0%	4,300	25.1%
Bamako	0	0.0%	0	0.1%
Total	**203**	**11.8%**	**25,202**	**5.7%**

Figure 1. Percentage of pupils with seats in 1992/1993, by region in Mali

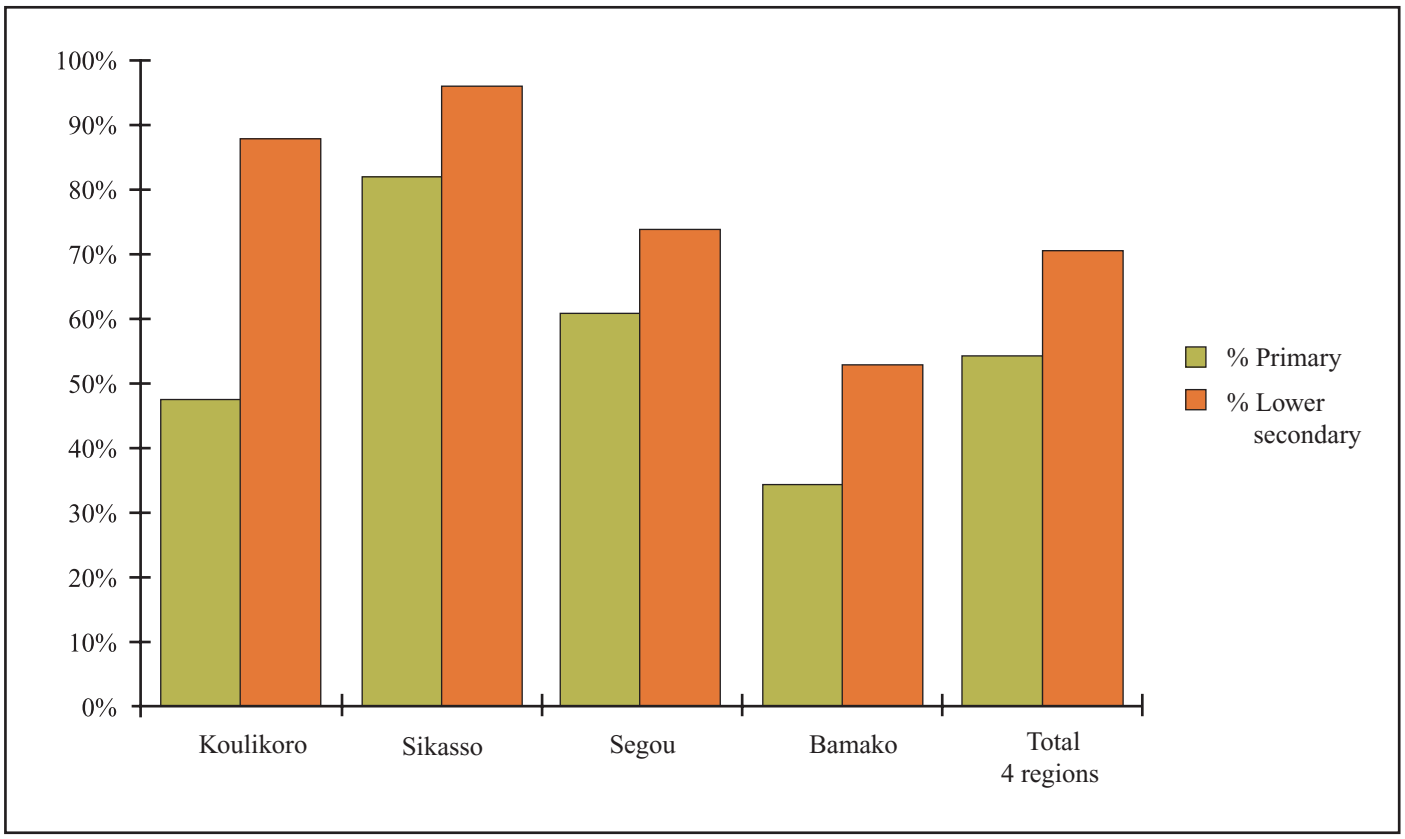


Table 3. Distribution of double-shift classes in 1992/93, by region and by level

Region	Grade	Public + private		% of total	
		Number of classes	Number of pupils	Classes	Pupils
Koulikoro	1-2	167	13,854	29.4%	36.3%
	3-4	152	6,938	34.4%	29.3%
	5-6	140	3,584	35.3%	27.4%
	Other	6	342		
	Total primary	465	24,718	33.0%	33.0%
Sikasso	1-2	62	4,700	12.1%	13.6%
	3-4	76	3,892	18.4%	17.5%
	5-6	78	2,107	20.2%	16.5%
	Other	1	134		
	Total primary	217	10,833	16.5%	15.6%
Segou	1-2	43	3,159	9.6%	10.6%
	3-4	60	3,376	16.4%	15.9%
	5-6	49	1,572	14.2%	11.4%
	Other	0	0		
	Total primary	152	8,107	13.1%	12.5%
Bamako	1-2	1	81	0.2%	0.2%
	3-4	2	97	0.4%	0.3%
	5-6	0	0	0.0%	0.0%
	Other	0	0		
	Total primary	3	178	0.2%	0.2%
Total 4 regions	1-2	273	21,794	12.9%	14.6%
	3-4	290	14,303	17.3%	13.7%
	5-6	267	7,263	17.6%	11.6%
	Other	7	476	0.0%	0.0%
	1er cycle	**837**	**43,836**	**15.8%**	**13.9%**

b) France

Excerpt from *Géographie de l'école*, 2003 (No. 8). – Evaluation and Forecasting Directorate, Ministry of Education, France

The depopulation of predominantly rural areas has on the whole stopped

Although the share of agriculture in total employment is now below 5 per cent for metropolitan France as a whole, it is still greater than 7 per cent in the south-west, the west and the Limousin department. Rurality can be assessed in terms of economic activity, but also in terms of the extent of 'predominantly rural areas' (as defined by the French National Institute for Statistics and Economic Studies/INSEE). These areas, whose depopulation stopped on the whole between the last two censuses, are inhabited by highly variable proportions of the population of each department: virtually zero in the Paris area and under 10 per cent in the south-east, Alsace and the north, but over half in the south-west, the Massif Central, Lower Normandy and the north-east. These differences strongly influence the material and educational conditions offered to children.

'Large' lower secondary schools are generally more common in urban areas

France has nearly 7,000 lower secondary schools with a total of over 3 million pupils, giving an average of slightly under 500 pupils per school. Nineteen per cent of lower secondary schools have fewer than 250 pupils, approximately 12 per cent have more than 750, and the number of such 'large' schools has been trending downward in recent years. This overall distribution of school size displays considerable regional variation.

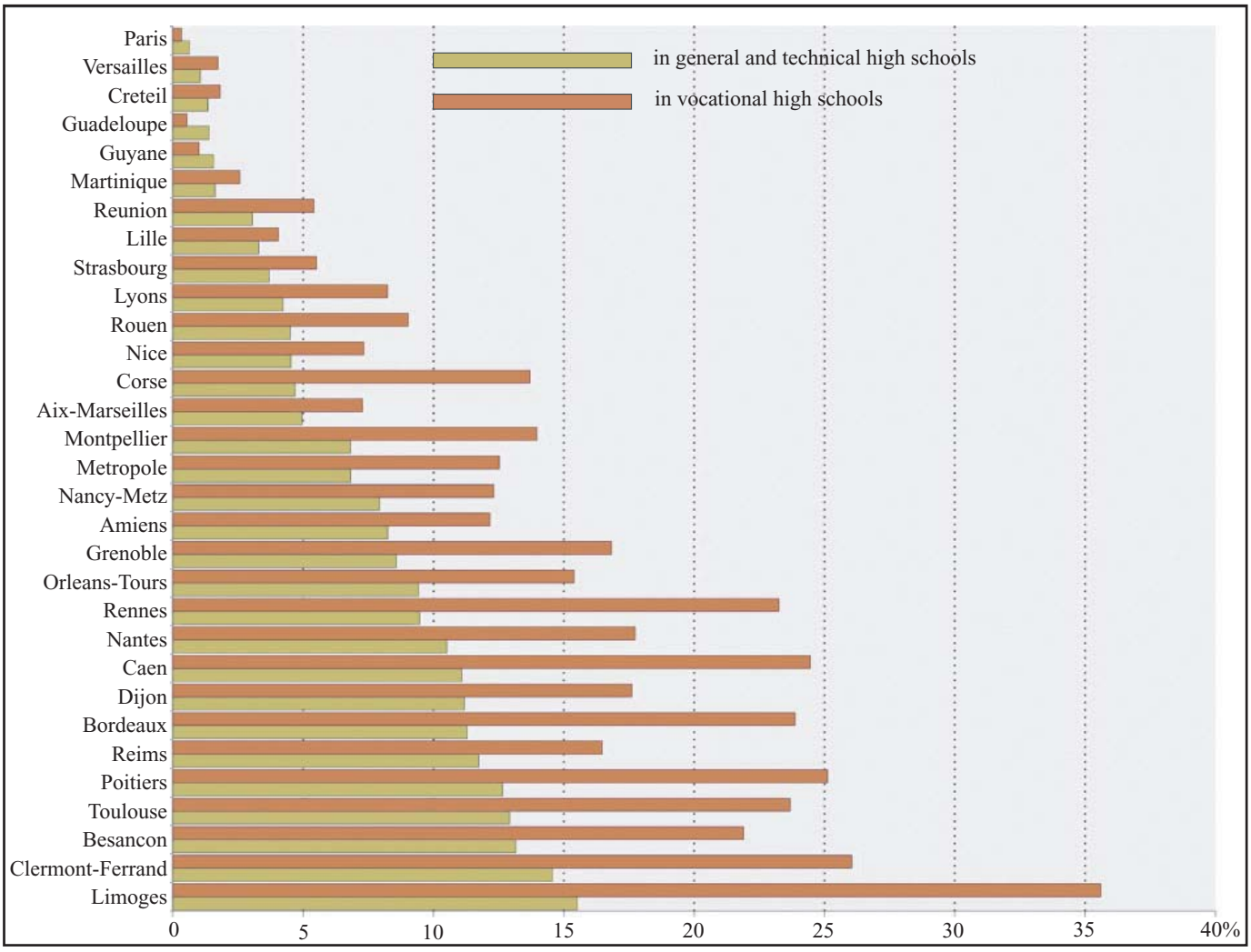
At least one quarter of the lower secondary schools covered by the regional education authorities of the west, south-west, Besançon and Corsica are 'small'. In contrast, the overseas departments have a particularly high proportion of schools with over 750 pupils, ahead of the south-east (notably the city of Nice, where the proportion of large schools is still rising) and the Versailles regional authority, which are highly urbanized areas. Corsica displays strongly marked disparities (29 per cent of small lower secondary schools and 16 per cent of large ones), while Paris is below the national average in both respects.*

More boarders in vocational education and in rural areas

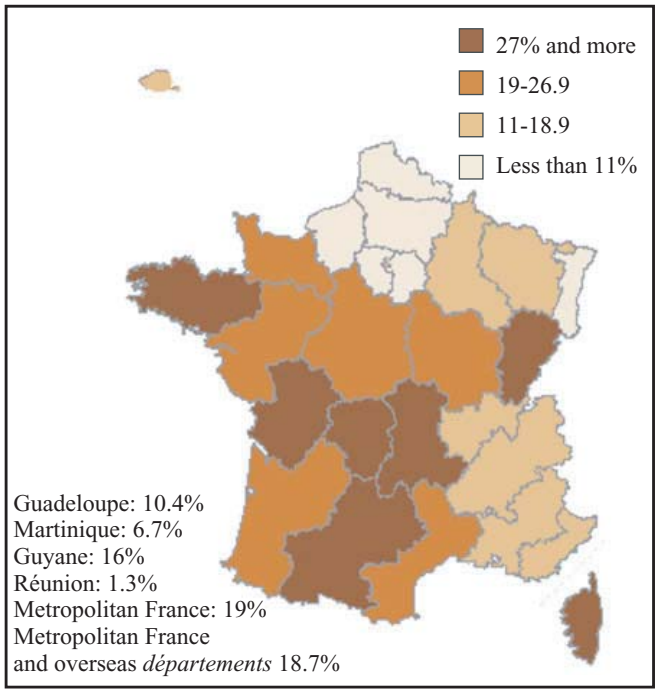
Efforts to expand provision and maintain schools close to users everywhere have not eliminated the problem of distance from school and the need for boarding facilities, particularly at the upper secondary level. During the last 10 years, the proportion of boarders in high schools has fallen from 10.5 per cent to 8.6 per cent in metropolitan France as a whole. It is particularly low in the overseas departments and below 5 per cent in the highly urbanized districts of the Paris area, but exceeds 15 per cent in the most rural areas (covered by the regional authorities of Limoges, Clermont-Ferrand, Poitiers, Besançon, Caen and Toulouse). Within these districts lying above the national average, the proportion of boarders is especially high in vocational high schools: around one quarter, and as high as 36 per cent in Limoges.

* Where the grouping of pupils is concerned, it should be noted that separate schools can in fact be located in the same place, constituting 'campuses'. These are common in secondary education in Paris and Corsica, but far less so in the districts of Nice, Strasbourg and Versailles.

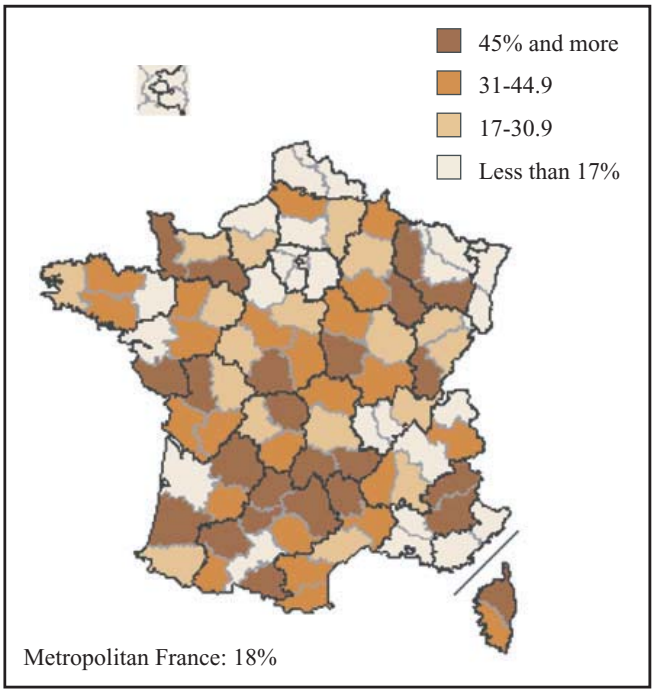
Figure 1. Proportion of boarders at the beginning of the 2001 school year (MOE, public and private)



Population of junior high schools with fewer than 250 pupils at the beginning of the 2001 school year, MOE, public and private



Proportion of the population living in rural areas in 1999 (as defined by INSEE RP 99)



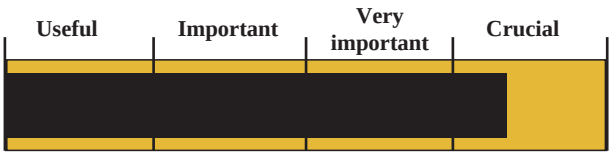
c) United States of America

Scoreboard on the situation of rural areas, USA

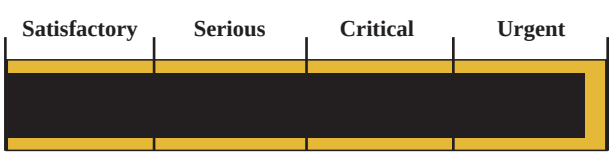
ALABAMA – Crucial in importance and urgently in need of attention, Alabama ranks second overall among the 50 states. Contributing to these rankings are high rural poverty, low income and both a high percentage and large numbers of rural people. Relatively large rural schools boost the average number of students per grade, lower the percentage of rural students who attend small schools, and contribute to high transportation spending. Classes are relatively large, and rural classroom computer use is among the lowest in the nation. Teachers are among the most dissatisfied with parental support.

PRIORITY RANKING

2



Importance gauge



Urgency gauge

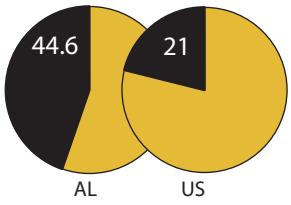
	AL	Rank*
Percentage of state's population that is rural	44.6%	8
Number of rural people	1,981,427	9
Percentage of public schools in rural areas	34.8%	27
Percentage of public school students enrolled in rural schools	31.8	16
Percentage of students enrolled in rural schools who are minorities	24.5%	17
Percentage of all students attending small rural schools	11.5%	20
Percentage of rural children in poverty	19.4%	9

** A rank of 1 is most important.*

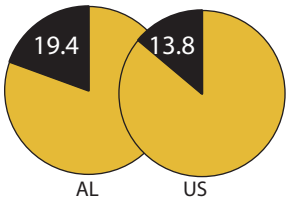
	AL	Rank*
Average rural teacher's salary	$34,087	29
Ratio of rural to non-rural teacher salary	0.58	43
Percentage of rural students who are free or reduced-price lunch eligible	46.7%	11
Average rural student-to-teacher ratio	15.7	16
Percentage of rural teachers using computers in class	64.5%	7
Percentage of rural expenditures on school administration costs, difference from median	0.6%	17
Rural per capita income	$16,683	10
Percentage of rural teachers reporting parental support	51.5%	7
Percentage of rural expenditures on transportation	5.0%	12
Percentage of rural expenditures on instruction and pupil support	58.5%	25
Average number of students per grade	67.5%	19
Percentage of rural schools with declining enrolments of at least 10%, 1996-2000	34.7%	26

** A rank of 1 is most urgent.*

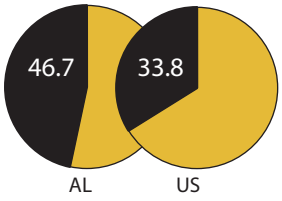
Percentage of population that is rural



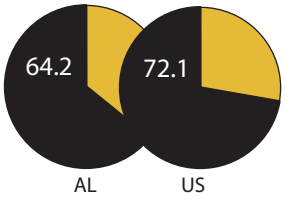
Percentage of rural children in poverty



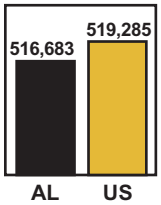
Percentage of rural students who are eligible for free or reduced-price lunch



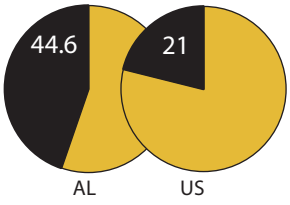
Percentage of rural teachers using computers in class



Rural per capita income



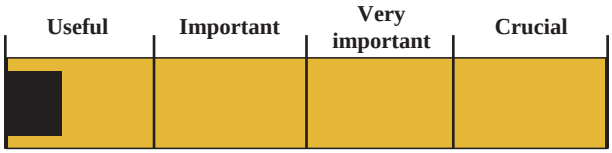
Percentage of population that is rural



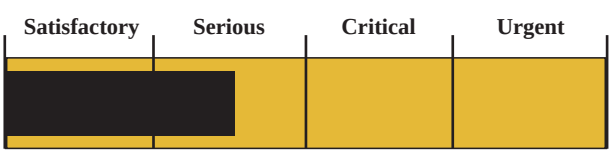
CONNECTICUT – With more rural people than most Northern Plains states, you'd think rural education would be fairly important in Connecticut, but it ranks 31st or lower on all importance indicators. It has a lower percentage of rural children in poverty than any other state. It also enjoys the smallest percentage of rural schools with declining enrolments, highest rural per capita income, highest rural teacher salaries (and a small pay gap), and second highest percentage of rural school money that reaches the classroom. Rural education here is in pretty good shape.

PRIORITY RANKING

48



Importance gauge



Urgency gauge

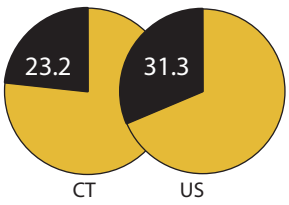
	CT	Rank*
Percentage of state's population that is rural	12.3%	40
Number of rural people	417,506	39
Percentage of public schools in rural areas	23.2%	41
Percentage of public school students attending rural schools	20.8%	36
Percentage of students enrolled in rural schools who are minorities	7.6%	31
Percentage of all students attending small rural schools	6.0%	44
Percentage of rural children in poverty	2.7%	50

** A rank of 1 is most important.*

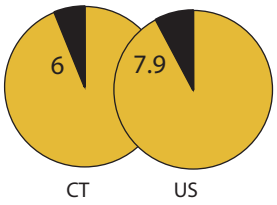
	CT	Rank*
Average rural teacher's salary	$48,332	49
Ratio of rural to non-rural teacher salary	0.96	34
Percentage of rural students who are free or reduced-price lunch eligible	N/A	N/A
Average rural student-to-teacher ratio	13.1	37
Percentage of rural teachers using computers in class	66.4%	9
Percentage of rural expenditures on school administration costs, difference from median	0.4%	29
Rural per capita income	$33,428	50
Percentage of rural teachers reporting parental support	67.8%	39
Percentage of rural expenditures on transportation	5.0%	13
Percentage of rural expenditures on instruction and pupil support	64.5%	48
Average number of students per grade	97.3	11
Percentage of rural schools with declining enrolments of at least 10%, 1996-2000	17.7%	50

** A rank of 1 is most urgent.*

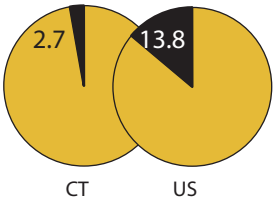
Percentage of public schools in rural areas



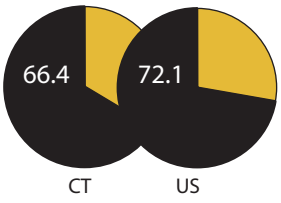
Percentage of all students attending small rural schools



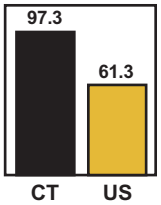
Percentage of rural children in poverty



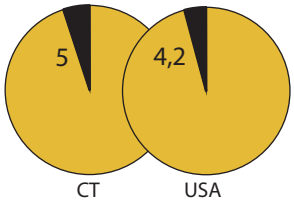
Percentage of rural teachers using computers in class



Average number of students per grade



Percentage of rural expenditures on transportation



CHAPTER 5
USE OF THE SCOREBOARD

1. Using the scoreboard for internal and external evaluation: the transparency issue

The production of an indicators document is proof of a desire for transparency concerning how a country's education system functions in rural areas. For this reason, the decision to produce and publish it is a political decision, and hence it is necessary to obtain the support and approval of the minister. Indeed, it is the minister who will have to endorse the finalized document and, even better, present it to the cabinet and the press, adding a personal touch.

This is not always easy to achieve, but is of utmost importance. It is necessary to convince political decision-makers of the need to disseminate this information widely and to avoid, as has sometimes occurred, having documents of this type end up in (occasionally locked) cupboards.

Once published, the scoreboard must be distributed widely and contribute to the debate about schools in rural areas. Therefore, it must be available to: politicians; those in charge of the education system; Parent Teacher Associations (PTAs); teachers' trade unions; school directors; and the administrative and technical staff of schools.

The goal is to turn it into a reference document for political discussion and the media. This is an ambitious objective, but is the right one to set for this project.

Naturally, the success of this operation will not be ensured unless the publication of the document accompanies or follows a clear transformation in the way in which decisions are taken: The culture of objective data must be disseminated and developed. In the absence of such a change, the scoreboard loses value and no doubt becomes less useful. In the past, documents of the same type have appeared and then disappeared for lack of a genuine impact. Here, the ball is in the decision-makers' court. The producers of the scoreboard must do everything to demonstrate its utility and, as has already been suggested several times, design it in such a way that it becomes a *sine qua non*. A good example of success in this respect is France's *L'état de l'école*, which has managed to become the indispensable tool in any political or social discussion about schools in France.

2. Updating the scoreboard

The scoreboard must not be published once and thereafter be considered a *fait accompli*. In order for it to be useful and used, the document must become a 'good habit'. There is only one way to achieve this, namely to elaborate and disseminate it very regularly so that the most recent data is always available. Regular production of the scoreboard must therefore be organized. This has certain consequences for the organization of the work, for data collection and so on.

Computing tools make it possible to update the text, tables and graphs relatively easily. With this end in mind, the data should be organized appropriately in the spreadsheet, and the same page layout retained for the scoreboard. The updating should be done as soon as new data are available. One can, of course, envisage automatic procedures, but they can sometimes be more cumbersome to implement than manual updating. Such procedures should be carefully analyzed before investing in automatic updating.

Ideally, of course, the goal should be to move rapidly to annual publication.

As was pointed out above, the editor-in-chief should follow on from the project leader. For the operation to become routine, it must be completely immersed in the concerned departments of the Ministry. The editor-in-chief continues to play a crucial role. He or she is responsible for preserving the quality and consistency of the document and for avoiding any deviations, including those arising from the success of the first issue, such as requests for more information or more indicators.

3. Other uses: international comparison; regional diversity; and school monitoring

Throughout this guide, we have cited many documents and indicators covering an entire country or education system, such as Mali, Lesotho and France. It can also be informative to provide a few international comparisons in a document on an individual country, as was done in the publications on Finland, France and Denmark. This helps to put certain analyses into perspective.

The difficulty in dealing with education for rural people is that there is no universally accepted definition of the rural environment (see *Chapter 1*). As a result, it is very difficult to undertake comparative analyses. Such analyses can be highly informative, but this requires a great deal of preliminary spadework and the certainty that the data compared are indeed properly comparable.

Similarly, tables broken down by region can be included in a document concerned with the national situation, as in the documents on Mali and Lesotho. In France, the decision was taken to produce a separate document for the regions, so there are few tables by region in the national publication. This separate document, *Géographie de l'école*, is structured along the same lines but focuses on regional analyses.

For a scoreboard by region, the main difficulty is that of data availability, as quite often, for example in the case of financial indicators, one cannot obtain the same details at the regional level as at the national level. In so far as tools are concerned, one must use cartography software in order to represent regional diversities as visually as possible. For *Géographie de l'école* (Ministry of Education, France, 1993-2004), ADDE's *Cartes et Bases* ('Maps and Bases') software was used, but other packages, such as Arcview or MapInfo, can do the job. The most important point is that moving data between the spreadsheet and cartography software should be as simple as possible. As we have emphasized, extensive use of maps is of great value in studying education in the rural environment.

The work on indicators can also be focused on schools. This should make it possible to report on their functioning and results. In this case, each school indicator should be accompanied by its regional and national values. These data serve as references; they are very useful for schools that wish to see where they stand with respect to other schools.

The same kind of work could be advantageously carried out for rural schools. Benchmark indicators for the various types of urban and rural areas could be produced systematically, providing information that is very useful to rural school principals.

The publication of indicators for each school raises a number of problems, however: the question of transparency and the confidentiality of certain data. In addition, this type of publication requires a different approach to layout than that presented in this guide.

A project for French secondary schools is an indication of this sort of work. A tool known as 'Indicators for the Guidance of Secondary Schools' (IPES) gives them access to a set of indicators, together with regional and national references. This instrument takes full advantage of input from the information system. It is also the first feedback of information to the schools, which, after all, produce this information in the first place, often with some difficulty.

Only three of a whole battery of indicators were published. Some of them – dealing with examination results – had already been reported in rather summary fashion by the press, and as a result the ministry was obliged to provide more precise information. Crude comparison of individual schools' examination results can easily lead to hasty conclusions as to their efficiency and quality. For this reason, the document on upper secondary schools in France places great importance on indicators relating to the school's environment and its student population.

Conclusion

To plan and implement EFA strategies that address the needs of rural people, a number of questions must be answered:

- What are the characteristics of the rural people concerned?
- What urban/rural disparities exist with regard to access to education and quality?
- What causes these disparities?
- Which responses seem apt to reduce them?

The EFA flagship programme 'Education for Rural People', presented in the introduction to this guide, attempts to view the issue of such education from a broader, intersectoral perspective.

This process of questioning makes it possible to develop relevant strategies for reducing the divide between urban and rural dwellers. As with any strategy, it must be accompanied by monitoring and evaluation tools in order to guide implementation of actions aimed at reducing disparities and to measure, simply but with strict accuracy, the progress achieved towards the designated goals.

The introduction to this guide established a general framework relating to the first three questions. The text then analyzed the methods and technical tools used to develop the monitoring and evaluation instruments, in this case an information system, and more specifically a system of appropriate indicators for rural education.

To assess and monitor the EFA goals, one must be able to gauge progress in terms of EFA for rural people, as most out-of-school children and illiterate adults live in rural areas. The indicators system on education for rural people is not only a monitoring tool, but also a diagnostic tool that fosters accountability to the community for the progress achieved and dialogue with a variety of partners. This guide presented the steps involved in developing this system of indicators:

- mastering the concepts related to information and indicators;
- setting precise goals for rural education policy and tracking them with specific indicators;
- improving the information system at the local level, particularly where non-formal education is concerned; and
- developing a means of communication specifically for this tool.

The importance given to information (flows, users, quality, usage) and a constant concern for transparency are key variables in making rural schools function in a manner more relevant to the actual needs and conditions of rural communities.

The IIEP and FAO hope that this guide will be of use to decision-makers, planners and administers in planning and managing ERP.

In addition to the work required on ERP, they face a complex but unavoidable challenge: linking ERP strategies to poverty reduction initiatives within the framework of poverty reduction strategy papers (PRSPs). Let us recall once again, in conclusion, that the vast majority of the poor live in rural areas. Efforts to develop education for rural people must therefore, to the greatest extent possible, form part of a broader poverty reduction programme in which education is only one component. This will make it possible to optimize the planning of co-ordinated actions against poverty and for education for all, and to bring them to a successful conclusion.

Appendix

Strategic goals and secondary objectives: examples

Excerpts from *A medium-term strategy for education for rural people in Kosovo* (Ministries of Education, Agriculture, Forestry and Rural Development, Science and Technology, Kosovo, *et al.*, 2004).

Goal 1.

To improve school-community cooperation and increase community responsibility for education in rural areas (in order to develop an active partnership in school management)

Objectives:

1. To increase rural community involvement and responsibility for school management;
2. To encourage parents in rural areas to take a more pro-active role in the education of their children;
3. To develop a relevant education (contextualized curriculum) for rural areas through school-community links (also Goal 3);
4. To develop the village school as a community learning centre for rural people.

Goal 2.

To improve participation and retention of rural children in basic education and develop opportunities for their enrolment into post-compulsory education

Objectives:

1. To increase the participation of children in rural areas in pre-school (ECE);
2. To increase the retention of students in rural areas in basic education up to grade 9 (especially girls and minority groups);
3. To increase the participation of children in rural areas in post-compulsory (upper secondary) education (especially girls and minority groups).

Goal 3.

To provide education adapted to the learning needs of children in rural areas

Objectives:

1. To contextualize the curriculum of basic compulsory education, adapting it to meet the specific needs of rural people;
2. To increase community involvement in rural children's education;
3. To reform vocational education so that it is demand driven and related to the specific development needs of rural areas;
4. To improve the training of teachers to ensure it includes the specific needs of rural learners.

Goal 4.

To increase participation of rural people in relevant non-formal education and training programmes (adult education), especially linked to income generation

Objectives:

1. To increase awareness amongst policy makers and communities of the role of education and training in rural development;
2. To ensure that national (sector) policies and strategies for NFE and skills training take account of the needs of rural people;
3. To increase community responsibility for NFE;
4. To expand opportunities and ensure rural people have access to NFE;
5. To develop relevant and demand driven NFE;
6. To develop quality training materials for NFE, accessible to all;
7. To improve coordination and collaboration between different ministries, NGOs and private sector providers of NFE;
8. To improve the quality of trainers working in NFE;
9. To provide community learning centres.

Goal 5.

To improve the physical and material resources of rural schools and ensure at least a minimum level of resources necessary for the teaching process

Objectives:

1. To improve rural schools' infrastructure through the rehabilitation of existing buildings and utilities, and, where necessary, the construction and equipping of new facilities;
2. To increase the provision of textbooks and basic teaching/learning materials in rural schools;
3. To inculcate a 'culture' of school maintenance within rural schools, local communities and local education authorities;
4. To ensure modern means of communication in rural schools.

Goal 6.

To establish a reliable and accessible education information system (not only related to rural schools)

Objectives:

1. To establish a reliable and accessible national database on education;
2. To provide information technology (computers and software) in schools and municipal education offices (also Goal 5);
3. To develop the capacity of education staff (in schools and municipal offices) in information management – collecting, compiling, recording and accessing education data;
4. To support the ongoing process of developing standards and assessment for all grades and ensure the accurate recording of relevant data in a useable form;
5. To establish an Education Research Centre in Kosovo.

Goal 7.

To develop the management capacity and organizational structure of rural schools

Objectives:

1. To improve management and leadership skills of school directors;
2. To increase participation by the local community in school management (also Goal 1);
3. To improve the management skills of school boards and regional and municipal education officers;
4. To increase support and guidance by regional education officers to rural schools;
5. To optimize the use of staff and physical resources in rural schools through organizational change;
6. To improve the means of communication in rural schools (also Goal 5).

Goal 8.

To develop the human resources of education in rural areas by improving the recruitment, training and retention of teachers in rural schools

Objectives:

1. To update teachers' skills and improve teaching methods through in-service training programmes in rural schools;
2. To improve the training of new teachers (provided by Faculty of Education) who will work in rural areas;
3. To improve the working conditions and terms of employment of teaching staff in rural schools;
4. To introduce a system for teacher assessment and evaluation (including guidance and support) in rural schools.

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