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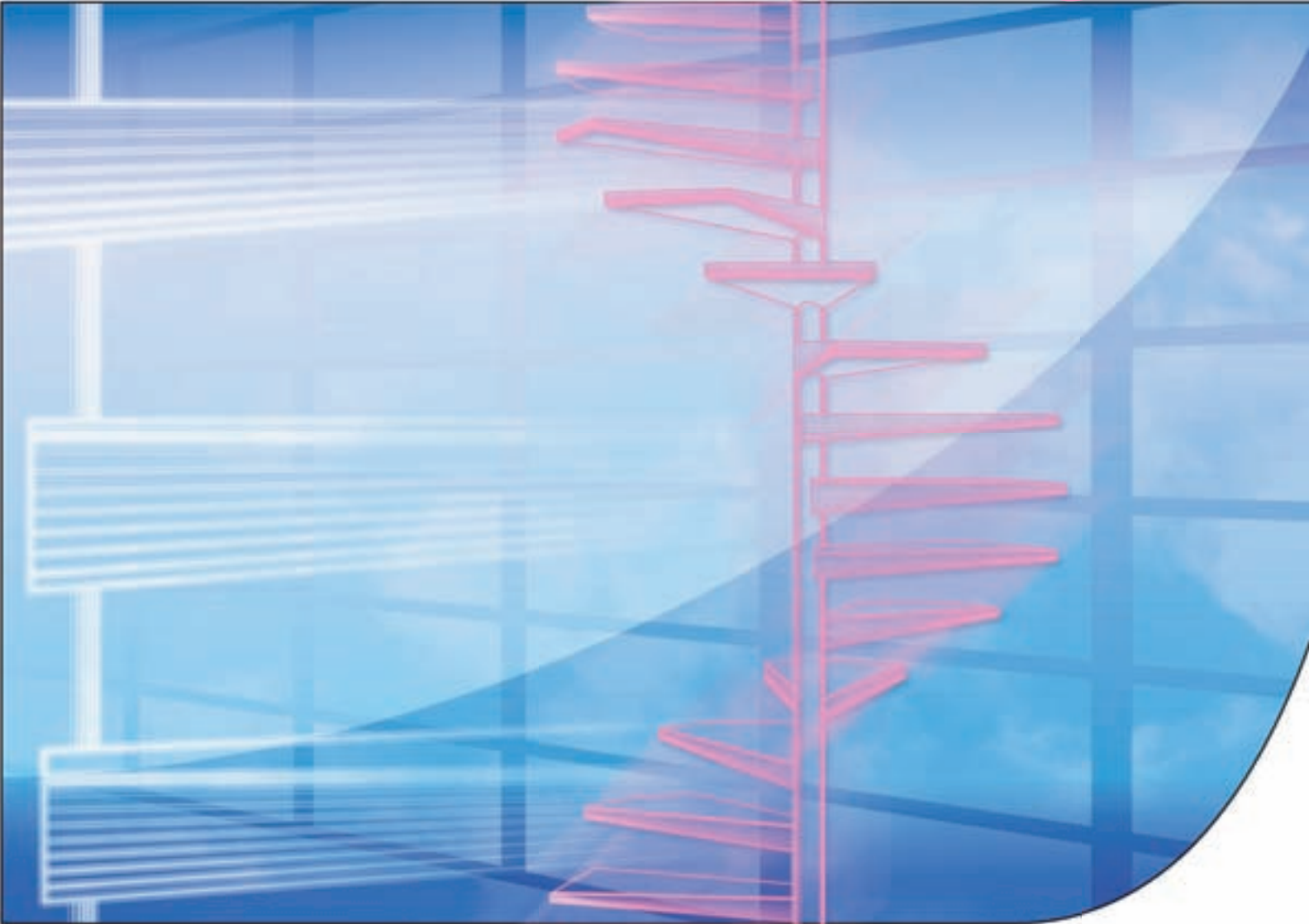


International Institute
for Educational Planning

Strategic Planning

Techniques and methods

Working
paper **3**



Strategic planning: Techniques and methods

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Education Sector Planning Working Papers

WORKING PAPER 3



United Nations
Educational, Scientific and
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International Institute
for Educational Planning

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Foreword to the series

The priority mandate of the International Institute for Educational Planning (IIEP) is to strengthen the capacity of UNESCO Member States to plan and manage education effectively. IIEP aims at fulfilling this mandate through a range of interlinked programmes: short- and long-term training, in Paris, in Buenos Aires and in the field; research on challenges to effective educational planning and management and on successful strategies and practices; policy guidance and advocacy; and collaboration with countries on the actual preparation of plans, and on their implementation, monitoring and evaluation.

Over the years, IIEP has supported a large number of countries in developing their capacity to formulate their national education sector plans. This Education Sector Planning Working Papers series draws from a vast accumulation of 'field-based' experience of IIEP staff members and consultants working with a diverse range of countries. The intention is to have a set of practical and easy-to-use guidelines on different aspects of the strategic planning of education that could be applicable in various contexts. These working papers have been prepared primarily for senior policy/decision-makers, for staff of Ministries of Education and national and regional institutions involved in technical aspects of planning and for international agency staff supporting national policy and planning. To facilitate their work in education sector planning, we have made them available on the IIEP website.

Through these Working Papers, IIEP hopes to contribute to the important work being done by the community of educational planners and managers in many countries, sometimes in very challenging conditions. Other self-learning materials on specific educational planning and management issues are also available on IIEP's website (www.iiep.unesco.org). The website contains, in addition, a portal of education plans and policies from UNESCO Member States, called Planipolis (http://planipolis.iiep.unesco.org/basic_search.php).

Finally, we intend the Education Sector Planning Working Papers to evolve over time as we learn from joint experiences. Thus, any feedback to the documents will be most appreciated. The team who prepared the documents would like to acknowledge the support of the Ministries of Education of various countries and the development partners, which has greatly contributed to this work.

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Introduction

The methodological steps for preparing a strategic medium-term plan can be split up into eight phases. The different phases have been briefly presented at the end of Education Sector Planning Working Paper 2, *Strategic planning: Organizational arrangements*, and they are listed again in *Box 1*:

Box 1. The eight phases of plan preparation

Phase 1. Sector diagnosis

Phase 2. Policy formulation

Phase 3. Selection of objectives and priority areas

Phase 4. Design of priority programme

Phase 5. Preparation of cost and financing framework

Phase 6. Design of monitoring system

Phase 7. Writing up of draft plan

Phase 8. Revision of draft and official plan approval

The eight phases are of varying duration and complexity (and will be outlined in detail in individual chapters below). The most important and also the most time-consuming ones are generally Phases 1 and 4, concerning diagnosis and programme design, respectively. Technical expertise is needed for all phases, but some (in particular Phases 1 to 4) require the active involvement of the ministry as a whole, whereas with others (such as Phase 5) it is mainly the technical people who are responsible for their completion. Furthermore (as explained in Working Paper 2), stakeholders and development partners must be informed and consulted at critical moments of the plan preparation process, and in particular at the end of Phases 3 and 7. Because of the participatory nature of the whole undertaking and the need to combine the plan preparation with a solid capacity building component, the completion of the eight phases will ordinarily take between 8 and 12 months (if not longer), depending on the particular circumstances in each country.

The objective of this Working Paper is to provide practical guidance about the methodological and technical aspects relating to each of the eight phases. For several of these aspects, excellent learning material – produced by IIEP and others – exists and will be referred to in the text. The reader can find the most important reference materials in the list at the end of this document.

The user of these guidelines is further invited to look at real education sector plans; examples of these which have been recently produced in various countries can be downloaded from the IIEP Planipolis portal.¹ Such practical examples will greatly facilitate the understanding of some of the techniques and methods presented here. With this idea in mind, five plans – from Egypt, Ghana, Grenada, Mauritius, and Mozambique (*Box 2*) – have been selected and will be referred to throughout the text. They are not perfect modules to be copied, but each has interesting features. They should be seen as illustrative material and sources of inspiration, not as models.

1. See http://planipolis.iiep.unesco.org/basic_search.php

Box 2. Five national education sector plans

- Egypt – The National Plan for Education for All (2002/2003–2015/2016). Cairo Ministry of Education, 2003. (<http://planipolis.iiep.unesco.org/upload/Egypt/Egypt%20EFA%20Plan.pdf>)
- Ghana – National Action Plan Education for All: Ghana 2003–2015. Accra, MOEYS, 2003. (<http://planipolis.iiep.unesco.org/upload/Ghana/Ghana%20EFA%20NAP%20Finalised%20Version.pdf>)
- Grenada – Strategic plan for educational enhancement and development 2006–2015 SPEED II. Volume 1: The strategic framework. St Georges, Ministry of Education, 2006. (<http://planipolis.iiep.unesco.org/upload/Grenada/Grenada%20Speed%20II.pdf>)
- Mauritius – Education and human resources strategy plan 2008–2020: draft. Port Louis, Ministry of Education, Culture and Human Resources, 2008. (http://chet.org.za/manual/media/files/chet_hernana_docs/Mauritius/National/DRAFT%20EDUCATION%20and%20HR%20STRATEGY%20PLAN%202008-2020.pdf)
- Mozambique – Education Sector Strategic Plan II (ESSP II) 2005–2009: draft. Maputo, MINED, 2005. (<http://planipolis.iiep.unesco.org/upload/Mozambique/Mozambique%20ESSP%20II.pdf>)

1. Phase 1: Sector diagnosis

1.1 Concept, rationale, and scope

I. Concept and rationale

Sector diagnosis is the first step of the strategic planning process. It consists of the critical analysis of the status, functioning and results of the education system, with a view to identifying strengths and weaknesses.

The quality of the sector diagnosis will determine the quality of the strategic plan:

- It is the basis for identifying relevant policy goals and objectives and for selecting appropriate priority programmes.
- From a more technical point of view, it provides the baseline indicators required for monitoring the plan implementation later on.

II. Scope

The diagnosis should cover the whole sector of education, not just education services that depend on the ministry of education. In principle, the perspective should be holistic, because all levels (from pre-school to higher) and forms of education (formal and non-formal) are interrelated. In certain instances, separate sub-sector plans will be prepared (e.g. for pre-higher and higher education); yet even in such cases the various sub-sector plans have to be closely coordinated in order to be useful.

It should not be limited to the education system as such, but also cover the environment in which the system is operating. The attention given to contextual factors is an essential characteristic of strategic planning. In an open system such as education, the interactions with the global society are a crucial determinant of its development.

It should not be limited to an analysis of the current situation but include an analysis of past and, to a certain extent, future trends. Trend analysis is essential to understanding the dynamics of educational development. A simple static analysis of the current situation would produce results that are difficult to interpret. For example, a secondary school net enrolment rate of 70% in 2008 could be positive or negative: positive if it was 60% five years ago, negative if it was 75%.

1.2 Analytical framework for education sector diagnosis

An analytical framework for carrying out a comprehensive sector diagnosis is presented in *Box 3* and briefly commented upon.

Box 3. Analytical framework for education sector analysis

- I. Context analysis
 - Macro-economic context
 - Demographic context
 - Socio-cultural context
 - Politico-institutional context
- II. Analysis of existing policies
- III. Analysis of the education system performance
 - Access
 - Internal efficiency
 - Quality
 - External efficiency
 - Equity
- IV. Analysis of the management capacity
- V. Analysis of cost and financing

I. Context analysis

Macro-economic context

With a particular emphasis on: past and future economic growth trends, government revenues and budget, and employment trends.

Demographic context

With a particular emphasis on: population growth by specific age groups (school age population), issues of geographical distribution and population density, and issues of internal and external migration.

Socio-cultural context

With a particular emphasis on: distribution of wealth, linguistic and cultural differences, and minority groups.

Politico-institutional context

With a particular emphasis on: the role of the state and the private sector, the territorial organization of the government administration and issues of decentralization, the public service situation.

II. Analysis of existing policies

This involves analysis of explicit education policies where they exist (including implicit policies as reflected in the practical decisions made by the government and in the choice of ongoing education development projects); the overall development policies which have a direct impact on the education policies (e.g. policies reflected in Poverty Reduction Strategy Papers and/or National Development Plans); and the international commitments made by the government (e.g. MDGs, EFA Goals, Salamanca Declaration).

III. Performance analysis of the education system

Access

Analysis of the coverage of the education system by level and type of education; the relative importance of the provision of education services by different organizers (public, private, community based, etc.); and the accessibility to different education services in terms of physical accessibility (distance from schools), economic (cost of schooling) and cultural (language, religious or other cultural barriers to schooling).

Common indicators: literacy rate; apparent and net intake rates; gross and net enrolment rates; age-specific enrolment rate; transition rates; percentage of private enrolment; average distance from school; direct and indirect costs of schooling, etc.

Internal efficiency

Analysis of the extent to which students who enter a given cycle or type of education progress regularly through the system, and the cost implications of their progress.

Common indicators: repetition rates, promotion and drop-out rates; percentage of repeaters; school-life expectancy; survival rates by grade; coefficient of efficiency; years-input per graduate, etc.

Quality

Analysis of the quality of the system, in terms of:

- the quality of the inputs provided (teachers, learners, educational facilities, curricula and learning materials, pedagogical arrangements).
(*Common indicators:* distribution of teachers by qualification, gender, age; pupil-teacher ratio; distribution of classrooms by condition of the building; distribution of classrooms by availability of different types of equipment; pupil-classroom ratio; average surface available per student; number of textbooks per learner; number of periods of teaching per year);
- the processes taking place, especially at school level, to transform these inputs into results (teaching/learning practices, in-school relationships, interactions with parents and local stakeholders, interaction with the administration).
(*Common indicators:* student and teacher absenteeism; regularity of meetings of teacher associations or school management committees; regularity of supervision visits, etc.);
- the results obtained by the learners (acquisition of knowledge, skills, values and attitudes).
(*Common indicators:* pass rates at national examinations; achievement scores on standardized national or international tests, etc.).

External efficiency

Analysis of the extent to which the investment in education produces the expected social and economic benefits for both the individual learner and society. For example: correspondence between education system outputs and needs of the labour market, and between education level attained and social well-being (in terms of income, health status, fertility rate of women, etc.).

Common indicators: rate of unemployment for specific age groups by level and type of education; duration of unemployment for different categories of school leavers and new graduates; relation between level of education and income, health status, etc.

Equity

Analysis of different types of disparities (between girls and boys, different geographical areas, income groups, socio-economic categories, cultural groups, etc.), with respect to access, internal efficiency, quality and external efficiency.

Common indicators: absolute and relative gap analysis, parity indices, Gini coefficient, etc.

VI. Analysis of management capacity

Analysis of the capacity of different government structures and other major education organizers (e.g. the private sector) to manage the existing and planned education services efficiently, including the analysis of major stakeholders.

The idea here is not to carry out a full-fledged organizational audit of the Ministry (or Ministries) of Education, but rather to review relatively quickly (depending on time and resources available) the major strengths and weaknesses of the education management system at different levels of administration, with a view to identifying the major challenges that will need to be addressed (organizational and human) in order to make the system capable of implementing the forthcoming plan efficiently. In many instances, this review will serve as the basis for the preparation of a special priority action programme for reinforcing management capacities within the sector (which could in turn include a more in-depth analysis of some specific management issues). Present data collection methods and tools seldom provide the information necessary to evaluate the capacities of the organization and the effectiveness of its functioning.

Possible indicators: percentage of management staff with profiles matching their tasks; percentage of officers aware of their tasks; percentage of offices or departments with operational plans; percentage of offices with necessary IT infrastructure.

VII. Analysis of cost and financing

Analysis of public expenditure on education by level and type of education, category of expenditure, etc. Also an analysis of expenditure on education based on different sources of financing (central state, decentralized authorities, local communities, families, etc.), use of resources within and across different levels and types of education.

Common indicators: percentage of public budget (recurrent, capital) devoted to education, public expenditure on education as a percentage of GDP, percentage of public expenditure devoted to salary cost, public expenditure per student, relative importance of different sources of financing, parental expenditure on education, etc.

1.3 Organization of the sector diagnosis

A comprehensive sector diagnosis can turn out to be a major undertaking. Much will depend on the information available. In general, one does not start from scratch and can rely on a number of existing studies and reports. Furthermore, the idea is not to transform the sector diagnosis into a research programme. The objective is much more pragmatic and down to earth. It is to identify and document – mainly on the basis of the statistical and other information available and in a relatively short period of time (a few months) – the main achievements and problems of the education system, as a basis for fixing plan objectives and selecting priority programmes.

During the late 1980s and 1990s, there was a tendency to broaden the concept of sector diagnosis into what was called 'sector analysis'. At that time, sector analysis was very much promoted and directed by external development partners. It was seen not so much as a first step in the preparation of a full-fledged education sector plan by the country, but as a process that should help in building consensus between the country and the development partners about

long-term policy options and strategies. Thus, sector analysis was not limited to the diagnosis as such but also needed to include (and even culminate in) the formulation and adoption of precise policy recommendations. The preparation of a sector plan could always follow later on, but was not explicitly considered (Kemmerer, 1994). Within this perspective, sector diagnosis often implied the launching of new studies. The process might last 12 months or more and required the mobilization of considerable resources. Such expenditures of time and resources are rarely feasible today, and the launching of new studies has to be limited.

Yet, sector diagnosis remains a serious undertaking. It has to be done in a rigorous way by the ministry as a whole, under the technical leadership of the Strategic Planning Team, by the various ministry departments. The Strategic Planning Team should handle the different technical tasks of information-gathering and analysis and provide the Technical Working Groups, composed of representatives of the various ministry departments, with the necessary inputs (including guidelines, statistical information and reports, etc.) to carry out their diagnostic work.

As discussed in Education Sector Planning Working Paper 2, at this stage the Technical Working Groups will be best formed by level and type of education (early childhood education, basic education, upper secondary, technical and vocational, adult education, teacher training, etc.), complemented by a few cross-cutting groups (e.g. on management, cost and financing, etc.).

In order for the Strategic Planning Team to carry out its leading role efficiently, a clear distribution of tasks and areas of responsibility (by level of education and/or by type of competence) between its members will also be required. The different modalities of involving various categories of stakeholders and, most importantly, the decentralized levels of management have also been discussed in Working Paper 2.

1.4 Main steps in the sector diagnosis

The diagnostic work involves three major technical steps: information gathering, information processing and analysis, and preparation of the diagnostic results.

Step 1. Information gathering

Use fully all existing sources of information

The statistical data will form the foundation for the sector diagnosis. With few exceptions, such data (or at least basic education statistics) are now easily available in most ministries of education, even if their coverage and quality is not always adequate.

But, as mentioned above, the information to be gathered extends beyond statistical data and should also include the various documents (studies, research reports, project documents, etc.) containing both quantitative and qualitative information about education development in the country. Such documents are particularly useful for giving a meaning to some of the statistical findings and, more generally, for providing a more in-depth understanding of what is going on in the sector. Unfortunately few ministries of education have a well-organized documentation centre in which such reports and documents can be easily identified. This means that gathering this type of information often requires a special effort and can be very time-consuming.

Among the most important sources of information to be considered are the following:

- national demographic census data and projections;
- results of national sample household surveys;
- national policy documents and plans;
- documents and reports from other relevant ministries (finance, planning, health, etc.);
- yearly school census data and, more broadly, the Education Management Information Systems (EMIS) of the ministry of education;
- data about national examinations and tests;

- reports produced by various donor agencies;
- various research and survey reports;
- others (inspection reports, teacher records, etc.).

Weigh carefully the additional value of collecting new data

In most cases, education sector plans are prepared under pressure, and little time and resources are set aside to undertake new studies. Consequently, the additional value of collecting original new information will have to be carefully weighed. And whenever such collection of new information is judged to be indispensable, the possibility of using a small sample-based study, rather than a large-scale survey, should always be considered. In many instances, combining systematic field observation of a limited number of cases and in-depth interviewing of (and/or focus group discussion with) a limited number of specialists and stakeholders can go a long way in helping planners to clarify pending issues and better understanding of specific education problems and realities. In post-conflict and post-disaster countries (in which basic statistical information is generally scarce), consultation of a limited number of knowledgeable actors will be particularly important.

Use the opportunity of the strategic plan preparation to build up or expand and reinforce the information system of the ministry

A good information system is an essential condition, not only for the preparation of a good strategic plan, but also for an efficient monitoring of the plan's implementation. Building up such a system, which covers statistical as well as non-statistical information, is a long-term undertaking. Much progress has been made during recent years in developing computerized statistical information systems in education ministries. However the scope of most systems is still limited to regular school census data, while learner achievement data, financial management data and human resource management data are either not covered or stored in different data bases that are often not compatible with each other. The experience of several countries, even low-income countries such as Cambodia,² has shown that these shortcomings can be overcome relatively easily, provided that there is the political will and that continued support is provided over a number of years.

Setting up and maintaining a comprehensive and up-to-date non-statistical information base seems to be a more difficult challenge, since it is generally linked to a rather widespread tradition of deficient record-keeping and poor sharing of information within ministries of education. In any case, and whatever the difficulties, it is most advisable to use the plan preparation effort as an opportunity to create awareness about the importance of a good information base and to lay the foundation to build up (or expand and reinforce) both the statistical and non-statistical information systems within the ministry.

2. Since Cambodia emerged from a long period of conflict and war in the early 1990s, its Ministry of Education has paid systematic and steady attention to setting up a proper planning and management information system. Since 1995, UNICEF and Sida have provided sustained support for the acquisition of the necessary hardware and software and for building up national expertise (since 1995, 14 specialists have been trained at the IIEP Annual Training Programme). As a consequence, today Cambodia is one of the few low-income countries with a fully integrated, active and efficient EMIS, capable of providing, on the spot, the Ministry, the development partners and even each individual school with a consistent and up-to-date supply of education statistics and indicators. The availability of a good EMIS has made systematic planning of the education system possible since the beginning of the last decade and has played a key role in moving towards better donor alignment and harmonization.

Step 2. Information processing and analysis

The analytical framework presented above will be used for processing and analysing the existing information.

The analysis of statistical data should be done on the basis of a limited number of carefully selected indicators. It will involve drawing up tables, establishing time series (including a first estimation of future trends), computing means, ratios and growth rates, measuring disparities, etc. In all cases, the use of graphs and cartographic illustrations is highly recommended as the best way of making statistical information more easily understandable.

The processing and analysis of the non-statistical information is generally more complex, since the amount of documents and reports available can be quite sizeable, and the information provided in them is not always clear-cut and sometimes redundant or even contradictory. This is why a detailed screening of the different documents has to be carried out with a view to identifying the major issues discussed, checking coherence between sources, and regrouping and ordering the information thus obtained by theme and level of education, using the same analytical framework matrix presented above.

Although the processing and analysis of statistical and non-statistical data will generally be the responsibility of two different sub-teams within the Strategic Planning Team, close interaction and regular exchange of findings will need to take place between the two sub-teams in order to arrive at a single coherent end-result.

Step 3. Preparation of the diagnostic results

At the end of Step 2, the Strategic Planning Team should be able to provide the Technical Working Groups with the necessary statistical and other inputs (which can take the form of diagnostic reports by level and type of education), which should allow the Working Groups:

- to identify and document the major strengths and weaknesses of the education system; and
- to make some draft proposals about future objectives to be pursued and possible priority actions to be taken. (At this stage the identification of major objectives and priority action areas is still preliminary and these will have to be further tested and validated during the next planning stages.)

A preferred tool for arriving at a consensus on the main strengths and weaknesses (but which should never be a shortcut or a substitute for systematic data analysis) is a SWOT Analysis.³ Developed in the 1960s, SWOT Analysis is a strategic planning technique for identifying internal Strengths and Weaknesses and external Opportunities and Threats of business organizations. As was the case with other strategic planning techniques, its application gradually spread to other types of organizations and the public sector. The SWOT analysis is, by definition, a collaborative tool for facilitating collective brainstorming in workshop sessions. A SWOT will be all the more productive when it is based on a solid, objective data analysis and starts from the identification of specific objectives to be reached.

3. For more information about the use of the SWOT Analysis refer to the following web links:
[www.businessballs.com/swotanalysisfreetemplate.htm],
[http://en.wikipedia.org/wiki/SWOT_analysis],
[www.rapidbi.com/created/SWOTanalysis.html#howtodoaswot].

For the application of SWOT to the education sector see UNESCO, 2006. A practical example of the results of a SWOT Analysis can be found in the *National Action Plan Education for All: Ghana 2003–2015*.

2. Phase 2: Policy formulation

Policy formulation has to do with defining broad, long-term policy orientations and goals (which might well extend beyond the medium-term plan) and with selecting major strategies for reaching those goals. The education policy will be, by definition, closely linked to the overall development policy of the country.

The policy formulation will be based partly on a review of existing policies and partly on the results of the sector diagnosis. The review of existing policies should be carried out at the same time as sector diagnosis. It can be done in parallel with the sector diagnosis or be combined with it. The latter option (which is the one taken in this working paper) will facilitate the mutual enrichment of both activities. A better understanding of policies should help with interpreting the results of the education system performance, while the results should help in assessing the value of specific policy options that have been taken.

As stated above, the policy review involves analysis of:

- explicit education policies when they exist;
- implicit policies as reflected in the practical decisions made by the government and in the choice of ongoing education development projects;
- the overall development policies that have a direct impact on the education policies (e.g. policies reflected in Poverty Reduction Strategy Papers and/or National Development Plans); and, finally,
- the international commitments made by the government (e.g. MDGs, EFA Goals, Salamanca Declaration, etc.)

The formulation of the new policies (or reformulation of existing ones) is an iterative process that implies a close interaction between the planning experts and the policy-makers. While it should be possible to agree on the broad policy options rather quickly, a more refined definition of policy goals and strategies can take much more time and might continue evolving during the subsequent planning phases and, in particular, while the results are obtained during Phases 3, 4, and 5.

3. Phase 3: Selection of key plan objectives and priority areas

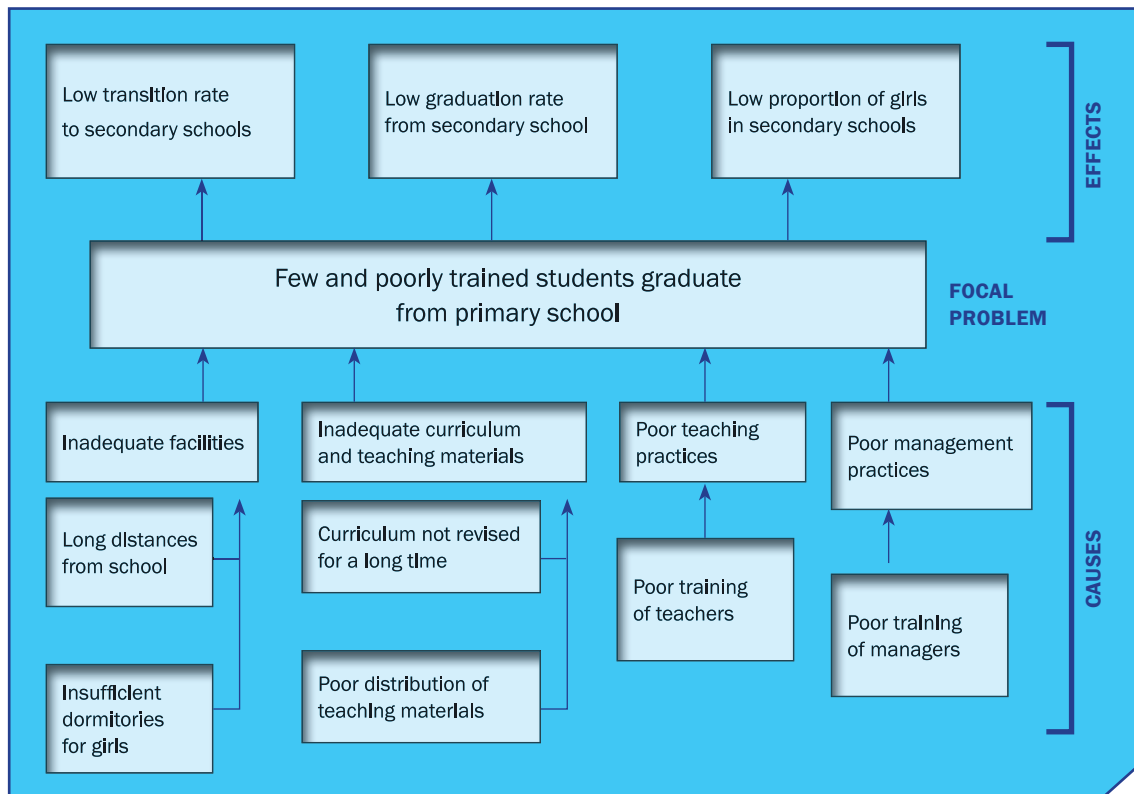
This phase is intimately linked to Phases 1 and 2. The identification of the main strengths and weaknesses resulting from the sector diagnosis, together with the broad policy orientations retained during the policy formulation, will serve as the basis for setting the main medium-term plan objectives and for selecting the priority programmes.

3.1 Moving from problems to objectives

There is no standardized technical procedure to move from the diagnosis of strengths and weaknesses to the identification of objectives and priority programmes. This is because the relationship between causes and effects in the education sector is generally complex and difficult to disentangle. Thus, although a problem might have been clearly identified, the appropriate action to be taken for solving it may be less obvious. For instance, a high drop-out rate in upper primary schools can have several different causes. These could include: physical (high number of 'incomplete' schools), educational (poor quality of education service provided), economic (high direct cost of schooling and/or opportunity cost, lack of employment perspective), socio-cultural (withdrawal of girls at a certain age), as well as other factors. Moreover, most likely there is no single cause of the problem, but rather different causes that interact at the same time, to different degrees and in different circumstances. Of course, international research has gradually given us a better understanding of many education problems, and, in an increasing number of cases, country-specific studies are available to throw further light on their causes. Nevertheless, even in cases where objective empirical evidence is available as a basis for decision-making, the best action to be taken for addressing a specific education problem is seldom straightforward and not requiring discussion. Several solutions can be imagined, depending on the professional point of view (e.g. different opinions among economists and pedagogues about reducing class size), the relative weight given to different causes affecting the same problem, the ideological position taken, etc. This is why fixing objectives and priority actions will always remain a question of best judgement resulting from discussion and consensus building. And this is exactly what has to take place in the Technical Working Groups on the basis of the objective data and empirical evidence provided by the Strategic Planning Team.

A tool that can facilitate this move from problem identification to objective setting is a 'problem tree', normally to be transformed into an 'objective tree' (European Commission, 2004; Chang, 2006). Part of the Logical Framework Approach (LFA), the problem tree is used to help analyse the different problems and order them around a focal problem in a cause-effect relationship. As with the SWOT analysis, the problem tree construction is a collaborative technique used for systematizing group discussion and reaching consensus. Cards are generally used for group members to write down individual problem statements which are then sorted out in a cause-effect relationship on a visual display. After several rounds of individual statement writing, the output is a graphical presentation of interrelated problems differentiated in a hierarchical order. The effects are presented on top of the focal problem, and the causes underneath. The graph gives an idea of what the group considers to be the main causes and effects of the focal problem. It helps in understanding the context and interrelationship of problems, and the potential impact of specific actions that could be undertaken (*Figure 1*).

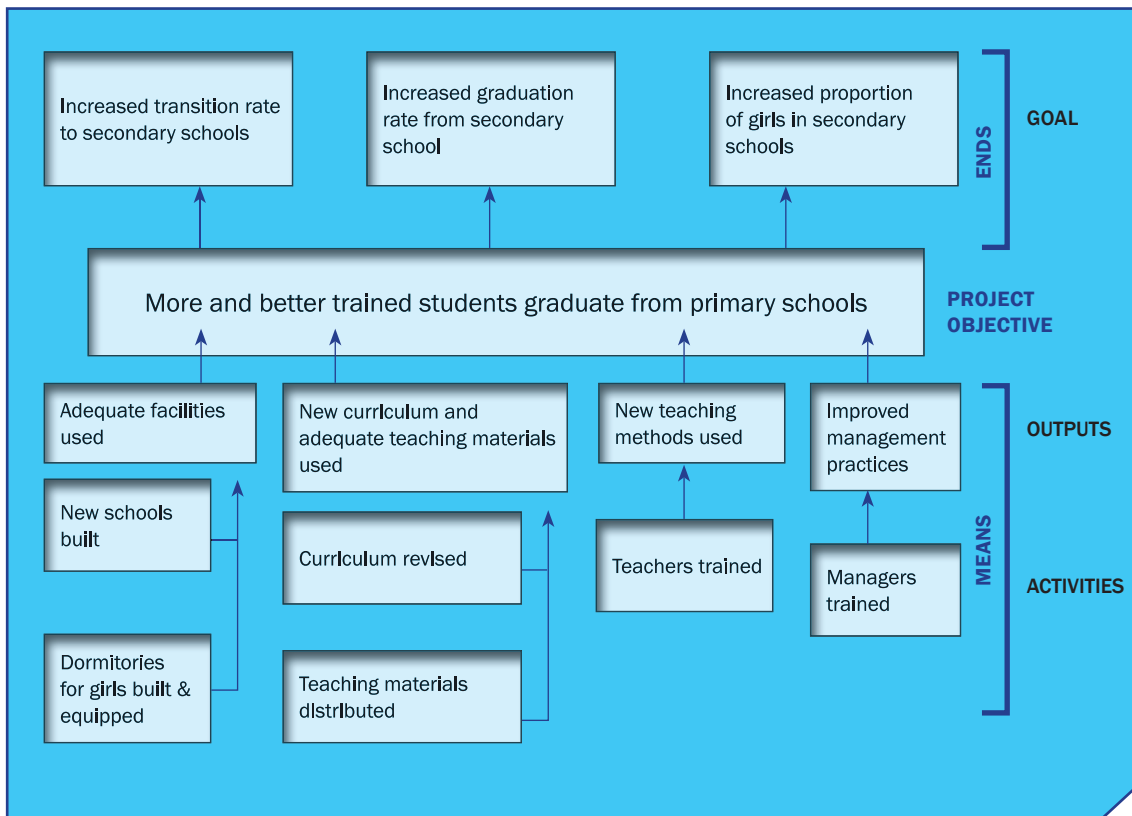
Figure 1. Example of a 'problem tree'



The 'problem tree' is then transformed into an 'objective tree'. The problems are converted through simple rewording into goals, objectives and outputs. The chart then shows a 'means-ends' relationship of possible objectives that could be pursued as part of the sector plan (Figure 2).

It is important to bear in mind that the result of a problem and objective tree is not the equivalent of empirical evidence, but reflects the collective opinion of the people involved in constructing these trees. The quality of the product will therefore directly depend on the profile of those individuals. Hence the importance of carefully selecting the members of the Technical Working Groups and of making sure that they are composed of the right specialists with the appropriate technical knowledge and experience.

Figure 2. Transformation of 'problem tree' into 'objective tree'



3.2 A first feasibility testing

It is not enough to make sure that the objectives and the priority areas selected are relevant. They also have to be realistic, and therefore a rough feasibility checking has to start already at this early stage. However feasibility checking should not be limited to the financial aspects, as is often the case. Different questions have to be answered concerning different feasibility dimensions, among which are the following.

I. Internal consistency

- ➔ To what extent are the different objectives and priority actions coherent and compatible with each other?

For example, compatibility between the objectives in terms of expansion of enrolments and the outputs expected from the school construction and teacher training programmes.

II. Financial feasibility

- ➔ To what extent are the estimated costs of what is being proposed compatible with the financial resources expected to be available?
- ➔ What are the implications of the capital investments foreseen for the recurrent budget, and to what extent are these implications sustainable in the longer term?

III. Management feasibility

- To what extent can the implementation of what is being proposed be efficiently ensured by the management capacities of the ministry and its partner organizations?

For example: Will the education ministry services in charge of school construction be capable of efficiently handling the control of all the new constructions foreseen? Or even: Is the building capacity available in the country (including the capacity to take part in tendering procedures) sufficient to carry out the total volume of the proposed construction programme?

IV. Socio-cultural feasibility

- To what extent are some of the action programmes adapted to the mindset and expectations of the main stakeholders (including trade unions and political parties) and, in particular, families and teachers?

This type of question is not often explicitly raised, although it is particularly important when it comes to programmes of a more qualitative nature such as those concerning in-depth curriculum reform, drastic changes in pedagogical approaches, or changes in the use of teaching languages. In all such cases, incompatibility between the content of the reforms and the expectations and mindset of the main stakeholders is bound to lead to conflict and can have a disastrous effect on the reform implementation, as amply demonstrated by many negative reform experiences.

Through successive corrections this first, rough type of feasibility testing should help the Working Groups to come up at the end of Phase 3 with a rather firm, realistic, and coherent set of objectives and priority programmes, even if the feasibility checking process will continue and lead to further adaptation and fine-tuning during the subsequent phases and, in particular, during the phases of programme design and more precise estimation of cost and finance implications.

The simulation model should be used to carry out the feasibility checking concerning the first two dimensions, which means that the preparation of the model has to be initiated at the very beginning of Phase 1 in order to be ready for its use during Phase 3. The results of the diagnosis of the analytical framework should help in assessing the third dimension, concerning management feasibility, while the fourth, concerning the socio-cultural feasibility, remains the most difficult and delicate to assess. In any case, it should be clear that both management capacities and socio-cultural readiness are not static realities but realities that can be changed and influenced. Feasibility testing therefore should not lead to abandoning all ambition and taking zero-risk. Good plans need to be realistic and at the same time ambitious and risks have to be taken but need to be calculated and mitigated. Management capacities may not be enough at the beginning of the plan but can be expanded and reinforced through a special priority programme, and, in the same way, readiness for change among the teachers and/or parents can be stimulated and enhanced through specific interventions during the plan implementation.

3.3 An opportune moment for formal consultation of stakeholders

The end of this phase is the appropriate moment to launch a broad consultation process of the different categories of stakeholders in order to share with them the results of Phases 1, 2, and 3, and also to invite their comments and suggestions regarding:

- the main challenges ahead,
- the national policy goals and orientations selected, and
- the key plan objectives and priority areas identified.

4. Phase 4: Design of priority programmes

Once the plan objectives and priority action areas have been fixed, specific priority programmes should be designed for reaching the objectives, with indication of precise targets to be achieved and outputs expected, key activities to be completed, corresponding timelines, indicators, the units responsible for each activity, and so on.

This phase is generally the most time-consuming, including the time needed to brief and train the Technical Working Group members in programme design techniques.

Before initiating this phase, some reshuffling of Working Groups might be required, in order to adapt their number and composition to the list of priority programme areas that have been selected, some of which will be level-specific, while others will be cross-cutting, and possibly along different lines from those retained for the diagnosis.

4.1 Programme design and the Logical Framework Matrix (LFM)

The method most commonly used for programme design is the Logical Framework Approach (LFA), a highly structured and systematic method of analysing problems and defining objectives (which includes the problem and objective trees, explained in the previous section) and then of selecting and organizing the relevant activities for reaching the objectives, following a strict logical order. For each programme, the LFA should normally result in the production of a Logical Framework Matrix (LFM), also called a 'LogFrame', which summarizes the programme in a limited number of columns and rows and can be accompanied by more detailed work plans or activity schedules.

The structure of a typical LFM is presented in *Table 1*.

Different LFA guidelines and manuals are available. The presentation in *Figure 3* is derived from the *European Commission Aid Delivery Methods: Project Cycle Management Guidelines* (European Commission, 2004). It is important to be aware that, although the logic is always the same, there is no standardized use of terms such as goal, objective, purpose, output, result, etc. Depending on the document, one can find the following terms being used as synonyms of those in *Table 1*:

- *Overall objective*: goal, development objective
- *Purpose*: development objective (as used in the *LogFrame Handbook*, World Bank, 2005), programme objective, specific objective
- *Results*: outputs, immediate results
- *Activities*: component activities (as used in the *LogFrame Handbook*), actions

It is therefore crucial before embarking on the programme design to agree on the terminology that will be used and the definition of these concepts, so as to ensure coherence between the products of the different Working Groups.

Table 1. Typical structure and content of a Logical Framework Matrix

Programme description	Indicators/ Targets	Source of verification	Assumptions
<p>Overall objective</p> <p>The broad development <i>impact</i> to which the programme contributes at a national or sectoral level (provides the link to the policy and/or sector programme context)</p>	<p>Measures the extent to which a contribution to the overall objective has been made</p>	<p>Sources of information, and methods used to collect and report it (including who and when/how frequently)</p>	
<p>Purpose</p> <p>The development <i>outcome</i> at the end of the programme, specifically the expected benefits to the target group(s)</p>	<p>Helps answer the question: 'How will we know if the purpose has been achieved?'</p> <p>Should include appropriate details of quantity, quality and time</p>	<p>Sources of information, and methods used to collect and report it (including who and when/how frequently)</p>	<p>Assumptions (factors outside the programme management control) that may have an impact on the purpose-objective linkage</p>
<p>Results</p> <p>The direct <i>outputs</i> (goods and services) that the programme delivers, and which are largely under project management's control</p>	<p>Helps answer the question: 'How will we know if the results have been delivered?'</p> <p>Should include appropriate details of quantity, quality and time</p>	<p>Sources of information, and methods used to collect and report it (including who and when/how frequently)</p>	<p>Assumptions (factors outside the programme management control) that may have an impact on the result-purpose linkage</p>
<p>Activities</p> <p>The tasks that need to be carried out to deliver the planned results</p> <p>(Optional in the matrix itself, can be separate)</p>	<p>A summary of resources/means may be provided in this box</p>	<p>A summary of costs/ budget may be provided in this box</p>	<p>Assumptions (factors outside the programme management control) that may have an impact on the activity-result linkage</p>

4.2 Different steps to complete an LFM

The completion of a Logical Framework Matrix (LFM) has to follow a certain sequence, even if the whole process is iterative and the different steps to be taken are not linear.

Step 1: Completing the programme description (Column 1)

On the basis of the work completed during Phase 3, it should not be difficult to agree on how to state the overall objective (or goal) and the programme purpose (or programme objective). From there, the results (or outputs) expected and the activities to be completed in order to obtain each expected result have to be worked out. The idea is to start from the purpose statement and work downwards following a 'means-end logic', asking successively two questions:

1. If we wish to achieve the purpose of the programme, what are the different results to be produced?
2. What are the activities to be carried out in order to get each specific result delivered?

Detailing the expected results and the activities required to reach the programme purpose might need considerable discussion and brainstorming in the Working Groups. It is always advisable to explore different alternatives before ending up with the final programme design.

A few problems that often occur during the process might require further explanation. First, some programmes can be rather big and complex and so might need to be broken down into components under which different results are regrouped. The breakdown can be done on the basis of different criteria such as the technical focus or area of competence, the geographical focus, or the management responsibility. In this case, the structure of the programme will have an additional layer between purpose and result, which should make the monitoring of the programme implementation easier later on. For example a quality improvement programme can have a curriculum development component, a teacher training component, and a school rehabilitation component.

Second, big programmes can have multiple purposes (or programme objectives). There is nothing wrong with stating them separately. However, experience shows that, in order to keep the whole programme effort focused, it is preferable to summarize these in one single purpose statement and clarify the different dimensions through the formulation of different indicators in Column 2 (see practical example in *Table 3*).

Third, it is difficult to appreciate the level of detail for the listing of activities. The general principle is that only key activities should be listed since we are in the process of preparing a medium-term plan and not a detailed annual operational plan in which further detail will be needed. Activities can always be further broken down depending on the point of view and the level of responsibility. The point of view taken when preparing a medium-term plan is that of a policy-maker/planner and not of a project manager/ implementer. *The Logical Handbook* (World Bank, 2005), for example, proposes to limit the number of activities to be listed to between 5 and 10, and therefore uses the term 'component activities', which means an 'aggregate set of activities' such as training, provision of equipment, etc.

However, the requirement that the activities listed in the LFM should be limited, and that implementation details should not be included in the matrix, does not mean that no further details are needed. In fact, before being aggregated in general key activities, the more detailed activities have to be discussed and listed separately at a level that is precise enough to allow for cost estimates to be made during the next phase. These detailed activities should further serve as a basis for preparing separate work plans and activity schedules with indication of proper sequencing, timing and units responsible (e.g. using a Gantt chart).⁴

4. For more information on Gantt charts see European Commission, 2004.

Step 2. Clarifying assumptions (Column 4)

Assumptions are external factors (political, economic, physical, etc.) that can have an impact on the implementation of the programme while being outside the control of the project management. Most of those factors will already have been identified during the diagnostic phase, but others might come up during the detailed programme design discussions. External factors can have an effect on the programme that is positive (e.g. an awareness-raising campaign organized by an external agency) or negative (e.g. a quick turnover of Ministry staff). But since both are outside the programme management control, both imply a risk for the successful programme implementation. The risk of each factor has to be assessed (e.g. a subjective rating on a five-point scale, from very low to very high) and possible mitigating factors explored (e.g. maintaining close dialogue with the external awareness-raising agency). The assumptions at activities level have to be defined first, followed by those at the higher levels of results and programme objective. Once the different assumptions have been assessed, and are judged to be (on the whole) reasonable, the assumption column should serve as the basis for careful risk monitoring during the programme implementation.

Step 3. Indicators and sources of information (Columns 2 and 3)

Making objectives SMART

Indicators are statistical measures by which objectives are translated into operational measurable terms. They should help in making objectives 'SMART', which means in making them:

- *Specific*: indicating with precision what should be achieved;
- *Measurable*: quantifiable without exceptional investment in data gathering;
- *Achievable*: attainable with the human, material, financial resources available;
- *Relevant*: useful for achieving the overall objective or goal;
- *Time-bound*: including time limits in which to be achieved.

An objective (as stated in Column 1) can be formulated in rather general terms. In order to make the objective measurable, a specific indicator, or several indicators, will have to be identified, indicating exactly what is to be measured. And for each indicator a precise target will have to be fixed – that is: the expected level of result (or indicator value) to be achieved by a specific date. This in turn implies the identification of baseline values against which progress can be assessed later on.

An example:

- *Objective*: to reduce repetition of learners in primary school
- *Indicator*: the average repetition rate in primary school
- *Target*: to reduce the average repetition rate in primary school from 15% in 2008 (baseline value) to 7% by 2013

As a general rule, the way of transforming a broadly formulated objective into a precise target is to specify quantity, quality (when relevant), and time.

An example:

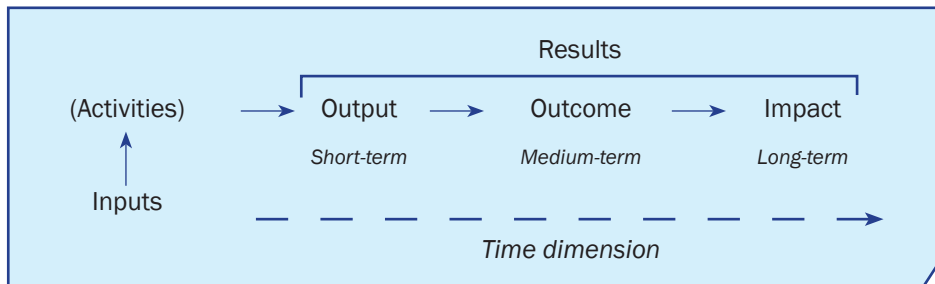
- *Objective*: to develop and implement teacher in-service training
- *Indicator*: the percentage of teachers trained
- *Target*: to ensure that 100% teachers (quantity) have received a 2 weeks training course on active learning (quality) by 2011 (time)

In the LFM, the indicator column then not only stipulates the indicator as such but at the same time the target or indicator value to be achieved by a specific date. In that way the indicators column will play a crucial role in monitoring and evaluating the plan implementation, since it will give a clear basis for answering the question as to what extent objectives are being achieved.

Different types of indicators

Within the LFA, indicators are classified according to their relationship with the different hierarchical levels of goals, objectives, outputs and activities (inputs) within the programme design, which actually corresponds to classification along a results chain (Figure 3).

Figure 3. The results chain



Input indicators relate to the activities: They measure the human, financial, physical, and other (administrative and regulatory) resources provided for implementing the plan. *E.g.: budget devoted to education, cost per student, decree on school boards.*

Output indicators relate to the direct results: They measure the immediate and concrete results of the different activities implemented and inputs used (tangible immediate results). *E.g.: number of schools built, number of teachers trained.*

Outcome indicators relate to the purpose or programme objective: They measure the intermediate results or consequences of output at the level of the beneficiaries (intermediate results). *E.g.: school enrolment rate, school retention rate, learner achievement.*

Impact indicators relate to the overall goal or development objective: They measure the long-term and aggregated results or changes at the level of the beneficiaries (long-term results). *E.g.: literacy rate, relationship between education level and income.*

The following observations may be made in relation to these different categories of indicators:

- The four types of indicators have to be linked together to be meaningful and avoid misinterpretation. *E.g.* the number of schools built (output) is not a good performance indicator, if it is not linked to resources used (input) and to the increase in enrolment (outcome).
- Different levels of management are interested in different types of indicators. *E.g.* policy-makers and development partners will be mainly interested in outcome and impact indicators, whereas implementers will equally be interested in input and output indicators.
- The same indicators can be classified differently depending on the plan design. *E.g.* per pupil allocation allotted to schools can be a simple input (if there is no objective of change) or an output (if there is an objective of changing the allocation in the plan).

For each indicator, the source of verification (Column 4) should be considered when the indicator is being formulated in order to make sure that the necessary information will be available with a reasonable investment of time and resources.

Table 2 (from the *European Commission Aid Delivery Methods: Project Cycle Management Guidelines*) shows the sequence to be followed when completing a Logical Framework Matrix.

Table 2. General sequence of completing the LFM

Programme description	Indicators	Sources of verification	Assumptions
Overall objective 1	8	9	
Purpose 2	10	11	7
Results 3	12	13	6
Activities 4 (Optional inclusion in the matrix)	(Not included)	(Not included)	5 (Optional inclusion in the matrix)

4.3 Practical examples of an LFM

Table 3 gives a practical example of an LFM, adapted from a World Bank Project given in *The LogFrame Handbook* (World Bank, 2005).

Table 3. Primary Education Improvement Programme

Project description	Indicators/Targets	Source of verification	Assumptions
<p>Goal</p> <p>1. More and better trained students enrol and graduate from secondary schools</p>	<p>1.1 Transition rate from primary to secondary schools increases from 27% in 1994/95 to 37% in 1999/2000, and 45% in 2005</p> <p>1.2 Percentage of students graduating from secondary schools increases from 45% in 1994/95 to 65% in 2005</p> <p>1.3 Percentage of secondary school students achieving minimum scores in standardized examinations increased from 31% in 1994/95 to 56% in 2005</p> <p>1.4 Proportion of girls enrolling in secondary schools increased from 22% in 1994/95 to 45% in 2005</p>	<p>1.1 National Educational Independent Survey</p> <p>1.2 National Educational Independent Survey</p> <p>1.3 National Educational Independent Survey</p> <p>1.4 National Educational Independent Survey</p>	
<p>Programme objective</p> <p>1. More and better trained students graduate from primary schools with more gender equity</p>	<p>1.1 Retention rates in primary schools reduced from 25% in 1994/95 to 18% in 2001</p> <p>1.2 Percentage of students achieving minimum scores in standardized examinations increased from 35% in 1994/95 to 52% in 2001</p> <p>1.3 8,000 additional students from the 10 regions with the lowest coverage enrol in primary education schools (with at least 40% being girls) by 2001</p>	<p>1.1 National Educational Independent Survey</p> <p>1.2 National Educational Independent Survey</p> <p>1.3 National Educational Independent Survey</p>	<p>1. Students have support from their families to enrol in secondary schools and to continue their education</p> <p>2. Secondary schools have excess capacity to provide education from an increased number of enrolments</p>

Project description	Indicators/Targets	Source of verification	Assumptions
Outputs			
1. Adequate, quality classrooms are used by students in the target groups	1.1 The student-classroom ratio is at least 20/1 in all areas 1.2 The walking distance to school is no more than X minutes in all areas 1.3 At least 90% capacity levels are reached in all schools built	1.1.1 Quality assessment of construction of classrooms 1.2 Audit of walking distance from villages and placement of schools	1. Teachers support and adopt new and improved curriculum, pedagogic materials, and teaching methods
2. New and improved curriculum and pedagogic materials are used in the classrooms	1.4 60% of the new additional dormitory rooms are allocated to girls by 1999 2.1 85% of schools receiving new textbooks and materials are in use in the classroom within 2 months after delivery	1.3 Review of school use 1.4 Review of allocation to girls	2. Transportation system allows children to get to schools in less than one hour
3. New teaching methods are used in the classroom	2.2 The newly developed textbooks meet professional criteria for new and pedagogic materials	2.1 Sampling of schools and use of textbooks	3. Children are well fed when they arrive at school
4. The administrative ability to school directors and management is improved	3.1 At least 80% of teachers attending the teacher's training use the new methods in their classroom work within X months of graduation from courses 3.2 3,500 teachers, 220 directors, and 200 pedagogic advisors pass Level II evaluation test 4.1 95% of attendees of the training pass Level II examinations upon course completion 4.2 At least 75% of sample of attendees pass Level IV evaluations 3 months after completion of course work	2.2 Evaluation of quality of textbooks and materials 3.1 Classroom evaluation audit 3.2 Training documentation and records 4.1 Training Level II Evaluation Documentation 4.2 Training Level IV Evaluation	4. School directors and advisors implement skills development programmes 5. Children have support and incentives from their families to enrol in primary schools

Project description	Indicators/Targets	Source of verification	Assumptions
<p>Component Activities</p> <p>1. CLASSROOM RENOVATIONS</p> <p>1.1 Determine school needs for construction and rehabilitation</p> <p>1.2 Construct schools</p> <p>1.3 Equip schools</p> <p>2. CURRICULUM REVISIONS</p> <p>2.1 Revise general primary education curriculum to incorporate new skills and requirements from secondary schools</p> <p>2.2 Develop pedagogic material to support the new curriculum</p> <p>2.3 Distribute new curriculum implemented and pedagogic materials to 30% of the schools in 1997, 60% in 1998, and 100% in 1999</p> <p>2.4 Provide 521,000 textbooks to students on a rental basis</p> <p>3. TEACHER TRAINING</p> <p>3.1 Develop new teacher training methods and courses</p> <p>3.2 Train 3,500 teachers, 220 directors and 200 pedagogic advisors in new teaching skills</p> <p>3.3 Provide relevant materials needed for teachers' continued application of skills in the classroom</p> <p>4. ADMINISTRATION</p> <p>4.1 Train 220 school directors in management and planning techniques</p> <p>4.2 Train 150 central and 250 regional staff from public and private schools in management planning techniques</p>	<p>Inputs (financial)</p> <p>CLASSROOM RENOVATIONS \$89M</p> <p>CURRICULUM REVISIONS \$10M</p> <p>TEACHER TRAINING \$15M</p> <p>ADMINISTRATION \$5M</p>	<p>Project Management Documents</p> <p>Procurement Reports</p> <p>Milestone Reports</p> <p>Financial Reports</p>	<p>1. Weather does not hinder building</p> <p>2. Political stability</p> <p>3. Incentive systems for teachers reflect desired use of new methods</p>

The example in *Table 3* (based on an actual World Bank programme) follows the strict LFM rules (World Bank, 2005). A look at the plan examples referred to above, in *Box 2*, shows that these rules are far less strictly applied in the case of education sector plans, which demonstrate considerable variation in the way of presenting programme matrices. First of all, as mentioned above, the terminology varies and can be confusing, for example when the term ‘strategies’ is used as the equivalent of ‘activities’ (Ghana). Also the level of detail varies. For example, some plans give detailed information about timing (Egypt), while others do not give any (Mozambique). Also some plans (Egypt) reserve a special column or even two columns (Ghana) for specifying the department(s) responsible for each activity. Others reserve a column for priority ranking of objectives (Grenada) or for the starting date of each activity (Ghana). Finally, none of the five plans gives any indication about sources of verification and critical assumptions (except Mozambique, for assumptions). The common characteristic, and also the most important, is that, in all cases:

- the logical framework thinking, in terms of cause-effect and means-end relationship, has been followed for moving from goals to activities; and
- a serious effort has been made to specify, each time, the corresponding indicators and targets.

These two operations relate to the first two columns of the LFM and constitute the essential ones for any LFA-based programme design, while the others can be more country-specific.

4.4 Different ways of presenting programmes

However, a programme presentation should not be limited to the simple presentation of a matrix. Even the best designed LFM in itself might not be sufficient to give a good idea of what precisely a programme is about and how it will be implemented. This is why the matrix should be accompanied by a narrative part to facilitate its understanding. In this case again, different approaches are being taken in different countries as illustrated by different plan outline examples (see *Annex 1*). In some plans, the narrative section is very short (Grenada, Ghana) and in others more elaborate (Egypt, Mauritius, Mozambique). A look at the last three of these plans gives a good idea of how a programme presentation can be structured (*Table 4*).

Table 4. Outline of programme presentation in national strategic sector plans

Mozambique	Mauritius	Egypt
Current situation (with Baseline Summary)	Situation analysis	Introduction
Achievements of previous plan	Overall goal	Main issues
Strategy	Critical challenges	Ongoing programmes
LFM	Strategic goals	Policy framework and methodology
	Summary of strategic activities	Programme presentation (narrative summary of LFM)
	LFM	LFM

The common elements in the three documents concern:

- a presentation of the main challenges the programme is going to address (situation analysis);
- the narrative presentation of the logic of intervention – that is, the strategies that will be followed to address the challenges; and
- the LFM.

In addition, and particularly in countries in which externally sponsored programmes are numerous (such as Mozambique and Egypt), a brief reminder of ongoing programmes and past achievements might also be useful.

5. Phase 5: Preparation of the cost and financing framework

To be credible and useful, a plan needs to be accompanied by a proper cost and financing framework. The cost estimates should cover all expenditures (both capital and recurrent) required for achieving the expected plan results, while the estimation of financial resources expected to be available should cover all resources (both internal and external).

The education simulation model will be used for making the cost estimates of the regular functioning of the education system by level or sub-sector of education, in line with the different targets that have been set. The cost of the priority programmes, aimed at responding to particular reform and development needs, will be calculated separately and then included in the final cost tables. In the case of the EGYPT-ANPRO model,⁵ the calculation of priority programme costs is integrated in the model itself.

The estimation of the financial resources implies the use of a different, macro-economic model that allows the projection of the total public revenues and expenditures; the medium-term sectoral budget ceilings are then fixed for the years to come. This is normally the responsibility of the ministry of finance (in cooperation with the different sector ministries) and is actually done in an increasing number of countries in the form of the preparation of a medium-term expenditure framework (MTEF).⁶

However, in countries in which such a framework is not yet available, the education ministry (ideally, in close consultation with the ministry of finance) might have to make its own rough estimates about the funds that will be available, both internal and external. Although, in the absence of an official endorsement by the ministry of finance, the financial framework will of course have less credibility, it is still preferable to no framework at all.

Even if several standard education simulation models are available, adapting any such model to the national specificities and collecting the necessary input data for making the model operational is always a time-consuming undertaking. It should start already at the beginning of Phase 1, so that first rough cost estimates for reaching the medium-term plan objectives can already take place during Phase 3.

During Phase 5, specific costs of the different priority programmes will be estimated and the overall cost of the plan (recurrent and capital) will be calculated and balanced with the estimated funds that will be available. This will involve a final feasibility testing of the plan and the calculation of the remaining funding gap, for which additional resources will have to be mobilized.

5. For more on the EGYPT-ANPRO Model, see Egyptian Ministry of Education, 2003.

6. For more on MTEF, see: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTPUBLICSECTOR/ANDGOVERNANCE/EXTPUBLICFINANCE/0,,contentMDK:20235448~pagePK:148956~piPK:216618~theSitePK:1339564,00.html>

6. Phase 6: Design of the monitoring and review system

Once the preparation of the priority programmes is already well advanced (Phase 4), the monitoring system for ensuring an efficient plan implementation can be designed. The concept of monitoring and its central role within the strategic planning approach have already been presented in Education Sector Planning Working Paper 1, *Strategic Planning: Concept and rationale*. The purpose of this section is to give some further information about what a monitoring system should entail, without entering into the technicalities of the specific tools and instruments that can be used.

Basically, when designing and writing down the monitoring system, three decisions will need to be taken: the organizational structure that will be set up, the monitoring procedures that will be adopted, and finally the key indicators that will be used.

6.1 The organizational structure

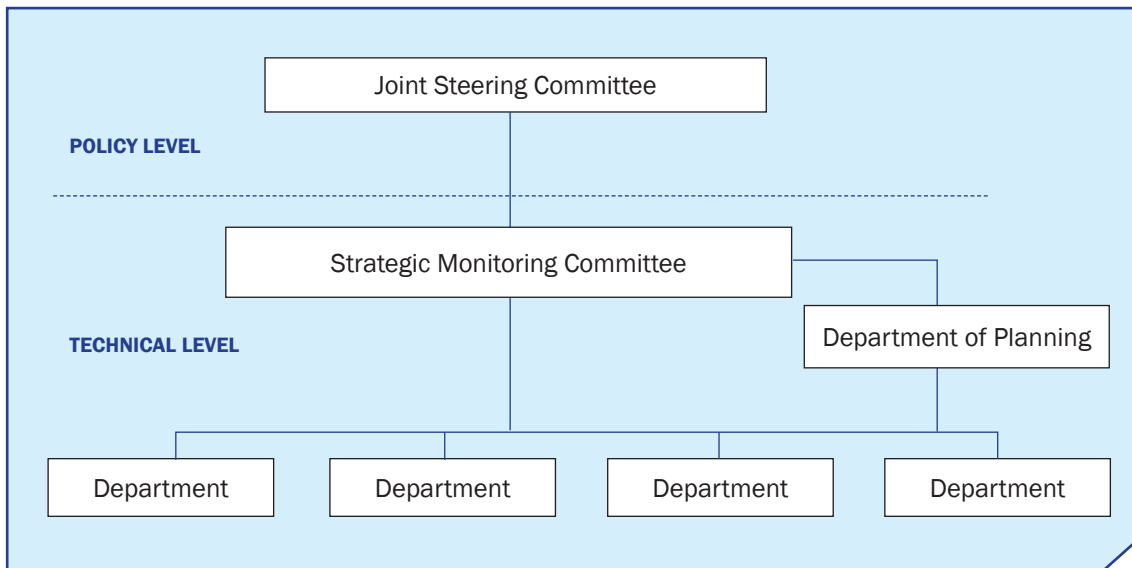
In line with the participatory approach followed for the plan preparation, it is advisable to set up an equally participatory structure for monitoring the plan implementation (*Figure 1*). In most cases, a three-layer structure is adopted that is quite similar to the one created for the plan preparation (see Education Sector Planning Working Paper 2, *Strategic Planning: Organizational arrangements*).

At a first level, each department in charge of a specific programme will be responsible for preparing Annual Operational Plans and for ensuring day to day, routine monitoring of the programme implementation. In the case of complex programmes in which different departments intervene, the department with the main responsibility should take the lead in organizing regular inter-departmental meetings to assess progress made, take corrective action, and ensure coherent programme implementation.

On top of this monitoring at department level, a Strategic Monitoring Committee is required at ministerial level in order to oversee the plan implementation in a comprehensive way – that is, to ensure information exchange and coordination between the different departments implementing programmes, and to deliberate collectively about higher level decisions to be made for keeping the plan implementation process on track. The Committee should be composed of the department directors and chaired by a high-ranking officer (e.g. the Principal Secretary) with the necessary powers to make decisions. The Planning Department should act as the Secretariat for the Committee, which should meet as often as required and at least quarterly in order to ensure a meaningful monitoring process.

At policy level the Joint Steering Committee, created during the plan preparation period (see Education Sector Planning Working Paper 2, *Strategic Planning: Organizational arrangements*), can generally be maintained as such. This Committee chaired by the Minister (or his representative) will continue serving as a linking mechanism between the Ministry and the major education development partners, and will advise the Minister on major policy decisions required at critical moments of the plan's implementation (especially on the occasion of the annual, mid-term and final reviews).

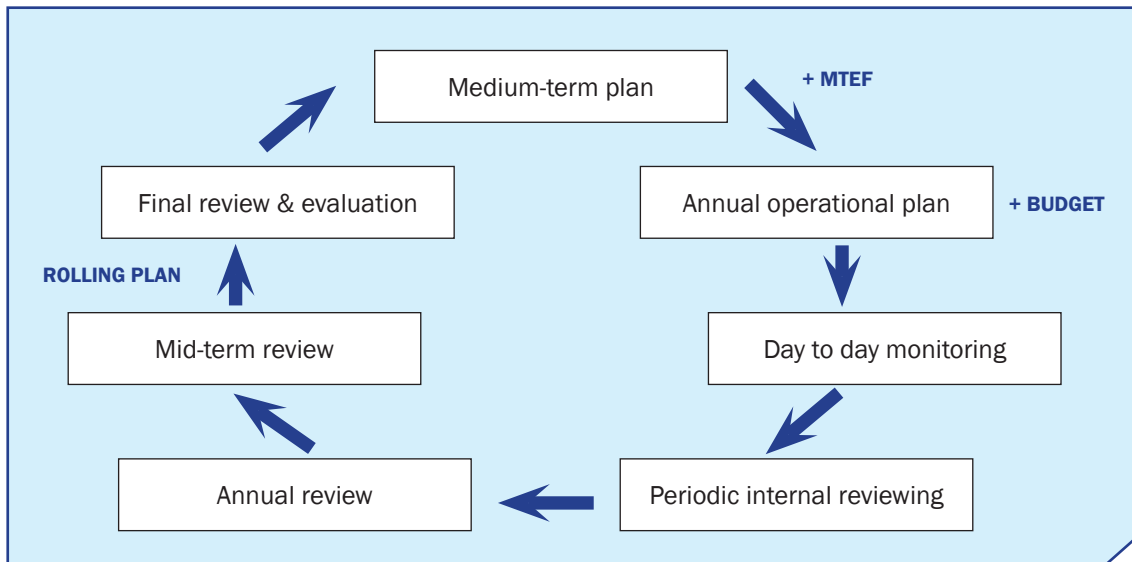
Figure 4. An organizational structure for monitoring the plan implementation



6.2 The monitoring procedure

The monitoring procedure of a Medium-Term Plan is a cyclical process that starts with the preparation of the Annual Operational Plan of the first year and continues till the preparation of the next Medium-Term Plan, as illustrated in Figure 5.

Figure 5. The Medium-Term Plan monitoring cycle



I. Preparation of an Annual Operational Plan and Budget

The preparation of Annual Operational Plans is the precondition for a successful medium-term plan implementation. Annual Operational Plans are brief technical work plans (in matrix format without much text). They should be prepared on a programme-specific basis by the departments in charge of implementing the different programmes. Operational Plans will normally follow the same structure and the same logical framework format as the programme matrices of the medium-term plan, but they will be more detailed. They will spell out: the precise targets to be reached during the specific year; the detailed activities to be carried out in order to reach the

targets; the timing of each activity; the specific departments, divisions or units in charge; and, last but not least, realistic budget estimates and financing schedules.

Of particular importance will be to create close linkages between the preparation of the annual plan and the preparation of the annual budget in order to ensure full compatibility between the two and thereby facilitate efficient plan implementation.

Of equal importance will be to fully involve the decentralized levels of administration in the plan implementation. Whenever possible, the National Medium-Term Education Plan should be translated into regional or provincial plans and even into plans for districts and local communities, as is indeed being done in some countries. The main constraint for moving in this direction of a decentralized planning model is often the lack of technical capacities, both capacities to prepare and monitor plans at decentralized levels and capacities to guide and oversee the decentralized planning process at the centre. The development of technical capacities at both levels has to be addressed. Provincial and/or district offices should receive the necessary guidance and training to do their own medium- and short-term planning within the overall national plan framework, or at least to prepare inputs for the preparation of the Annual Operational Plans.

II. Routine monitoring within implementing departments

The plan implementation will be monitored on a routine basis through structured meetings within the different departments and divisions, based on the targets and indicators contained in the Operational Plans. As decentralized planning becomes a reality, similar monitoring procedures should be put in place at decentralized levels of management.

III. Periodic reviewing by the Strategic Monitoring Committee

Short standardized written performance reports should be produced by the same departments and divisions at regular intervals using the guidelines and tools provided to them by the Secretariat of the Strategic Monitoring Committee. The reports will be submitted to the Monitoring Committee as a basis for reviewing progress, examining problems and constraints and recommending corrective action to be taken. Again, as decentralized planning takes roots, regular reports could also be requested from the decentralized levels of management.

IV. Annual review with stakeholders

During the last quarter of the fiscal year, the Secretariat of the Monitoring Committee will prepare a consolidated annual performance report on the basis of the reports prepared by the implementing departments and of other additional inputs (such as financial reports) to be produced by that relevant department.

This report will serve as the basic document for the Annual Review Meeting with stakeholders, which should offer the opportunity to jointly assess achievements and shortcomings of the plan implementation and to agree on improvements to be made in order to reach the development objectives and targets put forward by the Strategic Plan.

Each annual review meeting (and report) should be timed in such a way that it can serve as a basis for preparing the Operational Plan and Budget of the following year.

V. Mid-term review

The mid-term review is intended for examining more carefully results obtained and problems encountered and to decide whether there is a need to revise the targets and programmes foreseen for the second term of the plan. In addition to the classic, internally produced, performance report, special evaluation studies might also have to be commissioned in order to assess more systematically ongoing or completed programmes, with a view to deriving lessons from these studies for further planning and programme development.

VI. Final review and evaluation

The final performance report and evaluation studies look back at the plan as a whole. The intent of the final review, and of the corresponding Final Review Meeting with stakeholders, is not only to evaluate final impact and outcomes, their relevance, cost-effectiveness and sustainability, but also to analyse the reasons why certain results have been achieved and not others and to derive lessons for possible policy revision and for preparing the next medium-term plan.

However, some countries (such as Cambodia) do not necessarily wait until the end of the medium-term plan to prepare a new one, but opt for a rolling plan system, which means that they proceed with the revision of the medium-term plan whenever needed (e.g. after two or three years) while keeping the number of years covered by the plan constant, as long as the overall long-term policy goals are not yet achieved.

6.3 The key performance indicators⁷

As was stressed above, the monitoring of the plan implementation has to be done on the basis of objective criteria, with the systematic use of indicators. Different types of indicators for measuring inputs, outputs, outcomes, and impact will be needed according to the level at which the monitoring is taking place (refer to *Annex 2* for a practical example from Cambodia Education Strategy Plan 2004–2008). At the highest central level, monitoring will concentrate mainly on the outcome and impact of the different programmes, whereas at lower levels the monitoring process will pay more attention to input and output factors.

A considerable number of indicators will have been identified in the different programme matrices, which will serve as the basis for the various programme-specific monitoring processes going on at the different levels of management. However, for the purpose of monitoring the performance of the plan implementation at sector level, a limited set of key indicators will be needed. The selection of these indicators will have to be done taking into account a certain number of requirements, among which the following might be worth recalling:

1. Key indicators should mainly (but not exclusively) relate to *the impact and outcomes* of the education system performance. They should concentrate on measuring results of the plan in terms of overall goals and objectives, without however neglecting some important direct output indicators (e.g. number of schools built) or even input indicators (e.g. the percentage of the national budget devoted to the education sector).
2. They should be *limited in number* (preferably no more than 20). Too many indicators might be difficult to interpret and create confusion, thus taking attention away from the essentials.
3. They should *give a comprehensive picture* of the education system performance, while at the same time maintaining focus on critical challenges as reflected in the priority programmes.
4. They should provide information *not only about national averages* (as is often the case) but also about disparities within the education system performance.
5. The list and the definition of indicators should remain *stable during the plan period* (even if some fine-tuning might be necessary after some years) in order to be able to measure progress over time in a consistent way.
6. The indicators should be *easily understandable* by decision-makers and common users (avoid use of composite indicators and more sophisticated statistical measures).
7. Special care should be taken to make sure that all indicators are *commonly agreed upon* by the different stakeholders and development partners, in order to ensure smooth coordination and cooperation later on.

7. For more on key performance indicators see:
www.sida.se/sida/jsp/sida.jsp?d=118&a=3332&language=en_US&searchWords=indicators

7. Phase 7: Writing of the draft plan

There is no standardized format for writing a plan document. As can easily be seen from looking at some examples of actual plans (see the Contents tables of five different plans, presented in *Annex 1*), plans have different structures, different lengths, and different ways of presenting things. However behind this great variety, certain common key components can be identified, as follows.

- (1) **Situation analysis:** A situation analysis, which includes the identification of the main challenges ahead by level and type of education, is the result of the Diagnostic Phase. It can be presented in a specific chapter (or even occasionally in a separate document) but is often scattered over different sections. In some cases, part might be presented upfront while other parts are integrated in the detailed presentation of priority programmes. The five national plan examples, used as reference material for this Working Paper, illustrate these different ways of proceeding.
- (2) **Presentation of the education policy:** This is not always a very explicit presentation. It is sometimes mixed with a presentation of the sector plan goals and the specific programme objectives.
- (3) **Detailed presentation of the priority programmes:** This section is often entitled the 'strategic framework' section and generally contains a detailed presentation of the different priority programmes in a matrix format, with additional written information about the main problems to be addressed and the main strategies that will be followed.
- (4) **Information about plan implementation and monitoring:** This section is sometimes extremely succinct without clear indication of structures and procedures.
- (5) **Information about the cost and financing framework:** This section often includes detailed annexes and in the best of cases is integrated within a more global medium-term expenditure framework (MTEF).

Written inputs (reports, matrices, etc.) for the different sections of the draft plan will have been produced during each of the previous phases. During Phase 7, the different sections will have to be brought together in one coherent document. This has to be done by a small group of two or three members of the Strategic Planning Team who have excellent writing skills and have been closely following the whole plan preparation process.

At the end of this phase, the draft plan should be shared with the stakeholders, and in particular with the donor agencies, the Ministries of Finance and of Planning and the decentralized levels of management, in order to collect their comments and suggestions for revision and finalization.

8. Phase 8: Revision of the draft plan and official approval of the final plan document

The revision of the draft plan should take into account the comments and suggestions collected from the different stakeholders. The revised plan document will then be transmitted to the Steering Committee for its appraisal and recommendation to the Minister for its official approval.

Once the plan has been officially approved, it is recommended to organize a launching event in order to inform the public at large about the plan and to mobilize the different stakeholders for its successful implementation.

Annex 1. Example plan outlines of various countries

1. National Strategic Plan for Pre-University Education Reform in Egypt, 2007/2008 – 2011/2012

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2. Education Strategic Plan Ghana 2003–2015, Volume 1: Policy, Targets and Strategies

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• Improve the Quality of Teaching and Learning for enhanced Pupil/Student Achievement	
• Improve the Quality of Academic and Research Programmes	
• Promote Good Health and Environment in Schools and Institutions of Higher Learning	
• Identify and Promote Education Programmes that will assist in the prevention of HIV and AIDS	
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3. Government of Grenada, Strategic Plan for Educational Enhancement and Development, 2006–2015

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4. Mauritius Education & Human Resources Strategy Plan, 2008–2020

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5. Government of Mozambique, Education Sector Strategic Plan II (ESSP II), 2005–2009

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Annex 2. Key Performance Indicators from the Cambodia Education Strategic Plan, 2004–2008

Table 1. Revised ESP Policy Monitoring Matrix

Dimensions	New indicators
1. Equitable Access (with gender targets)	<ul style="list-style-type: none"> • National, provincial and district enrolment trends • Gender and urban/rural enrolment balance • Representation of students from poorest families • Basic education student progression rates • Basic education student repetition rates • Net intake of age 6 in primary grade 1 • Skills training and higher education enrolment patterns • Pre-service teacher training enrolment
2. Quality and Efficiency	<ul style="list-style-type: none"> • Student performance standards in selected primary grades and grades 9 and 12 • Availability of instructional materials and trained teachers • Pupil–teacher ratio • Number of incomplete primary schools • Remote difficult school teacher postings • Number of students re-entering grades 3–9 • Accredited public/private higher education institutions • Number of teachers with grades 10–12 or above • Coverage of science, technology and ICT facilities
3. Institutional Development and Capacity Building	<ul style="list-style-type: none"> • Education budget volume and share • Basic education spending share • Priority programmes spending patterns and disbursement • Coverage of internal audit system • Salary and non-salary allocations and spending ratios • Teaching and non-teaching staff deployment rates • Operational capacity of budget management centres • MoEYS training output from accredited programmes

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About the Working Paper



To make progress in education, countries must have a clear vision of their priorities and how to achieve them. Many ministries therefore prepare strategic plans, which reflect this vision and help mobilize people and resources. Planning in most countries is influenced by local history, organization of the state, and available resources, as well as specific challenges such as natural disasters or armed conflict. Regardless of the particular circumstances, educational authorities need to carry out essential tasks such as analysing the education system, formulating relevant policies, then implementing these and monitoring their implementation, often jointly with their national and international partners.

Since its inception in 1963, IIEP has been supporting countries in their sector planning efforts, whether through training, research programmes, or technical collaboration. The 'Education Sector Planning Working Papers' series is based on nearly five decades of experience, gathered from numerous country partnerships.

The objective of Working Paper 3, *Strategic Planning: Techniques and methods*, is to provide practical guidance about the methodological and technical aspects related to the formulation of education sector strategic plans. With concrete examples from existing sector plans, and numerous references and links to further reading, it highlights the different phases of the planning process. The Paper also introduces the reader to one of the most widely used methods to design programmes and projects – the logical framework approach. It is presented here adapted to the specifics of education sector planning.

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