Guidelines
for Capacity Development in Education Policy Planning and Resource Management

Division for Planning and Development of Education Systems
(ED/PDE)
International Institute for Educational Planning (IIEP)

in cooperation with

Organisation for Economic Co-operation and Development
Centre for Effective Learning Environments (OECD-CELE)

Education Sector
UNESCO, Paris
2012

Guidelines for Capacity Development in Education
Policy Planning and Resource Management

Guidelines for Capacity Development in Education Policy Planning and Resource Management

Division for Planning and Development of Education systems (ED/PED)

International institute for Educational Planning (IIEP)

in cooperation with

Organisation for Economic Co-operation and Development
Centre for Effective Learning environments (OECD-CELE)

The publication costs of this study have been covered through a grant-in-aid offered by UNESCO and by voluntary contributions made by several Member States of UNESCO, the list of which will be found at the end of the volume.

Published by:
UNESCO
7 place de Fontenoy, F75352 Paris 07 SP, France

Cover design: IIEP
Typesetting: IIEP
Printed in IIEP's printshop
ISBN: 978-92-803-1366-6

Contents

Foreword

Capacity Development (CD) in Member States is one of the five major functions of the Education Sector and is aimed at providing technical support to develop the capacity of Member States and thus enable them to achieve their national education goals. This major function has been confirmed in UNESCO's recent Programme and Budget for the current biennium (C/5), in which the thematic area of the expected result 1 (ER 1) "aims at assisting Member States in developing national capacities to prepare and implement robust education sector plans".

A survey conducted by the Organization (2008)[1] revealed that, despite the progress achieved in enabling countries to deliver quality education policies and programmes, much remains to be done. Programmes to strengthen the capacity of the education sector have not always succeeded in improving the efficiency and effectiveness of public institutions, including education ministries.

This document is intended to fulfil the strategic objectives and to meet the demand on the ground. The Guidelines focus on providing useful methodologies, techniques, and tools for education policy analysis, sector diagnosis, planning, and costing and financing.

The Guidelines are intended to facilitate internal capacity development: The Education Sector is engaged in professional development and coaching of Education staff in the field so as to enable them to effectively advocate for EFA and support their national counterparts in the areas of sector-wide planning and policy formulation at country level.

The Guidelines aim to support education staff in the field offices to acquire basic and essential knowledge in educational planning and management. It is hoped that colleagues who are working as an interface between UNESCO and Education Authorities will consider this document as a useful tool for defining, fine-tuning, and reviewing their work priorities to support their sector planning and management processes in their respective contexts and situations.

1. UNESCO Education Sector (2008). Review of UNESCO's Capacity Development Programmes: Final review report. (working document).

The Guidelines aim to strengthen our internal and external strategic partnerships: They were developed by using respective fields of technical expertise in UNESCO and, as such, their preparation enhanced strategic partnerships within the Organization. The Guidelines are a good example of a fruitful joint project with IIEP as an internal key strategic partner; they have also benefited from a new external partnership with OCED/CELE in the area of effective school and learning environments.

Field colleagues are encouraged to use the Guidelines in different settings, including those where particularly challenging conditions prevail, and to adapt them as necessary.

During this biennium, the Division for Teacher Development and Higher Education (ED/THE) at HQ and IIEP will jointly support and facilitate the use of the Guidelines by the Education Staff in the field who are engaged in delivering education programmes in a wide array of complex national contexts and challenges.

Qian Tang Ph.D
Assistant Director-General for Education

Acknowledgements

The Guidelines have been jointly designed and written by the **International Institute for Educational Planning (IIEP)** and **the Division for Teacher Development and Higher Education (THE)**, formerly known as the Division for Planning and Development of Education Systems in the Education Sector.

The Guidelines are the result of the collective efforts of the following staff, mobilized from the two entities: Anton De Grauwe and Candy Lugaz (*Chapter 3* and overall guidance), Khadim Sylla (*Chapter 4*), Serge Péano (*Chapter 6*), and Asuncion Valderrama (References and bibliographies for each chapter), Megumi Watanabe (*Chapter 5*, *Chapter 9* and overall coordination with the IIEP team) and Dominique Altner, who has been instrumental in initiating and designing this project.

Special thanks are owed to: Abrar Hasan (for the outlines of the Guidelines and *Chapters 1-2*), Yoko Wakayama (for an initial write-up of *Chapter 9* and the first editing of the Guidelines), and Juan Enrique Hinostroza (for *Chapter 7*), whose substantial contributions must be fully acknowledged.

Sincere thanks go to Hannah von Ahlefeld, Analyst from the OECD Centre for Effective Learning Environments (CELE), who contributed to the development and finalization of *Chapter 8*.

Miriam Jones carried out the challenging task of ensuring the editorial consistency and coherence of the publication.

Without the strong leadership and commitment of David Atchoarena, Director of the Division for Teacher Development and Higher Education of the Education Sector (THE/ED), as well as effective support from the IIEP Administration unit, the Guidelines would not have been realized.

List of acronyms and abbreviations

ANPRO	Analysis and Projection model
ATP	Advanced Training Programme
CAPNAM	Capacity Needs Assessment Methodology in Educational Planning and Management
CD	Capacity Development
ECCE	Early Childhood Care and Education
EFA	Education for All
EFOS	Education Field Staff
EIB	European Investment Bank
EMIS	Education Management and Information System
EPSSIM	Education Policy and Strategy Simulation Model
ESM	Education Simulation Model
ESP	Education Sector Planning
FTI	Fast Track Initiative
HR	Human Resource
HRM	Human Resource Management
ICT	Information and Communication Technologies
IIEP	International Institute for Educational Planning
MDG	Millennium Development Goal
MoE	Ministry of Education
MTEF	Medium-term Expenditure Framework
M&E	Monitoring and Evaluation
OECD	Organisation for Economic Co-operation and Development
PPM	Policy Planning and Management
RTC	Regional Training Course
SAMES	Sectoral Analysis and Management of the Education System
TISSA	Teacher Training Initiative for Sub-Saharan Africa
TVET	Technical and Vocational Education and Training
UN	United Nations
UNCT	United Nations Country Team
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization

List of tables

List of boxes

List of figures

PART I

I. Background, Objectives, and Conceptual Framework

1.1 Background: Why the guidelines?

Capacity development (CD) in Member States is one of UNESCO's top four priorities. A survey conducted by the organization (UNESCO, 2008) revealed that not enough is being done in the area (see Appendix A for its main findings), and that what is being done has many shortcomings (see Appendix B on the main recommendations of the Strategy Paper, 2009). The Strategy Paper made several recommendations, following which a number of initiatives have been launched to address both the scale of operation and shortcomings in the approach to CD.

With regard to scale, UNESCO launched CD programmes in several priority countries for targeted assistance in the 2010–2011 biennium. To address the shortcomings in implementation of CD initiatives, it developed a methodology for identifying educational capacity development needs. This methodology is now being applied to make in-depth analysis and recommendations in three countries, namely the Democratic Republic of Congo, the Dominican Republic, and the Republic of Armenia.

1.2 Objectives and scope of the guidelines

Objectives

The capacity of UNESCO's programme specialists in charge of the Education Sector in the field offices, referred to as education field office staff (EFOS) throughout this volume, is the most critical link in the chain of the organization's efforts to develop and implement educational capacity programmes for Member States. Having better equipped UNESCO field staff is vital in assisting countries to strengthen their educational CD.

These considerations led to a request by the Executive Board and Member States for a set of guidelines that could be used by UNESCO EFOS in developing CD programmes. This document is a response to that request. It is understood that the guidelines will be complemented by more specialized training for EFOS on a need basis, depending on the staff profile and the requirements of the country with which the staff is dealing.

The main objective of the guidelines is to strengthen UNESCO's EFOS's capacity to help it (i) identify the country's need for capacity development, and (ii) prepare and manage CD activities in cooperation with Member States and international agencies and donors. The guidelines may be of help to the countries and to staff of other agencies as well, but they are not the primary target. As noted above, country situations will be investigated more thoroughly through the parallel work on needs assessment.

Scope

UNESCO's CD efforts are intended to cover four priority areas: (i) policy planning and management; (ii) teachers; (iii) technical and vocational education and training (TVET); and (iv) literacy. Within this field, the scope of the guidelines is further limited to CD in the field of educational policy planning and management (PPM). The remaining three areas are to be covered by work undertaken through other initiatives.

Target audience and uses of the guidelines

Given the main aim, the criterion for the nature and content of the guidelines is that they should be of maximum use in meeting UNESCO EFOS's needs. For this, the staff profile must be kept in focus. UNESCO's EFOS is composed of people with different profiles and competencies. The guidelines cannot be tailor-made for each individual in such a diverse group; rather, their starting position is based on a general profile of the target group, i.e. specialists in education but not necessarily in CD. The EFOS are viewed as proactive actors in seeking new opportunities for launching CD activities for the countries for which they are responsible. The guidelines are intended to assist them in this task and in preparing and implementing these activities by raising their awareness of the dimensions of PPM capacity requirements and the organization's potential for meeting them, either by itself or in concert with other partners.

1.3 Nature of information provided and use of the guidelines

With the above aim in mind, the overarching consideration in choosing the material for inclusion in the guidelines was its expected usefulness to the EFOS in raising awareness on the nature of CD requirements for educational PPM. Accordingly, the guidelines provide baseline information

on the multiple dimensions of CD requirements – so that EFOS are better equipped to identify CD needs – and on the processes of preparing and managing CD programmes – so that staff are better equipped to successfully launch CD programmes.

The guidelines do not aim to provide in-depth information either on the myriad of CD needs in educational PPM or on the details of specific programmes and tools to meet those needs; rather, they are meant to assist EFOS in locating promising areas and dimensions of CD intervention. Neither are the guidelines to be seen as a training manual for EFOS, but rather as a tool that provides a starting point. EFOS would then follow up by acquiring more in-depth information as needed, either through exploring the sources of information identified in the guidelines or through a training programme that the organization could set up for them. In their present form, EFOS can use the guidelines for several purposes.

While CD in educational PPM is an important focus of UNESCO's work, there remains to be considerable confusion about what CD does and does not actually mean. The EFOS can use the guidelines to become familiar with the many and complex dimensions of CD in the field of PPM. For example, the guidelines clarify the scope and types of capacities that are relevant and the functions they need to perform in an effective and well-functioning PPM system, and they emphasize the strong linkage with the policy objectives that the system is expected to serve. By providing this background, the guidelines can be used by the EFOS as a starting point for mapping, in broad terms, the areas where PPM capacity needs could exist in a partner country.

The guidelines can also be used to ensure that the EFOS are equipped to initiate dialogue with partner countries – and other partners – regarding a potential CD activity, and to evaluate the case for undertaking a more in-depth examination of a country's CD needs. They can also help EFOS to evaluate a country's request for a CD activity, and whether, for example, the request is based on a good understanding of what CD might actually involve.

The guidelines can also be used by EFOS to link their work on educational CD to other related programmes in the partner country. The guidelines identify the linkages that may exist between educational CD and CD work in other policy areas outside of education. For example, many countries are undertaking public sector reforms that aim to improve

accountability, efficiency, and good governance and management. These capacities are key elements of a CD capacity in PPM.

These guidelines are meant to provide baseline information; for this reason they also provide sources to which the EFOS can turn for additional information should they need it. They include sources of additional reading material, as well as information on providers of CD training.

As a first version, these guidelines are meant to be regularly updated to make them more relevant and useful for EFOS's work. It is therefore envisaged that this version will be presented to the EFOS at a workshop to assess its user-friendliness, its general usefulness, and to seek EFOS's advice for further improvement.

1.4 A conceptual framework

The guidelines are based on an analytical framework developed jointly by UNESCO-UNDP for the purpose of assessing capacity needs (the Capacity Needs Assessment Methodology in Educational Planning and Management, or CAPNAM, approach). As depicted in *Figure 1*, CD needs are identified in three steps. The first step is to identify **education policy areas or domains** that require planning and management capacity; the second is to identify **PPM functions** to support those policy areas; and the third is to identify the **types of capacities** required to perform

The policy domains are shown along the diagonal axis. The horizontal axis identifies the full cycle of planning functions that need to be carried out in each policy domain. These functions require four types of capacities, which appear along the vertical axis.

Identifying policy domains

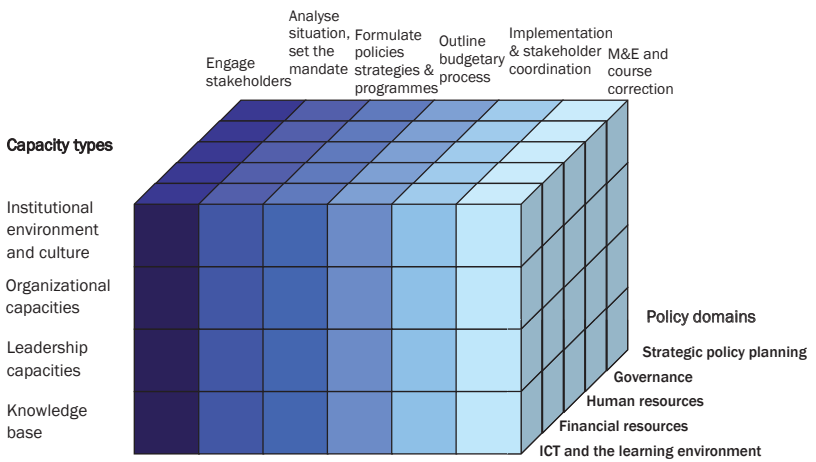
A typical education ministry faces a number of standard policy questions: What types and quality of educational provision to offer; on what scale (level of investment); for whom (access and equity); and through what delivery mechanisms (taking into account the technology available and the learning environment, including pedagogical and assessment methodologies). For the purposes of these guidelines, these policy questions may be translated into five policy domains for deeper analysis:

(i) Strategic policy planning;
(ii) Governance and management;
(iii) Human resources;

(iv) Financial resources;

(v) Information and communication technologies (ICT).

Figure 1. Three-dimensional framework for assessing capacity needs



The first policy domain deals with the objectives and targets for the education sector and its sub-sectors. The second is concerned with the governance and management of the sector, and the other four examine different types of resource inputs and their deployment in the pursuit of the objectives of education policy.

Identifying PPM functions

The functions identified in Figure 1 describe the full policy development and implementation cycle (UNDP, 2008*a* and 2008*b*[2]). The literature offers other ways of disaggregating the planning cycle (IIEP, 2010[3]), but the following six actions capture the common core elements:

2. UNDP. 2008*a*. Capacity assessment methodology: User's guide; www.beta.undp.org/content/dam/aplaws/publication/en/publications/capacity-development/undp-capacity-assessment-methodology/UNDP%20Capacity%20Assessment%20Users%20Guide.pdf
UNDP. 2008b. Capacity development practice note. http://www.undp.org/cpr/iasc/content/docs/UNDP_Capacity_Development.pdf
3. IIEP. 2010. Strategic planning techniques and methods, IIEP Working Paper N° 3. Paris: IIEP-UNESCO. unesdoc.unesco.org/images/0018/001897/189759e.pdf

- **Engaging stakeholders:** In order to be effective, PPM requires an underlying consensus for the planning process; both within and outside the ministry, within government structures and among non-governmental stakeholders.
- **Analysing the existing situation:** The policy planning unit needs to base its planning work on a thorough analysis of the existing situation and focus on setting the mandate for the unit's work.
- **Formulating programmes:** The next steps involve translating the mandate into credible policies and deliverable programmes.
- **Determining the budgetary processes:** These programmes have to be converted into budgetary processes, identifying both the sources of funds and the modalities of acquiring and disbursing them by various levels of authority implicated in the process.
- **Implementing the programmes:** A critical function for the planning unit is to identify the implementation process of policies and programmes, with targets and responsibilities, at each level of the responsibility chain, and this also includes a financial management function.
- **Monitoring and evaluation (M&E):** This function is needed to ensure that the programme is being effective in meeting its objectives, and to introduce course corrections if they are off-target.

Identifying the types of capacities required

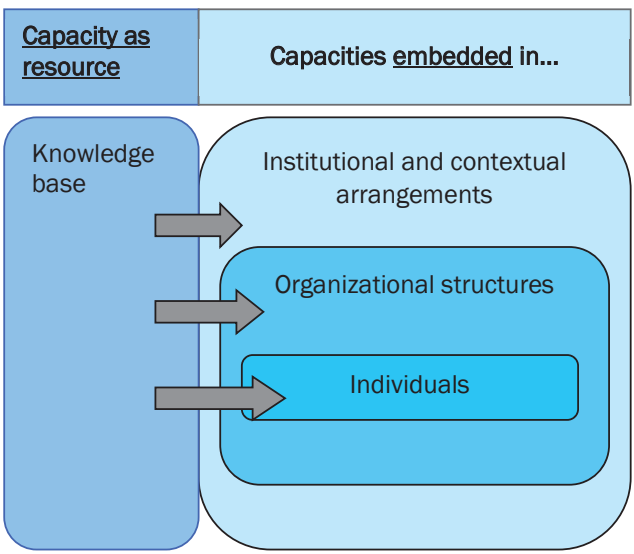
CD is a large and complex field, and much confusion has surrounded the definition of capacity. The guidelines use a clearly defined concept of capacity, which is based on the strategy paper and other recent work.

In this definition, capacity is not an isolated, one-off activity (such as provision of specific training). Rather, it comprises several types of tangible and intangible elements that contribute to achieving an organization's or a society's goals. As depicted in *Figure 2*, performing the PPM functions requires four types of capacity that fall under two broad categories: capacities that are embedded in institutions and practices, organizational structures, and individuals; and capacities that are of a stand-alone variety, which can be used as a resource by various actors.

- **Institutional capacities** refer to rules, procedures, and processes that countries have in place to regulate, plan, and manage the execution of development, rule of law, and other functions of state (UNDP, 2008*a*: 43). It is important not to confuse this description of institutional capacities with specific institutions, such as, for example, an educational establishment or a ministry.

- **Organizational capacities** describe ministry and stakeholder arrangements and structures that operate within the institutional rules and contexts noted above, and shape the behaviour and functioning of various actors in performing PPM tasks.
- **Individual level capacities** can take a variety of forms of skills, such as technical, functional, and leadership skills. The technical and functional skills of the planning staff can in themselves provide a wealth of capacities that are essential for the effective operation of the planning system. In addition leadership skills are important, especially at the sector-wide level, in setting strategic directions for the sector, in supporting the planning function, and in obtaining political support. 'An important characteristic of good leadership is the ability to anticipate (and sometimes catalyze), be responsive to and manage change to foster human development' (UNDP, 2008*a*: 53).
- **Stand-alone capacity** in the form of the accumulated knowledge base stands for all the information, analysis, tools, and dissemination mechanisms that are used by other players in tandem with the three embedded capacities mentioned above.

Figure 2. Types of PPM capacities



The capacity development process

Given the importance of the institutional and organizational cultures in CD, the uniqueness of country circumstances becomes a primary factor in developing and implementing CD programmes. To be effective, CD intervention processes must be tailored closely to the national organizational and institutional environment. The guidelines' perceive a CD activity as an interactive process involving the EFOS, the country, and multiple partners. This view informs the chapter on the process of preparing and implementing CD programmes (*Chapter 9*), which points out that CD activities can only be successful if the capacity is actually used and implemented. Therefore, M&E of the implementation of the CD process becomes an essential part of the activity. The CD activity must also be sustainable over time so that its impact is not lost after the initial intervention. Hence, follow-up activities in sustaining CD programmes are essential.

1.5 Chapter structure and contents

Chapter structure

The guidelines comprise three parts. *Part I* provides the context and the conceptual framework (the present chapter). It introduces the main concepts and identifies the scope of the guidelines and their uses. In addition, it describes the conception of CD programmes in the PPM field, the criteria for choosing the material, and how they are structured.

Part II, which constitutes the largest section of this volume, deals with the goal of assisting EFOS in identifying CD activities in specific areas of PPM. It contains seven chapters (*Chapters 2* to *8*), which are structured according to the following considerations.

Chapter 2 deals with strategic planning issues. The perspective here is of education policy issues that involve the whole education sector and its relationship with other sectors. *Chapter 3* deals with governance issues – that is, what capacities are needed to govern the education sector and its sub-sectors effectively and efficiently. *Chapter 4* deals with CD in the domain of the knowledge base. *Chapter 5* treats specific issues in planning the human resources for the education sector. *Chapter 6* examines planning issues that are specific to financial resources. *Chapter 7* is devoted to information and communication technology (ICT) resources, and

Chapter 8 takes up the issue of planning and managing for educational infrastructure.

Part III (*Chapter 9*) covers the process of preparing and managing CD programmes and has four components, as already described.

Chapter content

Taking into account the conceptual framework, the contents of *Chapters 2* to *8* are organized as a response to a series of questions that a typical proactive EFOS may face when identifying capacity needs and proposing CD recommendations for the country concerned:

- What are the tasks and challenges that PPM is expected to address?
- What capacities are required (individual, organizational, institutional, and knowledge base) to address those tasks and challenges?
- What tools and approaches have been used to develop PPM capacities, and what are their strengths and limitations?
- How can the tools and approaches be acquired, or who are the providers?
- What are the important additional references on the topics?

The content of *Chapter 9*, which deals with the process of preparing, launching, and managing a CD programme, is shaped by responses to the following challenge faced by EFOS: How to successfully and effectively initiate, prepare, and manage a CD programme. The response to this question requires knowledge in several areas:

- What are the implications for UNESCO's CD efforts in light of United Nations' (UN) reforms regarding programme delivery modalities?
- What are the desirable features of the process of preparing and implementing CD programmes?
- What are the features of successful CD programmes?
- What financial and technical resources are available that can be mobilized to support CD programmes?

PART II

II. Capacity Development for Strategic Planning

2.1 Introduction

An education field office staff responding to a country request on educational CD must begin with the question: 'Capacity development for what?' The answer to this question, according to the analytical framework of Chapter 1, lies in the policy domains that define the issues that require capacity support. The strategic policy domain is one of the policy areas discussed in this volume and forms the subject of this chapter.

Section 2.2 explores the nature of the strategic issues confronted by ministries of education (MoEs). Without attempting to be exhaustive, this section identifies five categories of strategic issues that a typical MoE must address. *Section 2.3* picks up on the key point made by the analytical framework that capacity is a multidimensional concept, not merely a matter of a few technical tools or staff training. It consists of several types of capacities, and these must combine in order to perform multiple functions and be effective. The section takes examples of the strategic policy issues described in *Section 2.2* and works out examples of the types of capacities and capacity functions they imply. *Section 2.4* focuses on the tools and approaches for developing the required capacities. The term 'approaches' is used here advisedly so as to emphasize that CD is not simply a matter of acquiring some policy planning tools as it has traditionally been treated. Rather, CD is an art; an approach that requires constant practice and improvement in how capacities are used. Hence, good practice approaches from different countries are helpful in providing lessons for improving the policy planning process and implementation. *Section 2.5* identifies major institutions and organizations that provide CD opportunities. *Section 2.6* refers the reader to literature containing further information on CD tools and approaches.

2.2 The nature of strategic objectives and the challenges they pose for CD

A typical education ministry is faced with several overarching strategic policy questions, such as deciding on the volume of provision (type and

quality questions); who should be the beneficiaries (access and equity questions); what should be the scale of the resources devoted to educational provision (investment and financing questions); who should deliver education (public versus private sector questions); and the pedagogies and infrastructures to employ in delivering education. The scope of the strategic issues will differ by the scope of the ministry's jurisdiction: the education sector is made up of several sub-sectors, and a ministry's jurisdiction may range over some or all of the sub-sectors.

Sector-wide strategic policy issues

Ministries dealing with the education sector as a whole must consider many system-wide issues, including relationships between education sub-sectors. Without being exhaustive, the following five categories offer examples of the types of issues they typically face:

1. Setting priority for education relative to other national priorities: All countries have to make decisions that combine to produce a given priority for the education sector among other national priorities. These decisions are reflected in, for example, the amount of the national budget spent on the education sector. The education ministry has an important role to play in shaping these priorities. There is large variation across countries in the percentage of national budget devoted to education, which is the outcome of some explicit or implicit decision-making process.

2. Coherent linkages with other socio-economic policies: Societal decisions regarding the overall valuation of education are closely linked to the role of education in relation to policies for other social and economic sectors. Budgetary allocation to the education sector, for example, is dependent on how education programmes' role is seen in relation to policies for economic and social development. An obvious example is the role of education in poverty reduction policies. Education policies need to examine these policy linkages to develop education's strategic vision and resulting priorities.

3. Setting intra-sector targets: An education ministry dealing with the whole education sector has strategic decisions to make on the respective priorities and targets for various sub-sectors within the education sector envelope. Education comprises a number of sub-sectors, ranging from early childhood education to tertiary education and adult learning. Both formal and non-formal education have to be considered. The importance attached to each sector is subject to dynamic forces of societal and

economic change. Setting targets related to Education for All (EFA), for example, requires careful analysis of many demand and supply factors and social and economic aspirations affecting different sectors of education.

4. Sector-wide regulatory and other institutional and legal frameworks: An education ministry with sector-wide responsibilities must make strategic decisions regarding system-wide institutional and legal frameworks. A prime example is the setting up of a qualifications structure for the whole sector. Another example is of regulatory frameworks that link one sub-sector to another through transition arrangements.

5. International educational relations: A country's education sector has many types of international linkages, ranging from student and staff mobility and resource flows to internationally compatible mechanisms for quality assurance and qualifications. As members of the international community, countries are called upon to participate in international goal-setting exercises, such as EFA and the Millennium Development Goals (MDGs). Similarly, most developing nations are partners in development assistance programmes, which require coordination and harmonization of international modalities in national strategies.

Strategic objectives: sub-sector perspective

The same overarching issues of access and equity, quality, investment levels, mode of delivery, and curriculum and pedagogy form the main strategic concerns at the sub-sector level. But their manifestations at the sub-sector level can be different from the sector-wide perspective just noted. This is illustrated with the five types of strategic policy issues described in Section I.

1. Priorities and targets: Very different kinds of factors need to be considered at individual sub-sector levels in determining their sub-sector targets and priorities. For example, setting the targets for Early Childhood Care and Education (ECCE), primary schooling, secondary schooling, vocational education, tertiary education, and adult learning is subject to different socio-economic considerations and very different balancing of weighting for each of the myriad factors. Each sub-sector, of course, militates for a larger share of resources and draws upon different types of arguments. Similarly, each sub-sector has to decide on the appropriate balance between a range of sector objectives, such as access (universal participation), equity, social cohesion, and quality, which can vary among sub-sectors. For the tertiary education sector, for example, making a

contribution to economic competitiveness and innovation would be of a different order than for the ECCE sector.

2. Links with other policy areas: The nature of the links with other policy sectors differ between education sub-sectors. For example, in the case of ECCE, it is the links with the health and social ministries that dominate, while the links with the labour ministry may be more relevant for the upper secondary, vocational, or tertiary education sub-sectors.

3. Provider types: The considerations that help decide on the balance between public and private provision vary among different sub-sectors. For example, the primary and secondary school sectors have traditionally relied more heavily on the public sector than has ECCE.

4. Regulatory and institutional frameworks: As noted above, some regulatory frameworks are exclusively sector-wide in nature, such as the qualifications system. At the same time, each sub-sector requires different legal and institutional frameworks, for example, to deal with quality and assessment standards. Similarly, the nature of intra-sector transitions depends on the sub-sectors being considered. For example, the nature of transition issues between ECCE and primary education are very different between the upstream and the downstream transitions faced by primary and secondary education systems.

5. International linkages: These linkages are far more important at the higher education level than, for example, at the ECCE level, and the nature of the issue to examine and policies to develop are also very different. The brain drain issue may be highly relevant for the tertiary sector, while it is of little significance for the adult learning sector.

Conclusion

These five types of strategic objectives based on the sub-sector perspective provide examples of strategic policy questions or issues faced by MoEs. Because their manifestation differs according to the scope of the ministry's jurisdiction, the implications for capacity needs are also different. For the purposes of this chapter, they define the policy issues that need planning and management support, and which form the focus of this chapter. The issues of legal and institutional framework for the education sector make up an area that overlaps with governance questions and which, for this reason, is treated in *Chapter 3*.

In considering educational capacity development for a country, a first question EFOS should be asking is whether the strategic issues are actually

being raised and handled through a planning process: Is the planning process brought to bear on all the important strategic policy questions? The reality may be that in many instances decisions on these strategic questions are made without the aid of explicit analysis and deliberation, and may even be taken by default for political reasons. The responsibility of the PPM system is to ensure that the decision-making process is explicit and transparent, and that policies are based on an objective and accepted planning process.

2.3 The nature of capacity development requirements

Links between strategic objectives and capacity types and functions

Once a judgment has been made in terms of what policy questions require support from planning capacity, the next question would be about the nature of this support. The analytical framework of Chapter 1 is meant to respond to this question. A key point made by the framework is that policy planning capacity is part of a multi-level process that is to be measured in terms of how it performs. Hence it comprises not only different types of capacities, but also the functions they ought to perform. Capacity development is to be viewed as a continuous process of improvement in policy planning and effective implementation to achieve the desired policy goals.

The analytical framework suggests that four types of capacities are needed:

- Institutional capacity, or rules of the game.
- Organizational capacity, or structures that implement those rules of the game through organizational arrangements.
- Staff capacity, or skills of the individual to carry out the organizational intent.
- Technical capacities and a knowledge base that staff use to carry out their planning and management functions.

The analytical framework of *Chapter 1* also identifies six functions that comprise the full cycle of the planning process. They range from engagement of stakeholders in shaping the objectives, and careful diagnosis of the problems to be addressed in budget formulation, programme implementation and evaluation. The planning literature offers several versions of the planning process, some more detailed than others.

But these six functions capture the essence of all the key features of a well-functioning policy development and implementation process.

As an integral part of the interaction between the four capacity types and the six functions are the central issues of leadership and accountability, which are critical for effective policy development and implementation. Institutional and organizational capacities that are conducive to effective planning and implementation cannot materialize without a high level of commitment from the leadership at all levels in the planning process chain. Similarly, a planning effort is of little use unless the plans are effectively implemented. Hence, an essential ingredient of good planning capacity is to introduce accountability through monitoring and performance evaluation at all stages of policy development, programme formulation, and plan implementation.

Illustrative example: linking capacity development to the goal of setting priorities and targets

These ideas about linking capacity development to specific policy issues may be illustrated with an example related to the strategic objective of setting priorities and targets. It is meant to illustrate how the four types of capacities are brought into play in performing the policy development and implementation functions.

Institutional capacity: An EFOS organizing an educational capacity development activity may ask whether the institutional context in which the ministry operates provides it with the institutional rules of the game to allow it to perform each of the six functions. Do the rules allow, for example, for the engagement of stakeholders in defining policy objectives? Do they put a premium on solid diagnostics to develop policy options? Do they provide rules for the budget formulation process? Is there political support for using the planning as an essential input in the decision-making process, or are critical decisions taken on ad hoc considerations? These are some examples of how the institutional element of capacity figures in the chain of effective PPM.

The leadership dimension cannot be overemphasized. It involves building a political consensus through negotiations and among political powers and stakeholders, with the aim of setting the strategic objectives and arriving at specific targets. The stakeholders comprise a diverse group: responsibility for different components of the education sector fall under different ministerial jurisdictions at the national level; national

responsibilities are shared with sub-national jurisdictions; and different sub-sectors of education are constituted of different stakeholders. The key challenge is whether there are appropriate institutional arrangements for articulating, mediating, and coordinating the different views on the basis of objective and evidence-based criteria and processes.

Organizational capacity: The institutional rules of the game described above cannot materialize effectively unless they are given an organizational form. For example, the political challenge, also mentioned above, requires mechanisms and organizational forms for achieving coordination and consensus building. They can take the form of commissions, committees, advisory councils, and so on. Organizational structures are needed, of course, to set up planning units and for their effective functioning. But organizational mechanisms are also needed to integrate the planning process in the operational aspects of the ministry and in performing each of the six functions.

Staff capacity: Effective planning capacity requires a critical mass of institutionalized and sustained planning with a core and stable group of staff with the required skills to perform all six functions. They include staff not only with planning skills, but also the range of other skills required for each of the six functions, including the implementation process. Motivation to perform is a special aspect of staff skills. This requires a recruitment and personnel policy that generates stability in the planning work force and mitigates the adverse effects of frequent staff turnover. Staff capacity also includes capacity to use up-to-date planning methodology, including simulation and projection models, and tools such as education simulation models (ESMs) to design and use alternative scenarios and to assess the resource implications of alternative sets of targets. It includes the capacity to plan within the Medium Term Expenditure Framework (MTEF) and to integrate decentralized plans.

The planning staff require in-depth knowledge of the functioning of the education system, capacity to deal with very large quantities of data, and skills to use and interpret them in the planning models. An education management and information system (EMIS) could be of particular use (see *Section 4.6*).

Capacity of technical resources and the knowledge base: In addition to having the required skills and motivation, PPM staff need to have access to the required planning tools, data, and evidence to support the strategic objectives and to translate them into targets by setting the

planning horizon, priorities for plan implementation, and implementation modalities in the form of programmes and projects.

Developing sector-wide plans faces many challenges: These would need to be supplemented by different types of capacities to address the main technical challenge of setting up a well-functioning iterative target-setting capacity to assist in the dialogue and negotiation process. This, in turn, requires capacities in different areas to cope with the inadequacies of and to build up the knowledge and information base. There are a variety of ad hoc planning approaches, and the challenge is to integrate different and overlapping planning systems with different time horizons. For example, there may be some plans for education sub-sectors, others for specific regions, and yet others for specific programmes (e.g. EFA-FTI, MDGs, etc.).

None of the planning processes would be effective unless they were supported by a capacity to develop high quality, robust databases on all aspects of the education system and its relationship with the economy and society.

Developing a medium-term education sector plan

Developing a medium-term education sector plan has been one of the main approaches to address the strategic policy issues described in the section above. The methodological steps involved in preparing such a plan are illustrated in *Box 1*, and examples of national plans are given in *Box 2*.

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 a priority programme
Phase 5. Preparation of a cost and financing framework
Phase 6. Design of a monitoring system
Phase 7. Writing up of a draft plan
Phase 8. Revision of a draft and official plan approval

Source: IIEP. 2010. ***Strategic planning techniques and methods***, IIEP Working Paper N° 3. Paris: IIEP-UNESCO.

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/fi les/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

Source: IIEP. 2010. *Strategic Planning Techniques and methods*. IIEP Education Sector Planning Working Paper N° 3. Paris: IIEP-UNESCO.

2.4 Available tools and approaches

To illustrate the tools and approaches for supporting strategic policy planning, it is useful to recall the six functions that comprise the full planning cycle: (i) engaging stakeholders; (ii) analysing the existing situation; (iii) formulating policies and strategies and shaping programmes; (iv) outlining the budgetary processes; (v) developing procedures for implementing the programmes; and (vi) M&E. As can be observed, there are many common elements between these six planning cycle functions and the eight phases of plan preparation noted in *Box 1*.

These functions of the planning cycle are the same whether they apply to the strategic policy domain or to other policy areas. The tools and approaches for specific policy domains are described in the chapters devoted to the particular domain, which follow later in this volume. For example, stakeholder engagement is brought out in several chapters,

especially in Chapter 8. Examples of simulation models to support policy and programme formulation are discussed in Chapter 6, which also provides examples of budgetary processes, such as the use of a MTEF.

For the strategic policy domain, this section provides examples of tools and approaches used in performing two of the six functions; namely sector diagnosis and M&E.

Sector diagnosis

The term sector diagnosis, described below, may be distinguished from sector analysis, which became popular in the 1980s and 1990s. It was promoted by international agencies and external development partners as a first step in the preparation of an education sector plan by an aid-recipient country. It was largely used as a process for building consensus between the country and the development partners about long-term policy options and strategies. This type of sector analysis included recommendations.

What is sector diagnosis? Sector diagnosis offers a critical analysis of the status, functioning, and results of the education system, with a view to identifying strengths and weaknesses. It is the basis for identifying relevant policy goals and objectives and determining their priorities.

Scope: The scope of sector diagnosis can vary depending on the scope of the education sector under examination. From a strategic policy perspective, the scope should cover the whole sector, including all levels of education (from pre-school to higher levels) and the learning acquired in all settings (formal and non-formal).

Analytical framework: *Box 3* provides an outline of a typical sector diagnosis, which includes five main elements: context analysis; analysis of existing policies; analysis of education system performance; analysis of the management capacity; and analysis of cost and financing. This represents the analytical framework, including the analytical system for assessing system performance. In the example given below, system performance is judged according to five criteria: access; internal efficiency; quality; external efficiency; and equity. These performance criteria offer one example. The approach can be tailored by using other criteria that may be of particular interest to a country.

Main steps in sector diagnosis: The preparation of a sector diagnosis includes three main steps: information gathering; information processing and analysis; and preparation of the diagnostic results.

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

Source: IIEP. 2010. *Strategic planning techniques and methods*, IIEP Education Sector Planning Working Paper N° 3. Paris: IIEP-UNESCO.

Monitoring and evaluation

Monitoring is the internal management process by which systematic information about plan implementation is gathered and analysed with a view to identifying strengths and weaknesses. These results are used as a basis for formulating practical proposals for taking the necessary corrective action. Monitoring is carried out by using different types of indicators for measuring progress in achieving the designated targets.

The scope of monitoring, and of the reports based on it, is largely limited to the management of the plan under consideration. In contrast, evaluation is a more in-depth process requiring analysis of more fundamental policy questions related to the overall goals and long-term impact of the plan. A system of monitoring requires three key elements: (i) identification of a matrix of key indicators; (ii) establishment of monitoring structures at different levels of management; and (iii) monitoring procedures to be followed, including a review process. Each of these elements is described below.

Performance indicators: Indicators of performance are selected on the basis of the objective criteria used to design measurable indicators of

inputs, outputs, outcomes, and impact, according to the level at which monitoring is taking place. Several criteria may be invoked in choosing the set of performance indicators at the strategic plan level: (i) performance indicators should relate mainly, though not exclusively, to the impact and outcomes of the education system; (ii) they should give a comprehensive picture of the educational performance that covers the critical areas; (iii) they should provide not only national aggregates, but also indicators for sub-national levels; (iv) the list of indicators should be stable during the plan period; (v) they should be easily understandable by the decision-makers; and (vi) they should be commonly agreed upon by all the stakeholders. An example of the use of key indicators drawn from Cambodia is displayed in *Box 4*.

Box 4. Key performance indicators from the Cambodia Education Strategic Plan, 2004–2008

1. Equitable access (with gender targets)
   - National, provincial, and district enrolment trends
   - Gender and urban/rural enrolment balance
   - Representation of students from the poorest families
   - Basic education student progression rates
   - Basic education student repetition rates
   - Net intake of six-year-olds in primary grade 1
   - Skills training and higher education enrolment patterns
   - Pre-service teacher training enrolment
2. Quality and efficiency
   - 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
   - Teacher postings to remote and difficult schools
   - Number of students re-entering grades 3–9
   - Accredited public/private higher education institutions
   - Number of teachers with grades 10–12 or above

I. Context analysis
   - Macro-economic context
   - Demographic context
   - Socio-cultural context
   - Politico-institutional context

II. Analysis of existing policies

III. Analysis of education system performance
- Access
- Internal efficiency
- Quality
- External efficiency
- Equity

IV. Analysis of the management capacity

V. Analysis of cost and financing

Source: IIEP. 2010. *Strategic planning techniques and methods*. IIEP Education Sector Planning Working Paper N° 3. Paris: IIEP-UNESCO.

Table 1. Blueprint contrasts between traditional and strategic planning

TRADITIONAL PLANNING	STRATEGIC PLANNING
Input oriented	Result oriented
Technocratic	Participatory
Neutral	Mobilization instrument
Linear planning	Iterative planning
Rigid implementation	Flexible implementation
Routine based	Change oriented
Compliance monitoring	Performance monitoring
Emphasis on the plan document	Emphasis on plan implementation

Organizational structures for monitoring: The organizational structures for M&E need to pay special attention to the high level of participation in the planning process. Examples from country practices suggest a three-layer structure, where (i) each department of a ministry prepares an annual operational plan for routine and regular monitoring of programme implementation; (ii) a strategic monitoring committee is required at the ministry level; and (iii) at the policy level, a joint steering committee, chaired by the minister (or a representative), acts as a linking mechanism between the line ministries and the major development partners, and advises the minister on major policy decisions at critical moments of the plan's implementation.

Monitoring procedures: Setting up monitoring procedures involves several steps: (i) preparing an annual operational plan; (ii) routine monitoring by implementing departments; (iii) periodic review by a strategic monitoring committee; (iv) an annual review with the stakeholders; (v) a mid-term review; and (vi) a final review an evaluation.

2.5 Sources of training

Different chapters in this volume provide information on institutes and agencies that provide training on the tools and approaches to planning for specific domains. For example, training sources for EMIS, MTEF etc. are identified in Chapter 6. In addition to these multiple references, training in sector-wide planning is offered by UNESCO-IIEP. The European Training Foundation ETF and the World Bank may also offer training in the field of educational policy planning.

2.6 Where to find more information on educational capacity development for strategic issues?

In looking for additional information on the issues discussed in this chapter, EFOS may find the following list of references useful.

Cambodia MoEYS. 2005. *Education Strategic Plan 2006–2010 ESP*. Phnom Penh: Ministry of Education, Youth and Sport.

Chang, G.-C. 2006. *National Education Sector Development Plan: A result-based planning handbook*. Paris: UNESCO.

Egypt. Ministry of Education. 2003. *National Plan for Education for All (2002/2003–2015/2016)*. Cairo: Ministry of Education. http://planipolis.iiep.unesco.org/upload/Egypt/Egypt%20EFA%20Plan.pdf

European Commission. 2004. *European Commission aid delivery methods: Project cycle management guidelines, Vol. 1*. Brussels: EC.

IIEP. 2008*a*. *Education sector diagnosis*. Module 3 of the IIEP Distance Education Programme on Education Sector Planning. Paris: IIEP-UNESCO.

IIEP. 2008*b*. *Analysing and choosing among policy options: improving access, equity, quality in education*. Module 4 of the IIEP Distance

Education Programme on Education Sector Planning. Paris: IIEP-UNESCO.

Kemmerer, F. 1994. *Utilizing education and human resources sector analysis*. Paris: IIEP-UNESCO.

UNESCO. 2006. *National Education Sector Development Plan: A result-based planning handbook*. Paris: UNESCO.

UNDP. 2009. *Handbook on planning, monitoring and evaluating for development results*. New York: United Nations Development Programme.

World Bank. 2005. *The logical handbook: A logical framework approach to project cycle management*. Washington DC: World Bank.

III. Strengthening Capacities for Effective Governance

3.1 Introduction

The successful functioning of an education system depends not only on the financial and human resources available, but also on the ways in which decisions are made, i.e. on the roles and responsibilities of different actors; on the manner in which they play these roles; on the effectiveness of the structures within which they work; and on the way in which they are monitored and evaluated. The term 'governance' of the education system covers all of these factors that tie into the decision-making process. Governance has been defined in many ways, but the following definition by UNDP summarizes well the main points and demonstrates the complexity and wide coverage of the term:

> *The exercise of political, economic and administrative authority in the management of a country's affairs at all levels. It is a neutral concept comprising the complex mechanisms, processes, relationships and institutions through which citizens and groups articulate their interests, exercise their rights and obligations and mediate their differences*.[4]

This chapter pays attention to the question of governance for two important reasons:

- Firstly, and as mentioned above, governance constraints, such as conflicts between actors, lack of relationships between offices, and ineffectiveness of the monitoring mechanisms can hinder the successful implementation of an education policy or strategy. They can also be sources of staff demotivation.
- Secondly, in many countries the main impediment to achieving educational goals (such as Education for All) is no longer the lack of financial resources, but the weakness of management capacities. Several countries struggle more, at this present time, with ensuring an effective use of the available resources than with scarcity of resources. Ineffectiveness of resource use is evidently related to management capacity.

4. UNDP. 1997. *Governance for sustainable human development. A UNDP Policy document*. http://mirror.undp.org/magnet/policy/

The theme of governance is a vast one. Probably the most popular governance reform at the present time is decentralization; i.e. the shift of responsibilities, authority, and/or resources to actors outside of the central MoE, such as regional offices, municipalities, or schools. Much of this chapter will therefore pay special attention to the decentralization reform. The aim is not to imply that this is a reform that all countries should adopt, but to give it the attention it deserves due to its popularity.

The remainder of this chapter is constructed as follows: The next section (*Section 3.2*) examines the key issues that a country faces when it wants to make the governance of its education system more effective, or the questions that the country needs to answer in this regard. The same section also highlights some important challenges. *Section 3.3* analyses the types of capacities that are required within the educational administration to reply to these questions and to implement the responses effectively. *Section 3.4* gives examples of different approaches to decentralization; it presents different models of decentralization that have been adopted throughout the world. *Section 3.4* also discusses the implementation of governance reforms and some of the crucial steps to be taken. Section 3.5 presents and briefly discusses various sources where more information and guidance on governance and decentralization in particular can be found. Section 3.6 finally lists the references that were used to prepare this chapter, or where additional documentation is available for those with a more specific interest in this theme.

3.2 Issues and challenges of governance

Thinking about governance and constructing an effective governance framework implies reflecting on several issues and responding to a series of questions. Below is a list of the most important questions, numerated in a fairly systematic and logical manner. It is important, however, to keep in mind that in the real world it is seldom possible to have such a systematic reflection. This will be commented on further at a later stage.

A **first** question to be addressed relates to the distribution of roles, authority, and responsibilities between the different actors and levels of the education system. 'Who should be doing what' is a very complex question to address, as there are no correct answers; the reply indeed depends on many factors, in particular the competencies of the actors and their legitimacy (which is fairly similar to respect for their authority). Evidently, when reflecting on the role of one actor, one needs also to keep

in mind what other actors are doing in order to avoid overlap or conflict. This reflection should not be limited to the roles of the public actors, as in many countries private actors can also play an important role, e.g. private schools as providers of education or parents' associations as participants in school management.

To clarify this with an example, teacher recruitment could be left to the school principals if they are believed to have the necessary competence in this regard and if most people consider that they will carry out the task in a correct manner (i.e. they have the legitimacy). But it could also remain a central responsibility if there is fear that principals will abuse their decision-making power and recruit teachers in an irresponsible manner. Another reason in favour of centralized teacher recruitment is that it allows a more equitable distribution of teachers. Many countries have opted for an intermediate formula whereby teacher recruitment is done at local or school level but within a central framework of expected profiles (i.e. relevant experience and qualifications).

A **second** question concerns the organization of the education system, i.e. the structures that already exist or that may need to be created. This question has two sub-questions.

- What is the appropriate organization of the educational administration? Some countries (e.g. New Zealand) have a very simple organization: the ministry at central level and the school management board at local level, without any intermediate structure. Others have a much more complex organization, sometimes with four or more levels (central, regional, provincial, district, zone, and school), and distribute responsibilities between the educational administration and the local government, such as in Sri Lanka.
- What is the appropriate structure within each level? How should a ministry or a district office be organized? How many units, departments, or divisions should constitute the ministry? A specific question in many countries concerns the number of ministries; many countries have two or more ministries, for example with separate ministries for pre-university and higher education. At times, literacy and non-formal education are taken care of by another ministry (the ministry of rural development or population). The existence of a single ministry undoubtedly leads to less complexity, but some countries prefer to have separate ministries to ensure that all levels of education receive sufficient attention.

A **third** issue is closely linked to the previous two and concerns the coordination, collaboration, and communication between different actors

and levels. In principle, coordination is very much the task of the central ministry. When different ministries exist, coordination between these ministries can become a complex matter. As the sector is composed of several sub-sectors, among which there are many backward and forward linkages, the question of coordination is also relevant for these sub-sectors. For example, transition linkages between the secondary and the tertiary sub-sectors, between the formal sector and adult learning etc. need to be accommodated. Secondary school teachers, for instance, are generally trained within higher education institutions, and the weakening of these institutions has had negative effects on the quality of secondary education.

Ensuring fluid communication and exchange of information between actors, structures, and sub-sectors is essential to build up a well-integrated education system. The existence of a common EMIS can be a powerful tool.

Attention should also be given to coordinating the interventions of private actors. The increased number of private institutions (especially, though not exclusively, in higher education) has in many countries become a source of concern as not all of these institutions provide education of similar quality. In some cases, private institutions abuse the lack of central regulation, and parents and students can become victims. Many countries are attempting to strengthen their regulatory mechanisms, for instance through the provision of a qualifications framework or the development of quality assessment and certification institutions and tools.

A **fourth** issue concerns M&E. This cannot be seen as completely separate from the above-mentioned question of coordination, but does deserve specific attention. The development of an effective M&E system requires replying to several sets of interrogations:

- Choosing the right balance between direct government control of educational institutions and educational staff, and the degree of autonomy given to them. As already mentioned, this depends to a large extent on their capacities.
- Developing effective tools for M&E. The classical tool in this regard is the school inspection or supervision system, which exists in almost all countries. However, its effectiveness has been criticized: few schools and teachers receive regular supervision visits, and the follow-up on supervision visits is weak or even non-existent. Supervision is also more focused on the schools and teachers and pays little attention to the education system as a whole. New structures are set up, such as general quality assurance or inspection

bodies, and new tools are being developed, such as school self-evaluation exercises, balanced scorecards and the like.

- In many cases, the effectiveness of these new tools is also in doubt because a third issue is not sufficiently taken into account, namely the incentives of individuals to work effectively and the willingness of departments or divisions to exchange information and collaborate. People do not change the way they work simply because they are being monitored and evaluated. It is probably more important to ensure that there is a follow-up to the findings of these M&E tools. The follow-up may need to consist of a system of rewards, recognition, and sanctions. Moreover, incentives can take different forms and may include elements such as better working conditions and greater participation in decision-making. In general terms, an effective system of M&E presents a balance between support and control.

M&E should not be seen simply as an internal matter limited to providing information to actors within the educational administration, but also as a strategy to keep actors outside the administration better informed, giving specific attention to parents, students, and other 'beneficiaries' of education such as employers. This may help ensure greater transparency and could reinforce the feeling of ownership of an education system within civil society.

As mentioned earlier, it is rare, if not impossible, for any ministry to be able to address these issues in such a systematic order. This is true for at least two reasons. Firstly, there are many inter-linkages between them. Questions of structure are linked to those of responsibility. Coordination and regulation depend very much on the effectiveness of the existing M&E tools. When implementing governance reforms, the issue of these inter-linkages is very complex. A second complication, maybe even more intricate to solve than the first one, is the fact that any governance reform builds upon an existing system, with structures and actors already in place who defend their interests and the survival of their department or division. It is generally much more difficult to abolish a level or a unit than to add one. The consequence is that there are many overlaps and possible conflicts between actors because of the creation of additional levels without the abolition of others.

3.3 Requirements for capacity development

From the discussion above, it will have become clear that effective governance requires capacities at different levels: at institutional level, related to the regulatory frameworks, to the coordination and communication mechanisms and to the institutional cultures; at organizational level, related to the internal structures, the internal communications and to the existence of mandates for the different sections and units; at the individual level, related to the profiles and the skills of the officers. Finally, the political environment is also of great importance when a governance reform is undertaken. The following paragraphs comment on these capacity requirements.

At institutional level

As mentioned above, the first requirement concerns **the capacity to develop and implement an effective regulatory framework**. This is a complex endeavour. For educational planners and managers, their role may be mainly concerned with analysing the present framework and examining in particular the existing roles, responsibilities, and authorities in order to determine where there may be overlaps or where there could be lack of clarity about the responsibility for a specific domain. McGinn and Welsh (1999), in their study on decentralization, propose a series of steps on how to undertake such an analysis. They propose that this analysis examine the 'constitution' (or the 'organic law') as well as the 'the laws, regulations, rules, procedures, and practices that direct the work of those charged with implementation of the constitutional and legislative provisions'. This demands undertaking the following steps:

- Collecting a series of documents (the constitution, enactments made under the constitution, orders, rules, regulations, and relevant laws).
- Analysing what these documents have to say about the governance and regulatory framework.
- Preparing a report on the powers and authorities of the various actors and on the deficiencies in this regard.

However, the institutional capacities do not only relate to existing laws, rules, and regulations, but also to institutional cultures; to the habits and traditions that have been developed over years. Indeed, governance reforms demand in many cases that the staff in the various offices change their attitudes and the ways in which they work.

At organizational level

Arguably, the fundamental capacity for any organization is **the capacity to develop a common vision of the organization's role**. In many cases, a core challenge to the effective functioning of a ministry concerns the failure to bring together all ministry staff and its regional and district offices around a common vision. Reflecting in a collaborative manner – i.e. through involving all staff – on what the ministry (or a district education office, or even a school) can achieve and how best to accomplish its objectives can be a good way of bringing staff together and creating a feeling of belonging to the organization. A common vision may be particularly necessary when a ministry is going through a process of transformation.

A further capacity at this level – and which is closely linked to the development of a vision – is the **capacity to analyse the existing organizational structure and to develop an effective normative framework** for the organization. For a ministry, for instance, this would consist of undertaking a form of institutional audit: identifying the mandate and the main tasks of a specific ministry; examining the internal structure and its relationship to the mandate; and analysing who is responsible for which tasks and with what effectiveness this task if performed. Developing a normative framework implies proposing a structure for the ministry that links clearly the tasks of each department or unit to the mandate of the ministry; identifying a set of tasks for each unit; proposing the number and, especially, the profile of the staff within each unit so that it can effectively perform these tasks; and developing job descriptions for each member of staff of each unit. The purpose of such a normative framework should also include facilitating communication and collaboration between the units of a ministry. Several such audits have been undertaken (see *Section 3*.5) and can be sources of inspiration.

The effective functioning of the organization (such as a ministry or a district office) will not only depend on its structure and internal organization; **the capacity to develop a useful information and knowledge base** is also essential. The education system in many countries is confronted with a paradox: much information is collected (through the school census, regular reports, supervision visits, examination results, and so on), but little of this is transformed into useful knowledge for decision-making. The question of how to develop this capacity is given more attention in a later chapter of the present guidelines.

At individual level

The question of capacities at individual level refers first of all to the **skills and competencies of the individual officers.** It is not particularly useful in a document of this fairly general nature to list a possible set of necessary skills. It is probably more useful to undertake a capacity needs and constraints analysis with the different officers who are working within a ministry, or more specifically within its departments in charge of planning and management. Such an assessment, when undertaken in a collaborative manner, can be a useful exercise on its own, because it will require that the officers reflect carefully on the linkage between their expected tasks and their present competencies.

However, a focus on the skills of the practicing staff should not make us overlook three crucial elements that can be serious constraints. Firstly, there is **a need to clarify the expected profile of the staff**. It is of little use to train existing staff when they can at any time be replaced by other staff whose profile is in no way relevant to their expected tasks. Any individual capacity development plan, therefore, may need to start with an examination of the present recruitment processes and criteria – are these guided by a clear profile of the staff to be recruited? And do the candidates who obtain the post correspond to this profile?

Secondly, staff M&E practices can be sources of motivation and demotivation. In many countries, staff complain about the lack of supportive M&E. At times, evaluation is only a ritual through which officials have to pass, but which is almost void of content and is certainly without impact on their future, and therefore on their performance. A more effective educational administration probably needs tighter staff M&E, but any useful form of monitoring relies on a balance between control and support. Monitoring that consists only of control tends to lead to conflict and frustration. In many countries, reforms are underway to make the evaluation process more transparent and support-oriented. Therefore, **the capacity to develop supportive M&E** cannot be neglected.

Thirdly, whatever training is offered will have to be specific and relevant to the needs of the officers, and special efforts have to be made to ensure follow-up to the training once the individual is back in the workplace. Few ministries of education give sufficient attention to **the setting up and implementation of professional development plans**, which do not only look at training, but also at the use that will be made

of the newly gained skills by the trained officers and at the ways in which these skills can be spread throughout the organization.

The political context

Governance reforms almost always imply changes in the distribution of power and authority. When teacher recruitment decisions are shifted from the central ministry to the school level, this means that the staff at central level will suddenly lose sources of power and patronage. Resistance is therefore almost always a part of a governance reform. Political commitment by the leadership and public support to the reform are exceedingly important. There is little that outsiders can do in this regard. One useful exercise could consist of drawing up an analysis of those in favour of and those in opposition to the reform and their respective strengths and weaknesses (which is usually called a 'stakeholder analysis'). The **capacity to undertake a stakeholder analysis** may need to be developed. Examples of tools are given in a subsequent section.

3.4 Available approaches: overview, strengths, and weaknesses

Different models of governance

The sharing and organization of responsibilities in one country depends on its historical, institutional, administrative, and cultural context. Around the world, different models have been developed, as summarized in *Table 2*. They differ according to the level at which the responsibilities are implemented (central, regional, departmental, district, and school levels) and the kind of actors to which these responsibilities are given, e.g. education experts or not. Therefore a distinction can be made between the following models: centralization, delegation, deconcentration, devolution, school-based management and governance, and privatization.

These models can be defined as follows:

- 'Centralization' refers to models where decisions in the field of education are mostly taken by central authorities, with little involvement of actors from other levels.
- 'Delegation' is the situation where some autonomy is given to specific services or departments working at central level to manage one specific area, such as the evaluation of the system or national examinations. Such areas are fairly sensitive and need to be managed

by one specific unit composed of education professionals working at central level.

- 'Deconcentration' is a model of governance where responsibilities are transferred from the central level ministry and administration to lower administrative levels. Responsibilities are in this case transferred to education professionals working at lower levels of the system. These professionals all belong to the ministry.
- 'Devolution' is the transfer of responsibilities to local elected authorities, e.g. not education experts, and who are expected to represent the interests of the local population.
- 'School-based management' and 'school-based governance' refer to situations where autonomy is given to school-level actors. In the case of school-based management, responsibilities are given to education professionals at the school level, e.g. the principal and teachers. As for school-based governance, it refers to the case where decision-making powers are given to parents and the school community.
- Finally, 'privatization' is the situation in which the management, and even the ownership, of schools are given to private actors.

Table 2. Different models of governance in education

<table>
<tr><th>Actor / Level</th><th>Education professionals</th><th>Elected representatives</th><th>Delegated services</th><th>Private sector</th></tr>
<tr><td>Central</td><td>Centralization</td><td></td><td>Delegation</td><td></td></tr>
<tr><td>Region</td><td rowspan="2">Deconcentration</td><td rowspan="2">Devolution</td><td></td><td></td></tr>
<tr><td>District</td><td></td><td></td></tr>
<tr><td>School</td><td>School-based management</td><td>School-based governance</td><td></td><td>Privatization</td></tr>
</table>

It is important to emphasize that governance in one country seldom follows a totally pure model, but is rather a mixture of some of the above-mentioned models. For instance, even in fairly centralized systems some responsibilities will be given to lower level administrative units. In such a country, the governance framework will therefore be a mix of centralization with some trend of deconcentration. Overall, this will depend on the level and kind of actors considered to be the best placed in each

country to make specific decisions in the field of education, and overall in the context of each country.

Pros and cons of decentralization as a management reform

Decentralization is a popular management reform adopted by many countries these days and implemented in a number of areas of public service management, including education. The pros and cons of such policies have been discussed in depth in the literature, through examination using some of the tools identified in *Section 3.5*, as well as in key books and articles included in Section 3.6. These pros and cons are examined below.

(a) Pros

A number of advantages related to decentralization have been identified by the literature:

- Decentralization leads to increased participation in the decision-making process.
- Decisions are more relevant to local contexts.
- Decentralization contributes to increased accountability of local actors.
- Decentralization leads to greater mobilisation of resources.
- Decision-making and implementation processes are less bureaucratic.
- This contributes to increased efficiency in the implementation of education policies.

(b) Cons

The literature also identifies a number of risks associated with decentralization, and which motivate the opposition to the implementation of such policies:

- A fear for national unity.
- An increased burden on local level actors.
- A risk that the responsibilities will be hijacked by powerful local elites.
- Increased disparities and inequalities.
- A fear of abandonment by the state.

Other risks may also be attached to decentralization policies and constitute barriers to their successful implementation, as mentioned above. Particular cases include the following:

- The institutional culture, which consists, for instance, of a tradition of centralism and a strong trust in the central state, as well as a lack of a culture of participation at community level and of openness of school staff.
- The lack of clarity in the responsibilities transferred, the non-existence of legislative texts at local levels, the absence of training programmes on these texts and responsibilities, and the poor level of support provided to local level actors in fulfilling their new responsibilities.
- The absence of a collaborative framework at local level.

Key principles for implementing a governance reform

In view of these risks and challenges, it is essential to follow key principles when implementing a governance reform such as decentralization. These are examined below.

Firstly, it is important to keep in mind that while decentralization has been a popular reform in many countries for several years, such a policy is **a mode of management and not an objective as such.** Decentralization reforms can be useful in some countries and may be more applicable in specific areas and decisions than in the previous governance system (where decisions were more centralized), while they may not be relevant in other contexts. Here, again, it is important to stress that the context plays an essential role.

In such a process, **the state plays a key role and its effectiveness is crucial.** Decentralization does not mean abandonment by the state, but rather a change in its role, with an emphasis on its regulation, monitoring, and evaluation functions.

Another key principle concerns the **need for complementarity.** The essential strategy of decentralization is to incite more actors to work together towards EFA. While the efforts of a single individual are easily outweighed by the challenges, collaboration among all players can make a difference. Indeed, the schools that function most satisfactorily are those where relations between the community and teachers are good, and where the parent-teacher association assists the principal.

Overall, it is essential to find a balance between the following:

- **Professional-technical expertise and political legitimacy.** Both groups of actors can claim to have a role to play in education. The experts (such as the ministry staff) refer to their competence, specialized training, and experience in education. The political actors can claim that they have been elected to implement policies in education, which is a major political issue. Collaborative frameworks need to be developed between these actors at local level.
- **The mandate, resources, assets, and competences of the actors.** Responsibilities should be given to the actors that are considered to be the best placed according to their location, their level of resources, and their competencies, and they should be given the required resources to carry out these responsibilities.
- **Professionalism, autonomy, and accountability.** Autonomy needs to be counterbalanced by accountability, and at the same time should go hand in hand with professionalism. Local level actors will indeed be able to use their increased autonomy in an effective and successful manner if they are held accountable for the decisions they make and if they are given the opportunity and the incentives to develop into a professional corps.

Implementing governance reforms: the process

When taking the path of reform, it is indeed essential that it be led by, and that it rely on, a strong political and leadership commitment. This would explain the motives of the process and put the emphasis on the changing but fundamental role of the state in such a process.

As for any policy formulation process, and certainly even more in this case, it is essential to proceed with negotiations and consultations, so as to discuss with the main stakeholders the new sharing of responsibilities. It will probably take time and may imply some adjustments in the policy, but such a process facilitates the ownership of the policy by most actors.

However, negotiations and consultations should not endlessly postpone the implementation of a policy. Several countries have opted for what can be called a 'big bang' approach – a radical and speedy introduction of a new policy – precisely in order to avoid the build-up of resistance. This is feasible in countries where the institutional capacities are in place to implement the reform, but in other countries it may have detrimental effects.

3.5 Tools

A number of tools can be of use when embarking on a governance reform or when examining a specific governance context. A selection of them is given below, according to the main issues that they cover.

Training: handbook and face-to-face programmes

UNESCO Office Bangkok and Regional Bureau for Education in Asia and the Pacific, PROAP. 2005. *Handbook for decentralized education planning: implementing national EFA plans*. UNESCO: Bangkok.

After two chapters dedicated to the new trends in public sector management and planning process in a decentralized context, this handbook presents a planning approach and planning tool (the Analysis and Projection Model, or the ANPRO-Model), which were developed based on a planning concept and tool designed, tested, and applied jointly by the MoE and provincial education offices of Viet Nam with technical support from UNESCO in 2003–2004. The handbook can be downloaded at: http://unesdoc.unesco.org/images/0014/001409/140949e.pdf

IIEP organizes a two-week face-to-face training module on the 'Organization and management of the education sector: systems and institutions'. This course broadly focuses on two main concerns: (a) how to manage and organize the system as a whole; and (b) how to manage and monitor individual institutions, be they schools or higher education institutions. Its main components are:

- an introduction to the concept of educational administration and management;
- system-level regulation: issues, actors, and tools;
- organizational models, options, and system monitoring;
- institutional and local-level management: approaches and tools.

For more information, please contact: tep@iiep.unesco.org

Databases

UNESCO. 2009. *Background papers for the Education for All Global Monitoring Report. Overcoming inequality: Why governance matters?*. Paris: UNESCO.

The seventh Edition of the EFA Global Monitoring Report examines how far governance reforms can contribute to increasing equitable access

to education and improving education quality. A series of background papers were prepared for this report and constitute a useful set of data on public policy, governance reforms, and their contribution to EFA. They are available in the following database:
www.unesco.org/new/en/education/themes/leading-the-international-agenda/efareport/background-papers/2009/

IIEP Clearinghouses

- Capacity development strategies:
  www.iiep.unesco.org/capacity-development/capacity-development-strategies/clearinghouse.html
  IIEP has developed a clearinghouse on capacity development strategies with specific attention to educational planning and management. It gathers a number of papers dedicated to the analysis of capacity development in general and of specific programmes and projects. Each document is accompanied by a brief summary and a web link. Specific papers refer in particular to capacity development requirements and strategies in different governance contexts and reforms.
- Implementing decentralization policies :
  www.iiep.unesco.org/research/governance-and-management/decentralization/clearinghouse-decentralization-of-education.html
  This clearinghouse focuses on the implementation of decentralization policies. The experience of countries in developing such policies – in particular the challenges faced by local actors, the capacity requirements for implementing these reforms, and the success stories – are essential elements to guide any reflection on how to implement a decentralization policy. The clearinghouse currently contains 100 documents – books, articles, synthesis studies, case studies, etc. – and each once is complemented by a brief summary and a web link.

3.6 References

Governance and decentralization: the concepts

Abu-Duhou, I. 1999. *School-based management*. Paris: IIEP-UNESCO.

This book makes a conceptual analysis of the concept of school-based management based on a review of key books and articles published on the topic. It examines in detail the process of implementing such a

management reform in a number of developed countries, including Australia, Belgium, Canada, Hong Kong, Hungary, the Netherlands, New Zealand, Spain, the United States, and the United Kingdom. Specific attention is given to the State of Victoria in Australia, which moved towards a system where much autonomy is given to schools, and which has no intermediate layers between the central MoE and schools. This chapter examines in detail the decision-making process on key issues such as school administration, curriculum delivery, resource allocation, and financial and human resources management.

Barrera-Osorio, F.; Fasih, T.; Patrinos, H.A.; Santibanez, L. 2009. *Decentralized decision-making in schools. The theory and evidence on school-based management*. Washington DC: World Bank.

Based on a literature review and country case studies, this report examines the concept of school-based management, presents reforms developed in this area in different regions of the world, and identifies key elements to take into account when assessing such reforms.

McGinn, N.F.; Welsh, T. 1999. *Decentralization of education: why, when, what and how?* Paris: IIEP-UNESCO.

Based on a literature analysis and country experiences, this book discusses the concept of decentralization, identifies the main motives for which it is implemented in a number of countries, and examines its main advantages and challenges. Chapter 4 in particular examines the conditions to be met when taking the path of such a reform, laying emphasis on the need for consultation and debates with key stakeholders, as well as identifying the required capacities for effective decentralization.

Analysis and monitoring of global trends

UNESCO. 2008. 'Chapter 3: Raising quality and strengthening equity: why governance matters'. In: *Overcoming inequality: why governance matters*. Paris: UNESCO.

This chapter looks at governance problems and reform measures in four important areas: finance; school management; teacher recruitment and allocation; and educational planning. Two key findings emerge: The first is that there is no blueprint for good governance – each country has to develop national and local strategies; and the second is that governments across the world have attached insufficient weight to equity in the design of governance reforms.

Implementation of decentralization policies: countries' experiences

Khan, F.; Bray, M. (Eds.). 2007. 'Education governance at local levels'. In: *Prospects*, 37(1).

This issue compiles several articles focused on the experience of different countries in the implementation of governance reforms at local level. Specific attention is thus given to the responsibilities and autonomy of schools, communities, and district education offices. Two articles examine reforms implemented in secondary education. The countries and regions covered by this issue are Argentina (Province of Buenos Aires), Honduras, Mexico, Pakistan, and West Africa.

Lugaz, C.; De Grauwe, A.; Baldé, D.; Diakhaté, C.; Dougnon, D.; Moustapha, M. 2010. *Schooling and decentralization. Patterns and policy implications in Francophone West Africa*. Paris: IIEP-UNESCO.

Based on qualitative in-depth research carried out in four French-speaking West African countries (Benin, Guinea, Mali, and Senegal), this book examines the impact of decentralization policies on the functioning and effectiveness of two key actors at local level, namely the District Education Office and schools. The analysis is focused on the following areas: quality monitoring; their autonomy in the management of financial, material, and human (teaching staff) resources; as well as the relationship with local elected authorities and communities. Each chapter ends with a summary and some main conclusions, while the final chapter raises some key principles for building a policy of decentralization.

UNESCO. 2007. *Decentralization in education: National policies and practices*. Paris: UNESCO.

This book summarizes the presentations and debates of the participants in the International Seminar on Decentralization Policies and Strategies in Education, organized by UNESCO in Argentina in 2003 in collaboration with the Universidad Nacional de Tres de Febrero (UNTREF). It examines how decentralization policies can be taken into account in the preparation and implementation of EFA national plans. The experiences of 10 UNESCO Member States from different regions are examined in this regard: Argentina, Armenia, Brazil, Cameroon, Colombia, Cyprus, Mali, Morocco, Pakistan, and Peru.

Ministry institutional audits

Bista, M.B.; Carney, S. 2004. *Reforming the Ministry to improve education. An institutional analysis of the MOES in Nepal*. Paris: IIEP-UNESCO.

This study was conducted in order to assess the overall capacity of the Ministry of Education and Sports in Nepal, giving specific attention to the mandates, roles, and responsibilities of its staff and units, as well as to guide the conceptualization and preparation of a human resources development plan.

De Grauwe, A.; Segniagbeto, K.; Johnson, M.; Gbayé, H.; Odushina, D. 2009. *Transformer la planification et la gestion de l'éducation au Bénin par le renforcement des capacités: analyser les contraintes, identifier des solutions*. Paris: IIPE-UNESCO.

This study assesses the level of capacities in educational planning and management in Benin by identifying both the constraints faced and good practices. It presents a few recommendations to improve the level of capacities of the MoE in this context.

EuropeAid. 2005. *Institutional assessment and capacity development. Why, what and how?* Luxembourg: Office for Official Publications of the European Communities.

This note offers a conceptual framework for dealing with institutional and capacity assessment, as well as with capacity development issues, mainly in the public sector. It proposes several steps that can be followed in the implementation of such processes.

Oulai, D.; Lugaz, C.; Minas, A.; Teklehaimanot, H.S.; Bernal, M.; Edward, M. 2010. *Analysis of capacity development in educational planning and management in Ethiopia*. Paris: IIEP-UNESCO.

This study evaluates the level of capacity in educational planning and management in Ethiopia by identifying actual constraints and good practices, and presents appropriate strategies to improve these capacities.

Radi, M.; Chang, G.C. 2005. *Capacité de mise en* œuvre *des plans de développement de l›éducation: cas du Niger*, Politiques et stratégies d'éducation, N° 9. Paris: UNESCO.

This study offers an example of an analysis of the capacity of the MoE of Niger to implement education policies and reform, and also examines the capacity development requirements.

Stakeholder analysis

The Department for International Development (UK), or **DFID**, has prepared several documents explaining the concept of stakeholder analysis and applying it to specific programmes and projects (though not necessarily in the field of education). The following webpage provides a useful example that can be a source of inspiration:
www.dfid.gov.uk/r4d/pdf/outputs/R7134H.pdf
(an example of stakeholder analysis before undertaking a groundwater project).

The Overseas Development Institute. Stakeholder analysis. This short text presents a useful introduction to the concept and provides an outline of the process to be followed.
www.odi.org.uk/Rapid/Tools/Toolkits/Policy_Impact/Stakeholder_analysis.html

IV. Developing and Managing the Knowledge Base

4.1 Introduction

The development of national education systems over the past decades has given rise to an increasing demand for quality and the introduction of many reforms. These reforms have mainly aimed to boost school performance and help ensure that graduates find employment, while seeking to minimize costs. They have been particularly concerned with policies for decentralization, curricular reform, the modernization of administrative systems, the rationalization of decision-making methods, the establishment of a consistent framework for action (strategic plans), teaching reforms, the use of ICT, etc.

These changes have added to the complexity of education systems, which is all the greater due to the fact that the challenge of achieving universal education remains a pressing concern in some regions of the world.

The foregoing trends have been coupled with an increasingly strong demand for information to support successful implementation of the reforms and to meet management and monitoring needs. These needs have broadened under the impact of on-going processes of administrative/ geographical decentralization in many countries, leading to the spread of decision-making centres at sub-national levels.

This new state of affairs calls for increasingly advanced expertise to manage education systems effectively. Such expertise must be based on a refined knowledge of these systems, which is itself developed from a varied body of material found at the different levels of these systems. Unlocking the information involved thus becomes a strategic concern in achieving the ultimate goals of education, as the increasingly large sums of money invested in this area now testify.

The present chapter considers the issue of knowledge from the standpoint of managing and monitoring education systems. Mobilizing

the knowledge discussed here means paying special attention to the organizational and technological factors involved in producing it. More specifically, the following questions will now be tackled that educational planners might come to discuss:

1. What types of knowledge/information are required for the effective management of education systems at different management levels?
2. What are the main challenges facing planners and others with responsibilities in education as regards the organization of information?
3. What resources, approaches, and methods are available?
4. Who are the main providers in the field, and what sources of information are helpful for specialists keen to become more informed or to acquire skills concerned with the knowledge base?

Without seeking to provide full and conclusive replies to the above questions, this chapter aims to highlight issues and difficulties relating to the management of the knowledge base in education ministries. It will thus be concerned with outlining a consistent analytical framework capable of guiding educational specialists faced with a brief of this kind.

It is first of all necessary to provide clarification on the concepts used because they cover different realities.

Knowledge management incorporates a variety of concepts situated at the meeting point of several branches of learning. It is present in both the social sciences and exact sciences; hence the difficulty in suggesting a definition on which there is broad agreement and which satisfies everybody. To clarify this vast conceptual field, it is worth commenting on certain basic ideas often associated with it.

Chaudet, a specialist in knowledge management, links the infinitely variable concept of knowledge to two related concepts, namely data and information.

A **unit of data** – or **datum** – is defined as a raw item devoid of meaning, in that it lacks a context or is not interpreted. The presence of a context or interpretation constitutes the main difference between information (or a piece of information) and the datum: 'In other words, placing the unit of data in context creates the added value needed for the existence of (a piece of) information' (Bruno Chaudet, in: www.brunochaudet.wordpress.com/2009/03/30/donnee-information-connaissance/).

As regards **knowledge**, it lies at a higher level of complexity. It is described as 'understood' or 'assimilated' knowledge, which may be tacit or explicit[5]. As its name suggests, tacit knowledge is the knowledge someone possess without clearly articulating it. Conversely, explicit knowledge culminates in expertise because it is articulated and can be transmitted.

These three concepts are linked together in a chain leading from its simplest component – the **datum** – to the more complex notion of **knowledge**, with the idea of **information** midway between the two.

Furthermore, the relation between the concepts of **management** and **knowledge** is relevant to the strategies and approaches implemented for gathering data, information, and knowledge. In the context of education system management, the focus will be more on data and information management, which is linked to the currently used concept of EMIS.

EMIS is commonly defined as **all tools, resources and procedures for gathering, storing and processing information intended to manage and monitor** the education system. Like any definition, this one loses in precision what it gains by being concise. However, apparent within it are three kinds of concerns that will be explained more fully in later parts of this chapter:

1. The organizational issue, which is highlighted by information gathering procedures. These relate to the administrative organization of the education system, and raise the question of the relevance of the administrative organizational model used (centralization, decentralization, devolution, etc.) and, implicitly, the question of the ability of the players to carry out the activities linked to the process resulting from EMIS.
2. The technological issue: the storing, processing, and circulation of information are now inseparable from technological backup (databases, software, information networks, etc.).

Ahead of these matters lie the questions of educational aims and the management level concerned, which will determine the type of information to be activated.

5. I. Nonaka; H. Takeuchi (with contributions from M. Ingham). 1997. *La connaissance créatrice : la dynamique de l›entreprise apprenante* [Creative Knowledge]. Brussels: Edition De Boeck.

4.2 Types of knowledge base needed to manage education systems

The types of knowledge required to manage and monitor education systems depend on the sub-sectors (levels or branches) concerned (such as basic education, intermediate education, technical education, higher education, etc.), the directorates (or other managerial subdivisions) involved within each sub-sector, and the responsibilities entrusted to them.

The ministerial organization chart (see *Table 3*) reflects the purpose and activities of each entity. These activities condition the kind of information needed to carry out the tasks assigned to the entities concerned. In addition to the needs of the administrative purpose, information is also required to ensure better management, monitoring, and implementation of reforms at the school level.

Organization chart of the ministry responsible for the education sector in Senegal

Government administration of the education sector is directed by the Ministry of Pre-school, Basic, and Intermediate Secondary Education, and Instruction in National Languages.

This organization chart clearly reveals the extent of needs in terms of information between the various sub-sectors and the different directorates within each one. Functional interrelations that link the various stakeholders must be reflected in the information required to run the education system as a whole. This highlights the need for an integrated approach[6] in the management of data, information, and knowledge concerning education systems. From a technical standpoint, the concept of 'identifier' is a way of managing data flows transparently across the various channels exploiting them (see *Box 5*).

6. The integrated approach involves processing the information system by taking into account its different components and its constituent sub-systems. It will be discussed further below.

Table 3. Organization chart of the Ministry of Education, Senegal

General Secretariat	Ministry of Pre-school, Basic and Intermediate Secondary Education, and Instruction in National Languages	Private Office Directorate
Directorate of General Administration and Infrastructure (DAGE)	Directorate of Planning and Reform of Education (DPRE)	Directorate of Examinations and Competitive Examinations (DEXCO)
Directorate of School Facilities (DEqS)	Directorate of Intermediate and General Secondary Education (DEMGS)	Directorate of Pre-school Education (DEPS)
Directorate of Literacy and National Languages (DALN)	Directorate of Basic Education (DEE)	Directorate of Human Resources (DRH)
Directorate of Examinations and Competitive Examinations (DEXCO)	Directorate of Training and Communication (DFC)	Directorate of Legal Affairs, Liaison and Documentation (DAJLD)
General Inspectorate of Education (IGEN)	Inspectorate of the Daaras (ID)	Internal Inspectorate (II)
Division of School Medical Supervision (DCMS)	Division of Arab Education (DEA)	Division of Private Education (DEP)
Computer Unit of the Ministry of Education (CIME)	Permanent General Secretariat of the National Commission for UNESCO	National Centre for School and Vocational Guidance (CNOSP)
Division for School Radio and Television Broadcasting (DRTS)	National Institute of Studies and Action for Educational Development (INEADE)	Division for Sports and Youth Activities (DSAJ)
Monitoring Bureau (BS)	Division for School Canteens	

Source: Official website of the MoE in Senegal (www.education.gouv.sn)

Box 5. Demographic data

Examples of information needed to manage education systems

For each category of entity managed, we give examples of information needed to manage it.

Education institutions: name, level, status, location, environment, director or head, etc.

School age population: age, gender, etc.

Pupils and students: name, age, gender, level, origin, address, distance from institution, etc.

Formal Teaching/Educational Arrangements: class, level, type of organization, etc.

Teachers: name, age, gender, training and qualifications, starting date, length of service in the school, place of work, field(s) of specialization, family status, career, etc.

Other staff: name, age, gender, post, training and qualifications, starting date, length of service in the school, place of work, field(s) of specialization, family status, career, etc.

Infrastructure: classrooms, other premises, water/electricity/telephone/Internet access, health facilities, areas, state, etc.

Canteens and school boarding facilities: participants, organization, etc.

Teaching facilities: teaching manuals by level and subject, guides, types and state of teaching materials, computers, etc.

Examination results: candidates, successful candidates, by gender, etc.

Knowledge and skills required

Financial resources and expenditure: by level, type of institution, source of funding, nature of expenditure, etc.

Further development of children who have left school.

Conduct and opinion of those involved: parents, teachers, school heads, etc. (qualitative data will also be relevant here).

Etc.

Information gathering procedures will depend on the management structure concerned. Thus, for the school head, information gathering will be based on school records, whereas the planning directorate will use questionnaire-based surveys. The information format also depends on the management entity. At school level, management concerns will require that personal information about students/pupils should be available, for example, whereas for monitoring needs within a directorate for forward planning, for example, planners will need instead to know the number of students/pupils by gender, class, age, etc.; or the number of teachers by status, gender, level of qualification, etc.

The identifier: (also 'ID') is a word, a number, a symbol, or a combination of these, which uniquely characterizes each entity, such as a school, a teacher, a student, etc. In a database design, it is not possible to have two entities with the same identifier. It is by definition a property, a feature denoting the entity concerned in a unique way. In general it is a number or code that is often composite and includes several pieces of information. Thus the identifier of a school may consist of the number of the locality in which it is situated, the type of school and a figure (representing the 'Nth' school of the same type established in the same locality). The identifier of the teacher is often denoted by what is termed a reference or registration number. Identifiers are unique and do not vary over time. This twofold characteristic – uniqueness and permanence – means that they are essential elements in the management of relational databases, which are now the most widely used. For effective management of education systems, it is vital that the managed entities (schools, teachers, etc.) possess identifiers for reasons linked to both administrative and computerized management.

It will be noted even so that planning directorates[7] within ministries play a special part in knowledge management because of their remit in that they are expected to manage a major share of information on education, and particularly school statistics. These statistics are of great significance in the activities of planning directorates for several reasons: (i) because of the resources they involve; (ii) because of their recurrent nature; and, finally (iii) because of the importance of the information they offer on the state of the education system, and especially that of educational provision and available resources.

Even though educational statistics represent a necessary and vital source of information, they are not sufficient for the comprehensive management of an education system as a whole. The individual information and knowledge developed and managed within schools constitute an invaluable knowledge base for the education system overall. The quality of a school's information system is not only a requirement for sound qualitative management of educational institutions, but also underpins the reliability of the information transmitted to national and sub-national management entities. Reliability is guaranteed because the information is of permanent use, first to the school, and as a result becomes the focus of special attention at local level.

7. The precise name of such directorates may vary from one country to the next. While some refer to 'planning', others often use 'forward planning'. However, their basic remit remains the same.

Box 6. Examples of information needed to manage information systems

Many education policy goals derive from indicators requiring demographic data for their preparation. For example, the efforts of a country to provide schooling can only be measured if the demand for education is known; this is obtained by determining the school-age population at the educational level under consideration. The statistical information required is thus concerned with populations by age at the most refined geographical levels.

Yet in many countries, the quality of demographic data is inadequate. This can be because they were first obtained a long time previously, with the last general population census held over 20 years earlier for example, instead of at the customary 10-year intervals. It can also be that the country has suffered from extensive migrations as a result of armed conflict or natural catastrophes, which have had a marked impact on the demographic structure.

To cope with these limitations, very frequent use is made of information obtained from household surveys or sample surveys conducted by certain bilateral or multilateral cooperation agencies. These latter sources of information often yield differing results, which cast doubt on their reliability..

4.3 Information for management vs. information for monitoring

The concepts of management and monitoring are often used interchangeably. In reality, they differ in several respects and imply different approaches and methods of conceiving an information system. Whereas management is concerned with daily administrative activity, monitoring is concerned with a longer-term perspective and is generally a basis for decision-making. Organizing information for management purposes is generally the work of officials, whereas the task of monitoring borders on the remit of policy-makers. Management is more focused on individual entities, whereas monitoring is more geared towards a collective endeavour.

The example of teaching staff serves to illustrate these distinctions. A considerable share of teaching staff management activity involves gathering personal information: reference/registration number, name, first name, date of birth, sex, place of work, starting date of work, in-service training, academic education and training, etc. This information is used to manage the salaries of teachers and their appointment in a given school, etc. It is especially helpful in the individual monitoring of each teacher.

However, to study regional or gender-based differences, or indeed levels of qualification at national or sub-national level, one generally relies on indicators that may be obtained by aggregating data on individual teachers: the percentage of teachers who are women, the percentage of teachers with a professional qualification, etc. In this case, the activity is one of monitoring.

It will be noticed that, after processing (aggregation), information for management may be used for monitoring. Individual personal data are generally more reliable as they are subject to being checked, both by managers and the persons concerned, as in the case of teachers. Their use for monitoring is thus recommended whenever they are available.

4.4 Issues and challenges in managing the knowledge base in education ministries

Difficulties involved in marshalling data and information, as well as using and circulating them, are apparent at different levels. It thus seems more helpful to approach them in a structured and methodical way. To this end, it is possible to understand them via the observational perspectives of information, organization, technology, and human resources.

The informational dimension

The informational dimension concerns the issue summed up in the question 'what information is needed?' In the preceding chapter, outline answers were suggested, highlighting above all the kind of management and monitoring activities to be carried out. In other words, the information required will depend on the activities and tasks to be performed. However, in practice two situations may often be observed:

1. In certain areas of activity, a glut of information is gathered but which does not really contribute to the management or decision-making process. Besides generating pointless management costs, this situation also compounds the risk of error in information gathering. The more extensive a questionnaire is, the more likely it is to lose the interest of the prospective respondents and cause errors in the replies.
2. Conversely, in other areas information gathering remains inadequate. Thus in many countries, the data and information needed to manage and monitor qualitatively the education system are scarce, if not unavailable. This applies in particular to information concerning

educational attainment, the relevance of curricula, the motivation of teaching staff, etc.

The following questions summarize the difficulties that might be encountered regarding the informational dimension:

- Is the information relevant?
- Is it adequate in covering the various concerns relating to the education system?
- Are the sources of information compatible and consistent?
- Is the information gathered actually used? In other words, is it applied in decision-making processes?

The organizational dimension

The concern for greater effectiveness in the management of education systems has also been reflected in many countries through their policies for transferring responsibility, to a greater or lesser extent, to sub-national entities. These policies for so-called decentralization or devolution, which are deemed necessary in certain national contexts, have in practice extended the information gathering chain and increased centres of decision-making. It follows that coordination of the various entities in organizing information seems a precondition for sound performance.

In many countries, delays reported in the publication of statistical yearbooks, for example, are partly attributable to weaknesses in coordinating and allocating responsibilities. It is true that when lower level administrative entities are working solely to satisfy demands emanating from higher ones, the resultant subordination often leads to many distortions, which are a factor contributing to demotivation and thus a source of many mistakes in questionnaire inputting. Awareness of this may lead to the establishment of a management rule: that any activity aiming to produce information should first serve the 'productive' entity or be subject to feedback. The reasoning behind such a rule would be not merely to ensure the reliability of the data, but also to motivate the stakeholders to perform their tasks appropriately.

The technological dimension

Another weakness in knowledge base management in some countries is the inadequacy of technological resources. These resources are instrumental

at different levels in the process of producing information and indeed knowledge.

- In producing data collection instruments: design, ergonomic formatting, printing, etc.
- In data inputting: computerized inputting screens and automatic control mechanisms, with the latter being vital for the reliability of information.
- In information processing: generic or dedicated computer applications.
- In information storage: storing (permanently safeguarding) information, etc. Data storage or archiving enables time series to be analysed to provide a more ready insight into how the phenomena studied change over time.
- In information distribution: use of various resources, including the Internet.

Technological resources also have an impact on the above-noted organizational dimension via computer networks. Interconnecting the various administrative entities by computer may indeed make it easier to allocate responsibilities and is a way of establishing flexible patterns of organization. Thus regional or provincial administrative authorities could independently administer the local information system and at the same time be linked transparently and automatically to central level administration.

In countries with enough resources, interconnections may even be extended throughout the entire education system down to institutional level. Today, with new technological standards (such as 3G/3G+),[8] it is increasingly possible to link up distant areas to the Internet.

The human resources dimension

Assessments of education systems in many countries conclude that the main factor hindering the development of the former remains the inadequacy and weakness of human resources. Experience has also revealed that, while necessary, capacity-building strategies based essentially on staff training very often turn out to be ineffectual in the long term. Individual skills are ephemeral in many countries because they are

8. Trends in these technologies definitely point to greater potential for very-high-speed connections.

so scarce. The issue of training for a critical mass of skills constantly resurfaces. These facts give rise to a number of concerns as follows:

1. The desirability of professionalizing certain posts, especially those that are highly technical and often in great demand in the labour market, in particular among bilateral or multilateral organizations.
2. The mass training of staff at different management levels (both central and geographically decentralized). This presupposes a highly organized plan of action (a national strategic training plan, as in Senegal, for example) with clearly established aims, and the existence of institutions both inside and outside of education that are capable of carrying it through.
3. Systematizing M&E procedures, which could contribute to institutional capacity building. The aim is to make the most of experience and develop institutional memory.

Generally speaking, the question of human resources arises at all levels of the education system in many countries. However, it is of particular interest where information systems are concerned, mainly because of the technical nature of certain required skills. These relate to ability to do the following, which could be broken into two main categories:

At the managerial and monitoring level:

- Designing short-term and annual working plans.
- Having an overall vision on the needs of each school's administration.
- Being able to analyse and realize a diagnosis of an EMIS both in terms of technical requirements and management and monitoring needs.
- Planning human resources development.
- Writing and monitoring the implementation of proposals based on specific studies carried out.

The directors of the planning department and the heads of the different sections of this department are mainly concerned.

At the technical level:

- Managing statistical surveys (school censuses, etc.).
- Managing computer applications.
- Retrieving and including information from other systems (demography, household surveys, expenditure, etc.).
- Processing and analysing data.

- Designing and managing databases – while in some cases the design function may be outsourced, it is important to possess internal database management skills.
- Processing and communicating the information.
- Organizing information system management in administrative terms.
- Conducting sample surveys.
- Devising qualitative surveys.
- Organizing and devising plans using the information made available and providing the necessary technical support to policy-makers.

Box 7. The issue of reliability

The most important element in management and monitoring is the reliability of the data and information used in strategic decision-making, and it should not be neglected if education policies are to be successfully implemented.

The reliability of information is defined as the degree of confidence one can have in it. This confidence will grow if all stages in the information production process have been subject to repeated checks. As regards the questionnaires used for statistical surveys, the following phases are important.

1) The design of the questionnaire: Special attention should be paid to its user friendliness, clarity in the wording of questions, and the total number of questions. These are factors that influence the respondents' replies and thus their accuracy.
2) The distribution and recovery of questionnaires: They should be very broadly distributed to prevent misinterpretation of the findings. Precise knowledge of the distribution coverage may be helpful in adjusting the data.
3) Persons who complete the questionnaires should be appropriately trained. A user guide should be prepared, as is the case in many countries.
4) Computer inputting of questionnaire information: This means training the data entry operators, but also that some of the inputted data should be automatically checked for consistency.

Basic technical skills must be developed in an area of strategic importance like EMIS at the ministry level as well as at the decentralized levels. Any savings at this level can affect the performance of the education system. However, the presence of such capabilities is not enough; they must be readily available both in central the administrative authorities and at geographically decentralized levels, so that information is managed smoothly and consistently across an entire territory. Positive interaction

between these different skills that are required to work in a coordinated fashion should be based on management regulations and operational administrative procedures to ensure their effectiveness. Finally, there should be special sustained strategies to strengthen and support these capabilities so that they become permanent.

4.5 The importance of an integrated approach to knowledge management in ministries

This need arises from the above-noted interdependencies between educational sub-sectors, as well as between different ministerial directorates. It is intensified through the search for effectiveness and efficiency in the management of education. Indeed, failing to integrate information systems can increasing the number of information sources concerned with the same management field. This in turn has negative consequences for the reliability of the data, information, and knowledge produced.

The integrated approach to information management may be achieved with the support of a well-tested methodology, both in the private sector and in public service. It involves establishing a master plan, which is a strategic move to anticipate changes in the education system on the basis of a detailed assessment of how it is functioning in the present.

The master plan is based on two vital factors. The first concerns the broad general direction of the education system as reflected in national strategic plans; the second relates to the technical aspect and is called the computerization master plan, which provides an overall view of the education system and shapes the information needs of each player and entity. This second factor precedes and guides the computer system to be established.

The computerization master plan determines the timeline for introducing the computer system and establishes the interconnection between the various sub-systems of the overall system – in this case, the education system.

However, it should be noted that the integrated approach in question does not necessarily involve full implementation of the information system. The master plan simply provides a coherent framework for action, from which certain activities may develop simultaneously and others consecutively, depending on the chronology and order set out in the plan.

It enables savings to be achieved, while allowing for gradual forward development.

4.6 Tools and approaches available

Existing EMIS tools are, most of the time, dedicated and designed to meet specific needs based. They are based on data collection questionnaires. However, they often have many limitations: lack of control mechanisms of data entry and consistency, inability to retain data over several years, user-unfriendly ergonomics, etc.

However, efforts are on-going to design generic tools, which include the following:

OpenEMIS: OpenEMIS is a generic open source Education Management Information System (EMIS) developed by UNESCO (www.unesco.org).

In order to contribute to educational policy formulation and planning, based on data and evidence (www.unesco.org/new/en/education/themes/planning-and-managing-education/policy-and-planning/UNESCO Division for Planning and Development of Education Systems (ED/PDE/PER)) engaged in the design of a generic EMIS software called OpenEMIS. The software was meant to constitute a basic, customizable, and affordable EMIS tool for countries with weak statistical databases to be able to adapt it to the needs of specific national contexts. The first such tool was tried out and disseminated some two years ago, but bugs soon appeared, which pointed to the need for improvement. In response to the repeated requests of data managers and planning experts in education ministries for an improved version of OpenEMIS, efforts to fix the problems and to further improve the software have been made. In January 2011, an improved, functional version of OpenEMIS was released (see the website dedicated to OpenEmis: www.openemis.codeplex.com/).

StatEduc: StatEduc is a database software designed by the UNESCO Institute for Statistics (UIS) to meet the needs of Member States in terms of education statistics and indicators. The tool has some generic characteristics and has been implemented in several countries.

DevInfo: DevInfo is a powerful database used for compilation and dissemination of data on human development. In a decade of innovation, the software has evolved into database systems for decision-making based on information and for promoting the use of data in favour of human

development. The DevInfo project is an initiative of several organizations managed by UNICEF on behalf of the United Nations. However, this tool is not only focused on education; it takes into account several aspects such as health, economy, etc. (see UNICEF website).

IIEP training materials: IIEP has developed a coherent set of training materials in the field of information systems. This documentation covers the overall process of statistics production: the design of questionnaires, the analysis of database structures, and the production of indicators.

4.7 Final remarks

In line with the aims of the present guide, this chapter has offered a general introduction to the issue of knowledge base management in education systems. Special emphasis has been attached to EMIS because of its significance in producing information within ministries.

The difficulties generally encountered have been summarized in terms of four observational dimensions, which may also provide a basis for examining/assessing information systems within education ministries. They are the informational, organizational, technological, and human resource dimensions.

However, in spite of the importance of educational statistics in efforts to mobilize knowledge/information in education ministries, it must be emphasized that they only represent part of all the information needed to manage education. In this respect it has been shown that, from the organization chart of a ministry, it is possible to have a general overview of the information needs corresponding to the tasks assigned to each entity.

This varied information can only be properly understood by means of a structured initiative – a consistent framework for action. The master plan concept described here is one of the approaches used for this purpose. It also highlights the importance of an integrated approach, without which the establishment of an information system may be tedious, costly, and ineffective.

Finally, mobilizing information/knowledge is only really helpful if it is applied to the decision-making process. Compliance with this insistence on rationality will be that much greater if education systems are managed in a participatory and inclusive way. This fact has to do with the crucially important role to be assumed by all those actively involved

in education, and extensive circulation of the information may contribute effectively to it.

4.8 Related reading

Connal, C.; Sauvageot, C. 2005. *NFE-MIS handbook: developing a sub-national non-formal education management information system* (available on CD-ROM). Paris: UNESCO.

Connal, C.; Sauvageot, C. 2007. *Manuel SIM-ENF: développement d›un système d›information pour le management de l›éducation non formelle (SIM-ENF) au niveau sous-national*. Paris: UNESCO.

Kemmerer, F.N. 1994. *Utilizing education and human resource sector analyses*. (Fundamentals of Educational Planning, n° 47). Paris: IIEP-UNESCO.

Moses, K.D. 2001. 'Educational management information system: what is it and why do we not have more of it?'. In: *TechKnowLogia*, *3*(1), 8–12.

Nakabo-Ssewanyana, S. 1998. *Statistical data, the underestimated tool for higher education management: the case of Makerere University*, AAU research paper n° 1. Kampala: AAU.

Nonaka, I.; Takeuchi, H. 1997. *The knowledge-creating company: how Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

Powell, M.; Trucano, M. 2006. *Rethinking education management information systems: lessons from and options for less developed countries*. Working paper, n° 6. Washington, DC: World Bank.

PROAP. 1993. *Education for All monitoring and follow-up information systems, Vietnam: report*. National Workshop on Education for All [EFA] Monitoring and Follow-Up Information Systems. Hanoi, 29 November–4 December 1993. Bangkok: PROAP.

PROAP. 1995. *Education for All monitoring and follow-up information systems, Thailand: report*. National Workshop on Education for All [EFA] Monitoring and Follow-Up Information Systems. Chonbure, Thailand, 4–7 April 1994. Bangkok: PROAP.

SEAMEO INNOTECH. 1995. *Education for All monitoring and follow-up information systems: report of proceedings, various pagings*.

Workshop on Education for All [EFA] Monitoring and Follow-Up Information Systems. Manila, 24–27 January 1995. Quezon City (Philippines): SEAMEO INNOTECH.

Shrestha, G.M. 2001. *EMIS thematic presentation*. Sanothimi (Nepal): DOE.

Sultana, R.G. 2002. 'An EMIS for Palestine: the Education Management Information System in the West Bank and Gaza Strip'. In: *Mediterranean Journal of Educational Studies*, *7*(2), 61–92.

UNESCO Institute for Statistics. 2003. *Programme de renforcement des capacités statistiques de l'éducation de soutien* à *la République de Guinée: rapport diagnostique*. Montreal: UIS.

UNESCO Institute for Statistics. 2003. *Programme de renforcement des capacités statistiques de l'éducation de soutien* à *la République du Niger: rapport diagnostique*. Montreal: UIS.

Wako, T.N. 2003. *Education Management Information Systems (EMIS): an overview*. Harare: UNESCO.

Windham, D.M. 1988. *Improving the efficiency of educational systems: indicators of educational effectiveness and efficiency*. Tallahassee: Florida State University.

V. Planning and Managing Human Resources

5.1 Introduction

What should education systems address?

Education systems address the needs of both the individual and society. For the individual, this is dictated by the 'right to education', whereas for society its role consists in the 'provision of needed expertise'. Considering education systems from a human resource perspective, we can identify a dual function, namely: (1) the human resources needed by the education system to function properly; and (2) the qualified human resources the education system provides to society.

However, for practical reasons, this section deals only with the first type, i.e. the human resources needed by the education system. As for the human resources that are the outcomes of the education system, they have been addressed in *Chapter 2* above on strategic planning.[9] This chapter will focus on key functions relating to human resources planning and management that need to be performed by the MoEs to ensure its smooth functioning.

Education is a human right and, in many countries, compulsory until the age of 16. There is little debate on what output is needed until age 16. All societies need literate, responsible citizens. It is usually from age 16 that the profile of education system graduates becomes problematic. On the other hand, education systems are suppliers of expertise needed by society and the economy. Considered as a right, education has to take in, and plan for, all school-age children.

Generally, education planning is input-driven in the first years (kindergarten, primary) and output-driven in the later stages (higher education). For instance, planning for primary education and general secondary education is more or less restricted to input (i.e. education as

9. Strategic planning should cover: (1) how to develop an education system, taking into consideration various societal needs and the human and financial resources available; and (2) dialogue functions – ministries of finance, education, labour, and planning etc. – which would allow an understanding of the various needs of society.

a human right), while TVET and higher education need to take output aspects into consideration (engineers, medical doctors, and technicians).[10]

The human resource function varies according to the relative importance of the public sector in the education system. When the vast majority of schools are public, the MoE usually takes care of all human resource issues (teacher recruitment, projection, deployment, training, management, etc.). In some countries, such as Lebanon, the Democratic Republic of Congo, and Haiti, however, the private sector has reached up to 90 per cent of the education system, which calls for new proactive roles/functions to be played by the ministry, including legislation, regulatory frameworks, supervision, inspection, and monitoring. Therefore, the human resource function will be differently performed to reflect the different roles played by the MoE.

Following this overview that briefly describes what education systems should address when planning and managing human resources in education, this chapter will review: (i) the role and core functions of education ministries in relation to human resources; (ii) the types of challenges faced in the planning and management of human resources; (iii) the types of capacities that need to be developed to address the challenges; (iv) what tools and approaches are available for developing the required capacities; (v) what resources are available for this purpose; and finally (vi) where further information on the tools and approaches to enhance PPM capacities is available.

5.2 Issues requiring PPM attention

The following section will review different types of management and planning functions of education systems, in particular concerning core planning and management functions of education ministries. It then identifies key elements (such as demography and statistics) that contribute to human resources analysis, planning, and management. By way of concluding this section, it briefly discusses challenges and constrains for human resources planning and management.

10. Beyond primary education, differentiated profiles need to be planned, looking at the needs of the labour market (depending on its orientation towards the service sector or the production sector). This aspect is briefly addressed in *Chapter* 2 on strategic planning.

Two types of management functions

Every education system has two types of management functions in order to perform effectively: developing the teaching profession, and providing for the system's own management. Planning and managing human resources in education should take these two basic functions into consideration.

(a) Planning and managing teachers

In education there are learners who go to school. For the learning process to take place there is a need for facilitators. Hence there is a clear linkage between teachers and students, first in terms of quantity but also in terms of quality. A growing number of students entails a parallel increase in the number of teaching personnel, managers, and assistants. Similarly, improving the quality of education will require an improvement in the teacher/student ratio.

Planning and managing teachers, as well as those who are engaged in managing the education system such as managers (principals, regional directors) and assistants (librarians and lab assistants), is a large-scale and complex operation. In many countries, over 90 per cent of the education sector's operational budget, i.e. the recurrent cost, is devoted to teachers' salaries.

It is impossible to talk about students/graduates and schools without talking about teachers, principals, lab assistants, and even drivers and cleaners. They represent a cost that grows with the number of students and with the quality of teaching staff (notably with regard to the number of lab assistants, librarians, psycho-social workers, nurses, etc.).

The teaching and learning function demands planning and management of the following:

- Recruitment of teachers
- Deployment of teachers, including transfer, promotion
- Carrier development, in-service training
- Salaries and other social packages and benefits
- Contracts
- School construction, maintenance, and management
- Provision of textbooks and other learning materials

Further explanations of each item relating to the planning and management function of teachers will be dealt with in *Section 5.3* on Capacity development requirements.

(b) Planning and managing other education professionals (planners, managers, statisticians, regional directors, etc.)

Human resources (hereafter referred to as HR) planning and management deals with the employees of the education system, namely: decision-makers; central planners and managers; district-, local-, and school-level managers and support staff; and teachers. Inspectors, pedagogic advisors, curriculum reviewers/designers, textbook authors, publishers, graphic designers, etc. could also be included here.

Based on the guiding principles for conducting a functional analysis of education ministries,[11] the following main functions/elements could be analysed with a view to making the core planning and management functions of the ministries more efficient and effective, leading to strengthened capacities of education professionals.

MoE mandates and attributions. The MoE's mandate is to organize effectively the provision of education. The MoE's varying attributions include education financing (in some cases it may be limited to proposing a budget in coordination with the ministry of finance), personnel management and policies, and examinations in education systems. HR is the tool for implementing this mandate and its attributions. A functional audit will examine: (1) whether MoE controls both policy and practice to discharge their responsibilities effectively; and (2) conflicting and overlapping attributions between MoE and other line ministries.

Relationships between MoE's structures, functions, and tasks, including coordination and M&E functions. MoE should have structures (units/ sections of an organization such as departments), functions (set of activities), and tasks clearly described and articulated in the form of a diagram/organigram including an organizational chart. The relationships between these structures are what links HR together and makes them function as one mechanism. Further, consistency and coherence between structure(s), functions, and tasks within the MoE need to be ensured. An

11. R. Sack; M. Saidi. 1997. *Functional analysis (management audits) of the organization of ministries of education*. Fundamentals of Education Planning series N° 54. Paris: IIEP-UNESCO.

audit would review whether: (1) structures have clearly defined functions; and (2) functions are appropriately located in a given structure.

Organization and use of information within MoE so as to make HR perform better. Types of information can be categorized in terms of time range: (1) day to day information; (2) annual events (school year); (3) strategic decisions and programming (long-term), which can be divided into both informal and formal communications. A functional audit examines how information flows within the MoE, and how the MoE organizes information and produces quality information. Effective communications and coordination would be principally based on existing procedures, rules, and regulations (PRR) that exist within the MoE.

MoE reward structures in relation to its staffing patterns so as to improve HR performance. Generally, staff performance is linked to reward structures, of which there are two types: performance-based and rules-based, which may coexist in the MoE. An audit reviews the reward structures by their characteristics and how the MoE distributes incentives and sanctions; and by the degree of transparency and adequate flow of information and communication.

Role of PRR in guiding individual behaviour within the organization to improve HR performance. PRR can come in the form of a complete set (e.g. in a book) or can be a combination of different sources, including administration manuals, operational manuals, administrative circulars, decrees, laws, etc. Typically, coherent and consistent PRR should deal with more administrative aspects of behaviours within the MoE. A functional audit examines (1) whether an up-to-date 'manual of operations' exists for PRR, and (2) staff awareness on and compliance to PRR.

Key areas of analysis crucial for HR planning and management

Information and data concerning the following elements (demography, education statistics, policy, social demand, enhancing quality) need to be well collected, analysed, and reflected when conducting any type of HR analysis, planning, policy review, formulation, as well as human resource management (HRM).

- **Demography:** This will show major population trends (baby booms, aging population) as well population structure (age pyramid). When the population is growing, the number of students increases; hence the need for more facilitators (i.e. teachers, managers, inspectors).

Human and financial resources are scarce in many cases, and the planning is largely dictated by the absorption capacities of the economy. Demographic aspects also need to be taken into account, particularly in developing countries where population growth and a higher percentage of the dependency ratio are still major concerns. A high dependency ratio means that those of working age – and the overall economy – face a greater burden in supporting the aging population and youth. Education systems should keep an eye on demography and plan for the facilitators needed over time (5–10 years). In some countries, there could be a need to phase out (or redeploy) some of the HR because of a decreasing demography.

- **Education statistics:** These will provide planners with the numbers of students passing from one level to the next, and thus allow them to build models or projections into the future. Institutionally, the demographic aspect requires a strong statistical function.
- **Policy:** This is usually formulated in constitutions, legislation, government strategies, development plans, poverty reduction documents, etc. Policy allows planners to develop plans that will be supported by decision-makers at all levels. All policy aspects related to access and quality have an impact on HR planning and management.
- **Social demand:** Education systems should be alert to increased social demand: higher standard of living (this means that families can afford to send their children to school for longer periods); laws banning child labour; fewer out-of-school children, etc. Education systems should not simply wait for social demand for education to increase; they can also develop policies aimed at increasing social demand.
- **Enhancing quality**[12] (international standards, including EFA goals on access equity and quality, MDG goals): Education systems should be constantly enhancing quality – fewer dropouts; a better teacher/student ratio; more supporting functions (labs and lab assistants; libraries and librarians; psycho-social support and advisors, etc.).

Challenges and constraints for HR planning and management

Several studies, including the one carried out by IIEP,[13] have highlighted that there are different levels of constraints and challenges to be considered when planning and managing human resources.

12. Social demand and quality are more government-wide (political) functions.
13. S.J. Hite; A. De Grauwe. 2009. *Capacity development in educational planning and management: Learning from successes and failures*. Paris: IIEP-UNESCO.

Socio-political and cultural contexts are significant determining factors that affect HR planning and management. Context-based constraints and challenges are linked to: (1) the degree of social and economic development; (2) the degree of democracy and political stability/security; (3) the characteristics of the population and its historical/colonial experiences.

Organizational and institutional factors also impact on HR planning and management. Commonly identified constraints and challenges are linked to: (1) organizational levels; (2) leadership and commitment; (3) legal and constitutional frameworks; (4) the degree of decentralization; and (5) readiness to change in accordance with educational reforms.

For instance, institutional capacity for HRM within the ministry is a key factor in HR planning and management. High turnover of the policy and managerial-level senior ministry staff is a critical challenge, as it might have a negative impact on the necessary coordination and cooperation between the MoE and higher education institutions. Organizational capacity is required to develop, process, analyse, and update key educational indicators at all levels to provide the quality improvement necessary for human resources development with a view to strengthening M&E capacities at all levels. Addressing these issues is related to *policy* more than planning. However, it also includes a strong planning component.

5.3 Capacity development requirements

Capacity development requirements in the context of public sector reforms

Following the two strong impetuses – namely the Paris Declaration on Aid Effectiveness (2005) and on-going public sector management and governance reforms that are being implemented in many low- and medium-income countries around the world – CD has become a core mandate for UN agencies, including UNESCO. In this context, it is important to assess the implications of public sector reforms and government-donor cooperation programmes for CD, especially in the education and training sector. More specifically, different levels of capacities should be systematically reviewed.

Forward-looking HR planning and management, accompanied by short- and long-term plans, require a wide range of capacities in the

following domains, which are often interrelated: Technical skills should be backed up by management capacities; solid coordination mechanisms between central and regional levels of education authorities should also be put in place; and one should also look at the socio-political dimensions of planning, i.e. larger institutional contexts, including legal frameworks in a given country. Capacity development requirements are explained according to the following levels:

1) *Institutional level:* Strengthening of the institutional capacity necessary for the effective functioning of national education institutions and organizations, such as policy and legislative frameworks relating to human resources and management. Such regulatory and legal frameworks would include both written and unwritten rules and regulations, as well as coordination mechanisms.
2) *Organizational level:* Strengthening of organizational capacity at the level of education institutions, through the reinforcement of key functions and processes involved in education service delivery, such as planning and resource management at central and decentralized levels. Mandates, roles, responsibilities, organizational structures, and internal coordination mechanisms are also essential elements.
3) *Individual level:* Strengthening of individual capacity in education ministries through the reinforcement of technical know-how and skills, competencies, and profiles of staff, including teachers.

Section 5.4 will further explain the methodological framework/ approach to assess capacity gaps and assets in educational planning and management, namely the joint UNESCO-UNDP CAPNAM framework in educational planning and management.

CD at the institutional level

Capacity in establishing a legal framework: setting up rules, regulations and procedures for HRM based on equity, transparency, and efficiency. As this initiative needs to involve and coordinate with multiple stakeholders, such as the ministries of legal affairs, labour, and social affairs, as well as ministries of education, the eventual roles of education stakeholders may be limited to participating in assessing gaps and assets in the current regulatory framework and environment. (CAPNAM in the areas of educational planning and management could guide this process.)

CD at the organizational level

In order to enhance capacities in planning and managing teachers as well as MoE staff, the following areas of capacities need to be reviewed systematically and eventually developed in education authorities.

Capacity in diagnosing HR issues and problems, including capacity in planning the best possible balance between teacher supply and demand. In order for the education system to function effectively and efficiently, it is necessary to have capacities in designing and implementing appropriate policies on teacher recruitment, deployment, training, career development, and career/performance assessment.

More specifically, the following core areas in HRM would require capacity development interventions such as the following:

1) *Proper staff planning:* Planning of the actual requirements of teaching and non-teaching staff is often difficult due to the attrition, availability, and utilization of staff – particularly teachers. It is also due to weaknesses in the existing information systems and management behaviours/style/culture.
2) *Sustainable staff recruitment, remuneration, deployment, and career policies:* In all education systems, decision-makers and policy-makers have to make difficult choices. While they have to address additional staff requirements, including increases in staff remuneration, at the same time they need to take the financial and human resources constraints into account.
3) *An appropriate monitoring and information system:* In many instances serious shortcomings are observed in monitoring and information systems concerning teachers and their posts, which make precise staff planning and allocation, as well as adequate and transparent management decisions, difficult.
4) *Adequate organizational rules and structures:* Coherent, up-to-date, and well enforced regulations and procedures, as well as consensual codes of conduct, can largely facilitate rational staff management decisions and their acceptance (Source: IIEP-UNESCO. 2009. *Educational planning and management: Course No. EPM 312*).

Capacities in data construction and management: establishing data and information systems

An improved information system (knowledge base)

This could help provide a more accurate diagnosis of the current situation and better forecasts for the future. Data relating to employment/staffing

situations within education ministries, training flows, and the nature of training are required. The knowledge base concerns capacities in data collection, processing, analysis, and presentation based on qualitative and quantitative analyses. The flow of information should fall from the lowest (district for instance) to the highest level (central MoE level). There is a need for harmonized data collection for comparison purposes as well. Capacities are also required to translate those results into policy development.

Capacity in building simulation models

A simulation model in HR planning and management is 'a simplified representation of reality, a dynamic combination of the most relevant elements needed to describe that reality' (Source: IIEP-UNESCO. 2009. *Educational planning and management: Course No. EPM 312*).

Projection techniques and simulation models are at the core of educational planning since they help convert the policy objectives into specific targets that can be expressed in quantitative terms. Developing capacities in simulation models would better assess what is required for implementation, and then translate/calculate them into the required financial resources, relating to human resources, including teachers. Eventually, they are also necessary tools for policy dialogue and the formulation of educational strategies. Chapter 6 on 'Planning and Managing Financial Resources' could be a further reference for issues relating to simulation models.

Developing HR indicators for M&E

'An indicator is a piece of information provided as figures which only partially document a generally complex phenomenon (an activity, a situation etc.) These are data often presented in synthetic form, providing information on the progress, the achievement or the state of a situation' (Source: IIEP-UNESCO. 2009. *Educational planning and management: Course No. EPM 312*).

Developing specific, measureable, attainable, relevant, and timely (SMART) indicators could help set up tools of analysis for HR planning and management. There are important pre-requirements to be considered in producing such indicators. Technical and political criteria can be defined as being the major criteria necessary for further elaboration and development of a set of indicators. Indicators can be categorized into two groups: (1) static indicators consisting of the raw data relating to a situation

at a given time (number of employees in a given category, number of job vacancies, number of replacements, training budget, hours worked, etc.); and (2) dynamic indicators reflecting change in certain parameters that are specific to the HRM process (staff growth rate, staff turnover, rate of absenteeism, percentage of trained staff, promotion rate, etc.).

Indicators may be also grouped by broad HRM sub-functions to constitute various trend charts: (1) recruitment; (2) assignment; (3) transfers; (4) training; and (5) monitoring the utilization of teachers (Source: IIEP-UNESCO. 2009. *Educational planning and management: Course No. EPM 312*).

Technical criteria would emphasize the importance of the relevance of an indicator to the set objectives. Data availability is another technical criterion to be considered. Not only should data be available, it should also be accurate. Is there any baseline data available? Or are there any indicators derived from the simulation model? Properly defined indicators are time-consuming to create and expensive to measure.

Data availability also depends very much on the **institutional and organizational capacities** of the line ministries, including the MoE, the central statistics bureau, and the ministry of planning in a given country. Strengthened M&E capacities at all levels are also required to develop, process, analyse, and update key educational indicators for the quality improvement necessary for result-based human resources development.

Capacity in conducting management and functional audit in education ministries

Management audit, or so-called functional analysis, is aimed at various types of organizational reform, including organizational analysis, reform of the education ministries, audit of specific educational institutions, as well as effective management of human and financial resources. Management audit reviews the institutional capacity and organizational behaviours of HRM in education authorities.

Within the MoE, functional audit may look at the functional clarity of the MoE staff, existing regulatory frameworks, and the current management mechanism, including risk management and accountability mechanisms.

Consequently, the expected outcomes of the functional audit will eventually observe changes in institutional performance, adaptability,

accountability, leadership in the areas of setting a vision, policy formulation, plan implementation, M&E etc. within the organization.

CD at the individual level

Teacher development, including teacher training. Being closely interlinked with organizational level capacities, teacher development through providing various types of training (both in-service and pre-service training) and continuous career development is a driving force to motivate teachers. It is crucial to review systematically existing individual and collective training plans, and then to establish a common vision for various training plans so as to provide continuous upgrading of teacher qualifications and professionalization of teachers.

Beyond teachers, **MoE individual staff development** is also crucial for the education authorities to perform more effectively. The afore-mentioned capacity needs assessment framework would assist in identifying individual capacity needs in terms of competencies, skills, and further career development for MoE staff based on their duties and tasks (job descriptions).

5.4 Tools and approaches available

Institutional tools and approaches for HR planning and management

Box 8. Forward looking and genuine HRM approach

IIEP advocates a systematic and professional approach to managing human resources in education, which it considers crucial to the success of an education system. Countries have to devise mechanisms to develop and implement a comprehensive, forward-looking, and genuine HRM approach in the education sector. Attention also needs to be given to the everyday routine management activities that continue to be characterized by delays, lack of transparency, favouritism, etc., and thus constitute a major source of teacher dissatisfaction and disengagement.

Attempts to improve teacher management need to start with a careful diagnosis of the main current problems that a country is facing in this area. Some problems require new management policy choices concerning, for instance, the training, career structure, or utilization of teachers and other staff.

In addition, there is generally a need to improve the technical tools (information system, forward planning, etc.), the social relations (structures and procedures of participation of staff unions), and the organization (creation of a HRM department with major responsibilities, delegation of tasks to regional and local levels, more consultation/participation mechanisms, etc.), which underpin the management of teachers.

IIEP's approach covers these different dimensions of HRM (strategic, technical, and organizational) applied to teachers.

The approach has three major components:

- Major current issues and policies relating to HR and teacher management.
- Tools for better HRM.
- Social relations and organizational aspects of teacher management

Source: IIEP (www.iiep.unesco.org/capacity-development/training/courses-at-iiep/specialized-courses.html)

Box 9. Projections and simulations: Tools for policy dialogue and educational strategies

Projection techniques and simulation models are at the core of educational planning, since they help convert the objectives that are sought after into targets that can be expressed in quantitative terms. Such techniques and models allow an assessment of what is required for implementation and make it possible to translate the tasks that are to be done into calculations of the required financial or real resources, such as schools or staff. They are necessary tools for policy dialogue and the formulation of educational strategies.

Source: IIEP (www.iiep.unesco.org/capacity-development/training/courses-at-iiep/specialized-courses.html)

Diagnosis tools and approaches for HR planning and management

TTISSA toolkit/analytical framework

Provider: UNESCO/ED

Teacher Training Initiative for Sub-Saharan Africa's (TTISSA) main objective is to support countries in sub-Saharan Africa to develop teacher policies in the context of EFA. The unprecedented growth of enrolment in Africa since 2000 poses huge challenges for teacher policies: recruitment, training, pay, status, management, social dialogue, etc. Lack of a holistic

and shared vision of the teaching issue is an obstacle to the emergence of new teacher policies to respond to the multiple challenges posed by EFA.

UNESCO's Methodological Guide for the Analysis of Teacher Issues fills this gap. Using both quantitative and qualitative approaches, it enables stakeholders to analyse how a country's education system fares on the full array of issues relating to teachers – from the general context in which they work to their education, conditions, and management, as well as the social and professional context in which they operate – and to take steps to address the challenges identified. The guide was developed through a participatory and field-based approach tested in Benin and Uganda and validated by an advisory group made up of national delegates and development partners. This process has engendered great interest in the guide. UNESCO, through this guide, is now supporting national analyses of the 'teacher issue'. These analyses are being led by country teams and conducted through dialogue and information exchange. They include technical staff from relevant government ministries and departments – including education, finance and public administration – as well as from civil society organizations such as teachers' unions. In bringing the full range of actors concerned together, it is anticipated that capacity will be developed and consensus reached.

(*Source*: UNESCO/ BREDA website and www.unesdoc.unesco.org/images/0019/001901/190129e.pdf)

The CAPNAM framework in educational planning and management

Provider: UNESCO/ED

The joint UNESCO-UNDP CAPNAM framework in educational planning and management would guide primarily in carrying out capacity needs assessments in terms of capacity gaps and assets in the five different policy domains (HR planning and management, strategic planning, financial planning, governance, and learning environment), and also in essential functions in planning and management (engaging stakeholders, assessing situations, setting mandates, formulating policies and budgets, implementation, and M&E), as well as in four different capacity levels (institutional, organizational, individual, and knowledge base). The methodology would also eventually aim at developing and launching CD programmes in the areas of educational planning and management at the country level. Based on a thorough and systematic capacity assets and needs assessment, this methodological framework aims to enhance the capacities of national and sub-national governments and institutions in

designing national capacity development plans and programmes. These plans and programmes would also be accompanied by a set of policy recommendations in the education sector within the context of public sector reforms, involving relevant stakeholders that would include donor agencies, national authorities, and civil society.

Strengths and weaknesses of available tools and approaches

Concerning data and information systems, various experiences show that data often becomes too bulky and too technical, favourable to statisticians and seems less favourable to those who deal with educational policies and education support programmes. Application of both qualitative (such as one-on-one interviews, semi-structured interviews, focus group discussions) and quantitative (surveys, questionnaires) analyses is important to diagnose the current situation and provide better forecasts for the future. The two approaches complement each other and are not exclusive of each other. This aspect should be taken into account, as caution should be taken not to overload ministry staff with additional work to develop, monitor, and measure indicators.

Conducting surveys and studies can be costly and time-consuming for developing countries, and funding can become an issue. In some cases, dissemination of results can be quite sensitive, as it may reveal some results that are not necessarily leading to a positive image of the functioning of the education system in a given country.

It is important to ensure a proper transfer of technical skills and knowledge when technical assistance is provided by external assistance to conduct surveys/studies, or when setting up observatories for training and employment etc. Technical assistance from external agencies should focus on providing methodological aspects, rather than on providing a ready-made design of a CD project, in order to give sustainability to the process as well as to further CD in a given country.

To conclude this section, it may be useful to list some examples of strategic directions for further consideration in view of developing CD programmes and activities in the area of HR planning and management at the country level. In line with the available approaches, the tools proposed in *Section 5.4*, and forward-looking HR planning and management, the following areas could be suggested as strategic interventions for furthering the potential of UNESCO's interventions/

programmes for cooperation with MoE and key national stakeholders, as well as development partners at the country level.

- Review policies on the supply and demand of teachers and MoE staff: This aims to systematically review existing policies and practices pertaining to teachers and MoE staff, and to identify policy gaps vis-à-vis policy objectives and propose a set of policy recommendations as a way forward.
- Review/develop policies/strategies in the area of teacher education and training (both pre-service and in-service): This is aimed to systematically review existing policies and strategies and to develop comprehensive and sustainable teacher education policies/strategies.
- Strengthen capacities in policy analysis on HR development: This is closely linked with the items above; it is aimed to analyse and review policy goals, objectives, priorities, as well as strategies through a set of analytical angles/principles (also looking at human and financial resources and management structures), and identify policy gaps in HR development.
- Strengthen capacities in developing HR indicators and their analysis and management: This is aimed at strengthening capacities pertaining to data collection, analysis, processing, management, and monitoring.

5.5 Sources of supply/support for capacity development

Forward-looking HR planning and management

IIEP-UNESCO

More information on www.iiep.unesco.org

IIEP offers several modules (such as Education Sector Diagnosis; Education strategies and policy options; Projections and simulations; Planning and management of human resources) dealing with fundamental aspects and core principles of HR planning and management. These modules are delivered through long- and short-term courses, including the following:

- *Specialized course on planning and management of human resources:* This two-week course is provided by IIEP and organized annually, usually in February-March at IIEP, Paris, France.
- *Distance course on Education Sector Planning:* This 12-month distance course is offered by IIEP in cooperation with national training institutions.

- *Advanced Training Programme in Education Planning and Management:* This nine-month programme is provided by IIEP and organized annually, from September to June, at IIEP, Paris, France. Training is conducted in English and French.
- *The Regional Training Course (RTC)* and the *Education Sector Planning ESP:* RTC is a three-month course delivered in Spanish in Buenos-Aires, and ESP is a one-year distance course.
- *Sectoral Analysis and Management of the Education System (SAMES):* This is a distance learning course offered by Pôle de Dakar (more information on www.poledakar.org).

Functional and organizational/institutional analysis for education ministries

EuropeAid. 2005. *Institutional assessment and capacity development. Why, what and how?*. Luxembourg: Office for Official Publications of the European Communities.

Sack, R.; Saidi, M. 1997. *Functional analysis (management audits) of the organization of ministries of education*. Fundamentals of Education Planning series, N° 54. Paris: IIEP-UNESCO.

Radi, M.; Chang, G.C. 2005. *Capacité de mise en œuvre des plans de développement de l'éducation: cas du Niger* [Implementation capacity for education sector development plans: the case of Niger]. Politiques et stratégies d'éducation: 9. Paris : UNESCO.

Teacher development

Schwille, J.; Dembélé, M. 2007. *Global perspectives on teacher learning: improving policy and practice*. Paris: IIEP-UNESCO.

TTISSA toolkit and analytical framework are available at: www.unesdoc.unesco.org/images/0019/001901/190129e.pdf

Graduates tracking surveys/studies

More information is available at
www.worldbank.org and IIEP website at www.iiep.unesco.org

5.6 Further references

Andrabi, Tahir; Das, Jishnu; Khwaja, Asim Ijaz. 2011. *Students today, teachers tomorrow? Identifying constraints on the provision of education* (Policy research working paper series WPS, Nº5674). 48 p.
www-wds.worldbank.org/external/default/WDSContentServer/IW3P/IB/2011/06/02/000158349_20110602163805/Rendered/PDF/WPS5674.pdf

Annual Commonwealth Teacher Research Symposium. 5. Bloemfontein, *South Africa, 23-25 March. 2010. Ochs, Kimberly; Degazon Johnson, Roli; Keevy, James. 2011. Enhancing teacher professionalism and status: promoting recognition, registration and standards. 64 p.*
www.thecommonwealth.org/files/234058/FileName/Enhancing_Teacher_Profe ssionalism_and_Status.pdf

Bennell, Paul; Akyeampong, Kwame. 2007. *Teacher motivation in Sub-Saharan Africa and South Asia (Researching the issues, Nº071). xii-92 p.*
www.dfid.gov.uk/R4D/PDF/Outputs/policystrategy/researchingtheissuesno71.pdf

Cooper, James M.; Alvarado, Amy. 2006. *Preparation, recruitment, and retention of teachers (Education Policy Series, Nº005). 26 p.*
http://unesdoc.unesco.org/images/0015/001520/152023e.pdf

Goyal, Sangeeta; Pandey, Priyanka. 2009. *Contract teachers.* 25 p.
www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2010/01/11/000334955_20100111034349/Rendered/PDF/526330NWP0Cont10box345574B01PUBLIC1.pdf

High-level Group on Education for All, EFA. Meeting. 9th. Addis Ababa, 23–25 February 2010. UNESCO. 2010. *Teacher attrition in Sub-Saharan Africa: the neglected dimension of the teacher supply challenge: a review of literature.* 74 p.
http://unesdoc.unesco.org/images/0018/001881/188197e.pdf

Global Campaign for Education, GCE. 2006. *Teachers for all: what governments and donors should do* (Policy brief). 74 p. www.vsointernational.org/Images/GCE_Teachers_For_All_tcm76-22710.pdf

Göttelmann-Duret, Gabriele; Yekhlef, Amina. 2005. *Teacher management: a selected bibliography* (The Management of teachers). 75 p. http://unesdoc.unesco.org/images/0019/001919/191949E.pdf

Mpokosa, Chikondi; Ndaruhutse, Susy. 2008. *Managing teachers: the centrality of teacher management to quality education: lessons from developing countries.* 69 p. www.vsointernational.org/Images/Managing_Teachers_tcm76-20998.pdf www.cfbt.com/evidenceforeducation/pdf/MT%20(v4).pdf

Obanya, Pai. 2010. *Bringing back the teacher to the African school* (Fundamentals of Teacher Education Development, Nº001). 99 p. http://ptte.gov.ng/electronic%20version-pai-latest-publication%5B2%5D.pdf

OECD. *Attracting, developing and retaining effective teachers* (website) www.oecd.org/edu/teacherpolicy

Rogers, F. Halsey; Vegas, Emiliana. 2009. *No more cutting class? Reducing teacher absence and providing incentives for performance* (Policy research working paper WPS, Nº4847). 31 p. www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/02/26/000158349_20090226142341/Rendered/PDF/WPS4847.pdf

Schwille, John; Dembelé, Martial. 2007. *Global perspectives on teacher learning: improving policy and practice* (Fundamentals of educational planning, Nº084). 146 p. http://unesdoc.unesco.org/images/0015/001502/150261e.pdf

Timperley, Helen. 2008. *Teacher professional learning and development* (Educational practices series, Nº018). 31 p. http://unesdoc.unesco.org/images/0017/001791/179161e.pdf

UNESCO. 2005. *Capacity building of teacher training institutions in Sub-Saharan Africa = Les Institutions de formation des enseignants en Afrique sub-saharienne: pour un renforcement des capacités*. 224 p.
http://unesdoc.unesco.org/images/0014/001406/140665m.pdf

UNESCO. 2011. *UNESCO ICT competency framework for teachers: version 2.0*. 21 p.
http://unesdoc.unesco.org/images/0021/002134/213475e.pdf

UNESCO Office in Bangkok and Regional Bureau for Education. *On teacher education: Capacity development through teacher education in the Asia-Pacific region*:
www.unescobkk.org/education/teacher-education-and-training/about-teacher-education/

UNESCO Office in Dakar and Regional Bureau for Education in Africa, BREDA. 2010. *Methodological guide for the analysis of teacher issues*. 132 p.
http://unesdoc.unesco.org/images/0019/001901/190129e.pdf

VI. Planning and Managing Financial Resources

6.1 Introduction

Growing populations, expanding access, diversifying structures, improving quality, and providing education efficiently all call for the mobilization and management of enormous human, material, and financial resources for education. Governments have the responsibility to: set the rules for the financing of the system; negotiate partnerships with stakeholders, like parents, communities, or external partners; mobilize national resources; and manage them efficiently.

With reference to the conceptual framework presented in *Part I*, financial issues in educational planning and management are important when dealing with (i) strategic policy planning issues assessing the current situation and the resource requirements for the future, or determining the role of the different contributors; (ii) decisions on financial allocations to the education sector and to each sub-sector, and budget preparation; and (iii) financial allocations and financial management throughout the system.

This chapter reviews the main planning and management steps where financial issues play an important role, and the challenges they pose for PPM capacities. It is important to understand that capacity development needs arise, in the first instance, from these challenges. The chapter examines: (i) what ministries should be in a position to do; (ii) the types of challenges posed for PPM; (iii) the types of capacities that need to be developed to meet the challenges; (iv) what tools and approaches are available for developing the required capacities; (v) what resources are available for this purpose; and (vi) where EFOS can find further information on the tools and approaches to increase PPM capacity.

6.2 Tasks and challenges to be addressed by PPM in the field of financial planning and management

Financial issues play an important role at various stages of educational planning: for the diagnosis of the current situation; in policy formulation; for scenario building and anticipation of requirements for the future; for the allocation of resources within the education system and to schools;

and for the follow-up and evaluation of implemented policies. They are also at the basis of discussions with external partners when negotiating and designing their involvement in the education sector.

Financial concerns are different, varying with the level of responsibility in financial management. Managing autonomous institutions, as is often the case at higher education level, implies different responsibilities and management processes than managing resources for dependent institutions. Similarly, financial mechanisms – and consequently management processes – differ according to the degree of decentralization.

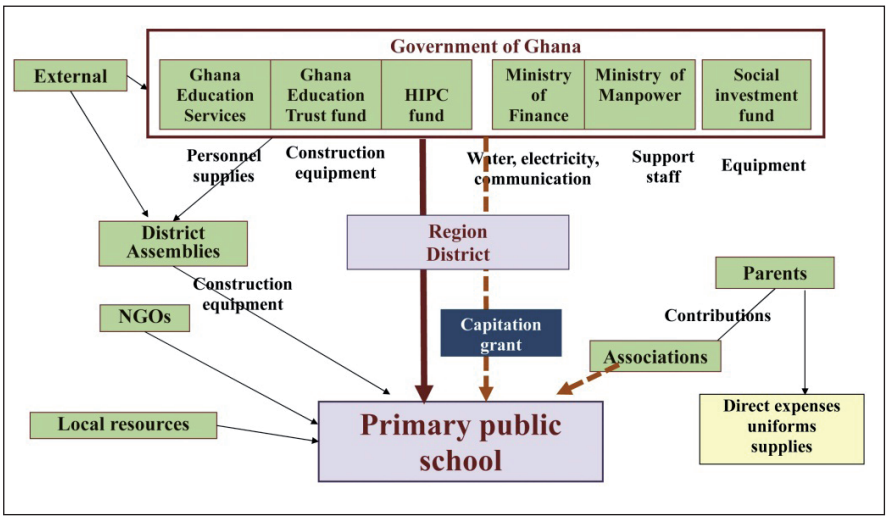
Regarding financial matters, ministries of education should be in a position to know the full costs of education, design funding policies, anticipate the financial consequences of development objectives, articulate policy/planning and management, and make better use of resources (the challenge of measuring performance), which are all discussed further below.

Knowing the full costs of education

Information on education expenditures, on the sharing of expenses between funding bodies, and on the costs at the various levels of education allow for informed decision-making in designing policies aimed at developing education both in quantitative and qualitative terms while controlling costs. Information systems have improved during the last decades; new technologies and relational databases make it possible to manage and process huge quantities of data. However, improvements in data on expenditures, which are often limited to data on government budgets, have been less significant.

The production of complete statistics on education financing and expenditure is the weak point of a many education statistics information systems. The weakness in education financing and expenditure statistics is due to two factors: i) the often complex financing of schools, where different partners may contribute the necessary resources; and ii) the financial management, which can be totally or partially external to the institutions. The following example of the financing of a public primary school in Ghana illustrates this second point.

Figure 3. Financing mechanisms of a government primary school in Ghana



To analyse government budgets for education is certainly helpful, but it is not sufficient to provide a comprehensive view of the country's overall effort in support of education and the full costs at the various education levels. In the countries covered by IIEP's studies, governments are representing about 50–60 per cent of the total spending for education. Families are the second main contributors, bearing about 30 per cent of the total expenditure (in many sub-Saharan African countries), sometimes even more (39 per cent in the Dominican Republic).

The concern of getting a comprehensive picture of what is spent on education in one country is not a new one. To reach more than a simple global estimate of private spending, and to assess the full costs at every level and type of institution (public or private), it is necessary to mobilize specific methods and techniques.

Designing funding policies

This is a vast area because it entails many complex issues, such as sources of financing education, actual expenditure depending on context and resource allocation policies, options to deal with financial constraints, more specific issues related to higher education financing, and government policies regarding non-government (private) education.

While the state remains the prime source of educational expenditure, in particular at compulsory levels of primary and basic education, the role of other actors can be significant at other levels of education, such as pre-school, TVET, higher education, adult and continuing education, and non-formal education. The role of other actors is less studied as it requires special samples and surveys. These important actors are parents and communities (through fees and other contributions in cash and in kind for pre-school, primary, and secondary education), the Church (religious schools), the private sector, and local industry (most often for TVET and higher education). The role of foreign donors, various international organizations, and NGOs is often increasing in many levels of education. Public-private partnerships in education are a promising trend, by which businesses complement limited state resources.

Governments can influence the share of funding between the various contributors. A recent trend is to abolish fees paid by parents at basic education level and replace them with capitation grants. Those policies are reversing the past trend of the 1980s and 1990s to develop cost-sharing mechanisms.

When high net enrolment rates are achieved at primary and secondary levels, or when the demographic growth is low (as it is in the developed countries), more attention is given to the quality of education, which also requires extra resources (teacher training and qualifications, textbooks, learning conditions). There is a hard choice to be made between continuing quantitative expansion of the education system to upper levels (for example building more secondary schools) and investing in the quality and improvement of learning conditions. Various policy options are possible, such as reducing unit costs, increasing cost-efficiency, redistributing expenditure, income-generation activities, and trends towards decentralization.

Higher education is known for having high individual returns and is increasingly subject to cost-sharing. Tuition and other fees are introduced or increased all over the world. Student support, including grants and student loans, is seen as a means to lessen the financial burden of higher education studies for eligible young people.

Non-government or private education can be seen as complementary to government efforts to develop education. These schools provide a choice for learners, satisfy the demand from families who are ready to pay extra for proximity and better learning conditions, and, consequently, decrease

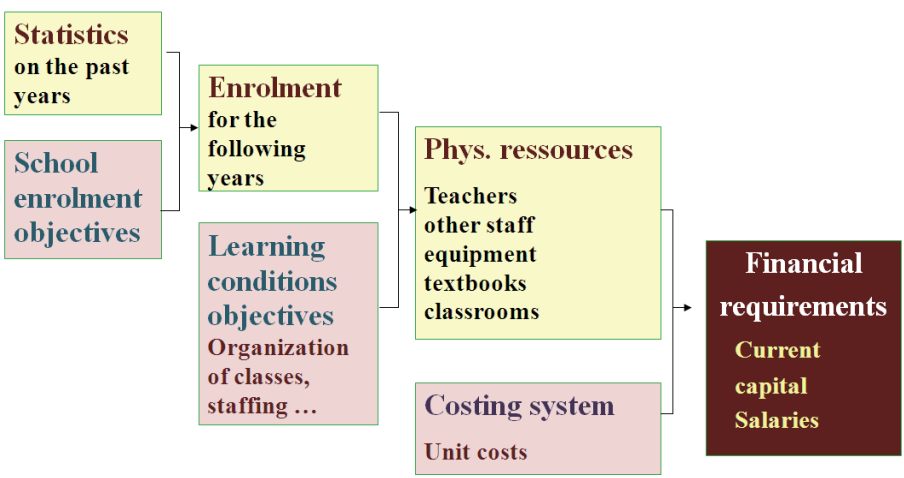
intake pressure for public schools. Their development could also be a sign of the poor quality of education in public schools, which calls for government attention.

Anticipating the financial consequences of development objectives

Building quantitative scenarios constitutes a particularly important element of the educational planning process. These scenarios describe a possible future state of education systems, taking into account the development objectives. They allow planners to anticipate the number of students that will enter the education system, as well as the human, material, and financial resources necessary to accommodate them. The scenarios contribute to the analysis of the objectives' feasibility by quantifying the necessary resources and by comparing them against the financing possibilities in view of the economic perspectives of the country.

Quantitative scenarios should be detailed in annual steps to be implemented to reach the desired future targets, and should compare the required resources against the macro-economic perspective in order to ensure their financial feasibility.

Figure 4. Methods for anticipating resource requirements for education



Anticipation of the resources required is based on a vision of a desirable future. It is therefore necessary to think differently for the long term, medium term, or the immediate future.

- Long-term planning is based on desirable targets, a voluntarism approach, and an optimistic vision of the future, even if economic considerations have to be taken into account.
- Planning for a medium-term perspective (three to five years) should be done in a more realistic, logical approach, and should assess possible scenarios.
- When planning and managing for the more immediate future, the approach should be pragmatic and take into account all constraints. Annual budget preparation should follow this framework.

These different levels of anticipation must be articulated to place immediate action within a longer-term perspective. MTEFs are tools to frame the annual budgets in a multiannual perspective and thus better relate them to the objectives of planning.

MTEFs are also an instrument to facilitate better coordination with financial partners, specifically cooperation agencies, identifying the financial needs to reach the agreed policy objectives and confronting requirements with respective contributions.

The need for projection work is not limited to the preparation of national plans or national expenditure frameworks. Projection work is also required at regional and local levels to help micro-planning and management of the school network. Projections were developing in the recent past, thanks to the diffusion of information technologies and the widespread use of spread sheets. It therefore became possible to automate tedious calculations, leading to the concept of a simulation model. The various above-mentioned considerations are established for a long time, but technology is facilitating their implementation. In fact, it is probably a field where advances have been achieved, and many planning documents are now accompanied by quantitative projections. However, the know-how and the culture for projections must still be extended. If the techniques and tools are well known, efforts are needed to develop the capacity of planners to use them, or even to build their own tools, and to analyse the results, particularly in relation to the economic potential.

Articulating policy/planning and management

Most countries have planning instruments, whether in the form of a five- or 10-year plan setting the broad lines of national action, adjustable plans (often triennial) that are revised yearly, 'master plans', 'frameworks of economic policy', or simple forecasts, simulations, or prospective studies. The content, legal status, and compulsory nature of such instruments vary considerably; some of them are voted by parliament and become law, others are merely indicative government reports.

The programming of investments is usually formalized, especially in countries having recourse to external funding for such investments; the Public Investment Programme, and the Special Investment Programme in many developing countries are examples of such programming.

These documents may incorporate the measures taken in connection with various projects, with their external funding and national counterpart support. Their content often goes well beyond the strict limits of investment operations, and corresponds more to the concept of a development plan embracing investments, training, studies, and research.

There are many stumbling blocks to attaining perfect coordination between multiyear planning and annual budgets, which is an ideal that is never completely fulfilled. Differences in the logic of the two processes, in the people involved, in procedures, and even in administrative routines all create divergences and raise questions concerning the decision-making processes involved in planning and budgeting.

The logic underlying both plans and budgets is at the same time similar and different.

- Plans indicate the policies adopted by government for the country's economic and social development. They project a medium- to long-term picture and do not always quantify their financial cost or specify their sources of financing. Planning, because it reflects a deliberately chosen policy or a line to be followed, is often optimistic in relation to the attainment of its objectives and is subject to wishful assumptions, which may sometimes conflict with reality.
- Budgets are a form of short-term operational planning covering one year. They also reflect the government's chosen policy, but this policy has to be set against short-term economic and financial constraints. Budgets are perforce more 'realistic'.

One reason for the divergence that may exist between planning objectives and budgetary decisions lies in the difference between the people involved in the preparation of plans and those involved in the preparation of budgets.

The preparation of the budget is directly guided by the ministry of finance. In Thailand there is an Office of the Budget attached to the Prime Minister's Office, which has overall responsibility for the budget and its coordination, and negotiates with the line ministries. The Ministry of Finance holds discussions with the financial directors of the line ministries. The preparation of the budget is thus to a large extent the business of financial specialists, even though these civil servants incorporate the political options of their ministries.

Plans are often prepared in quite a different context under the responsibility of the ministry of planning or a high-level administrative body (in Zimbabwe, the Presidency of the Republic). The ministry of planning holds discussions with the planning directorates of the various ministries.

Each of these administrative procedures has its own rules and routine. A time schedule and a sequence of administrative operations are set for the preparation of the budget, and traditionally the budget often tends to renew previous decisions.

Budgetary decisions are mostly dictated by the constraints of the macro-economic context accepted by the government, and in some countries negotiated with external financial partners. The measures accompanying these macro-economic constraints sometimes have significant consequences where budgetary decision-making is concerned. They may include setting a ceiling on the number of civil servants employed, freezing recruitment into the civil service, limiting the civil service wage-bill, and fixing expenditure either in absolute terms or in relation to the overall budget.

Budgetary decisions actually made or negotiated by the MoE are in fact dictated to a large extent by the government's economic policy options, and often have only a marginal effect on the level and distribution of budgetary resources. This aspect may be accentuated by the routine nature of the preparation of the operational budget.

Better coordination between **planning and budgeting** depends on the exchange of information between the parties concerned. This helps

avoid situations in which planners are regarded as fanciful dreamers by budget officers, who do not believe planning objectives are any concern of theirs; and budget officers are accused of retarding the development of education by planners, who do not fully realize the constraints imposed by limited resources.

Since the budget is the manifestation of the government's concrete action over a one-year period, it cannot conform completely to a longer-term plan. However, the decisions made in preparing it must be made in a pluriannual context. A plan, on the other hand, must be realistic and must anticipate macro-economic constraints.

It should be noted that in the preparation of the budget in 'heavy spending' ministries, like the MoE, the main emphasis is on expenditure; where recurrent costs are concerned, the normal recurrent costs of the system are taken into account, as well as those generated by new capital investments.

The implementation of the budget may also be regarded from the angle of **resource allocation within the education system**. The resources listed in the MoE's budget are intended to be used to the benefit of schools and other educational establishments, and the central and regional administrative authorities responsible for running the system.

In most countries, there is no management of teachers' post assignments. Teachers already in service are posted in accordance with administrative transfers, and those newly recruited are assigned to their initial posts. Salary expenditure 'follows' the geographical location of the employee. There is no dissociation between the post, the corresponding budgetary remuneration, and the person assigned to the post.

Another area in requesting specific knowledge and techniques is the **preparation, management, and follow-up of external funding**. In this domain, regular departments have to take over activities previously managed by separate project management units. Strengthening planning capacity and management of external aid is therefore a form of capacity development in this area, and has become crucial to complete the tasks and to discuss and negotiate agreements.

Making better use of resources: The challenge of measuring performance

Education economists have always been keen to research efficient ways of financing and allocating resources that will help make more informed decisions and achieve good results at a lower cost. This concern has triggered much research on the performance of education systems, the decentralization of management systems and the autonomy of educational institutions, or the development of mechanisms to give more responsibility to families. Recent trends are in the direction of using performance indicators linked to budget allocation, often related to state budget reforms and to the increasing importance of results-based budgets.

Linking education costs with results obtained in order to measure performance has gained importance. The development of budgets by programme has improved articulation between objectives and resource allocation. In the logic of these evaluations, the focus is now on the relation between the resources used, the activities executed, and the results achieved.

The question of measuring performance is clearly not only a financial one. A comprehensive evaluation should focus on the resources allocated, but also on the activities carried out, the deliverables, the results, and the impact on the socio-economic situation.

Evaluating the effectiveness of an education system using a limited set of indicators is of both theoretical and practical importance, and requires more attention and research. The complexity of the field of education, the difficulty in measuring output, and the interrelations with other collective and private spheres make it difficult to gauge. On a practical level, the development of these indicators can require an improvement in education information systems, which are currently more focused on the inputs of education systems.

It is becoming common practice to associate performance indicators with budget allocations, and not only in developing countries. In this instance, the first country experiences have probably not been flawless and require elaboration. It would nevertheless be interesting to see whether they have had an effect on fund allocation and the way it is managed, and whether they have contributed to the development of information systems.

Moving to a different culture that is more results-oriented is not a simple step for institutions that are used to a bureaucratic style of budget

management, and there is a risk that the development of performance indicators will be considered as a supplementary bureaucratic activity. The recognition and appropriation of indicators by all actors is a prerequisite if the gauging mechanisms used are to have an effect on the allocation and management of resources.

6.3 Capacities required to address these tasks and challenges

Collecting information on costs and financing, developing a database, analysing this data, anticipating future needs, placing them within a global macro-economic perspective, and linking the resources allocated with the results obtained all require specialized skills possessed by those responsible for and engaged in planning in MoEs.

The changes in aid modalities, and more specifically budget support methods, require good management and the ability to anticipate future needs and track expenditures in order to enable dialogue and define support programmes, as well as to create accountability for the utilization of the funds received.

It is appropriate to add to this contextual change and the resulting heightened requirements the development of information technology, which has drastically changed the technical work of planners and the tools used to tackle the challenges they face.

One cannot but notice that there is not always sufficient capacity to generate and analyse financial data. Historically, educational planners are more often than not concentrated on the issues of school demography and the analysis of physical resources managed by MoEs, and much less on finance issues. On the other hand, the managers of such services are often selected from among the large body of teachers, who are more easily mobilized by MoEs. These teachers do not possess the required technical capacities to deal with issues related to educational planning and financing.

The required capacities include the following:

- First, **capacity to analyse expenditures** in MoEs is essential. This includes knowing basic **concepts in economics and costs**, and being able to deal with financial data, **calculate and analyse indicators, analyse variations overtime**, and use price indices. These competences are required, for example, when working on education system diagnosis. Capacity development can be facilitated through

training in cost analysis techniques. These techniques are essential to elaborate or analyse indicators used for policies' follow-up and evaluation.

- **Capacity to collect and process financial statistics** in education is also required to extend the ministry's EMIS to information on education expenditures and financial indicators. This capacity requires a good knowledge of funding mechanisms, being able to **identify sources of information** like government budgets, households surveys, and financial statements from educational institutions or on external projects, being able to mobilize that information from **accounting or statistical sources**, process them, **make estimates**, and gather all this information to **provide a coherent vision** of education expenditures and unit costs. Capacity development can be facilitated through a learning-by-doing approach and coaching.
- Capacity of being able to **contribute to the costing of development objectives** constitutes another area. In this domain, there are several stages of technical capacity, as not all planners need to have the same level of technical competences. For all, it is necessary to **understand the projection process**, to be able to understand projections and costing reports, and to contribute to meetings and discussions on policy objectives and scenario building. A more limited number of planners should have the capacity to **do the technical work of projections**, either developing their own calculations or updating or adapting a simulation model. The highest level of technical capacity would be **the capacity to develop a simulation tool**. Depending on the level of technicality, capacity development in projections can be facilitated through training or, for the highest technical capacity, through a learning-by-doing approach and coaching.
- Regarding capacity requirements on **financing strategies**, planners and ministry officers should be active when interacting with the decision-making level of the ministry. This type of capacity could be facilitated through participation in training, but also derives from exposure to discussions on policy and participation in meetings and seminars.
- Capacity to transform national development objectives into action plans and negotiate with partners to prepare programmes and projects coordinated with the national strategy.
- **Preparation and implementation of education budgets** is often the responsibility of finance departments and officers. However, planning officers could be involved and be made aware of the

specifics of the budget process and the links between planning and budgeting. They should know about the MTEF.

It should be noted that the desired increased professionalization of planning services can also be achieved by hiring officers who have appropriate quantitative profiles.

6.4 Tools and approaches used in practice to develop the required PPM capacities and their advantages and disadvantages

Information system on expenditures for education

IIEP has experiences of working with countries to set up an information system on expenditures (Benin, Dominican Republic, Madagascar, and Mauritania). The institute has guided member countries in the analysis of financing mechanisms, in collecting and putting together financial data, and in setting up the analytical framework that helps give a global view of educational expenditures.

This work aims at providing completeness in the evaluation of educational expenditure. It brings together all financing sources, public and private, domestic and external; it refers to all categories of institutions – public and private. This completeness requirement implies bringing together perfectly defined accounting data and estimates from statistical surveys, or sometimes from observations on samples of schools and families.

This activity relies on a set of statistical and accounting sources, for each one constitutes a portion of the information needed and integrates them into a general analytical framework designed to receive and make consistent the financial information collected. It then leads to a genuine information system on education expenditure, bringing consistency to all financial information in the field of education to provide an organized view of funding and costs. Moreover, the approach can be used for an annual assessment of education spending.

The methods used must help countries to produce a steady flow of statistical information on education expenditures in conformity with international practice. This also enables them to provide data for important international statistics.

Simulation models

The objective of a simulation model is to allow developing quantitative scenarios for the development of an education system based on a set of assumptions about population, students' behaviour at school, schooling conditions, scenarios to quantify numbers of students to accommodate each year at various levels of education, as well as human and material requirements and necessary financial needs. Automation of calculations can easily generate alternative scenarios and constitutes aid for the definition of education development objectives.

The concept of the generic simulation model came from the desire to meet the needs of many MoEs, while its implementation techniques to make projections are similar. A generic model should meet the needs of a large number of countries by providing settings for its adaptation to specific national contexts. Departments without control of the projection techniques are, on the other hand, in search of 'turnkeys' for the tools. The model developed by UNESCO's Education Sector or the ANPRO model developed by UNESCO Bangkok are examples of responses to their concerns.

IIEP has followed an approach based on national needs, and has focused on developing the capacity of planners to conduct projection work. In addition to its training programmes, this approach has been developed in some countries to build tailor-made simulation tools. In fact, the two approaches are not so divergent. The generic model's experience shows that adaptation work is still needed by countries.

UNESCO has partnered with other cooperation agencies to facilitate access to simulation tools. Models developed by UNESCO (EPSSIM, ANPRO, financial simulation of the Pôle de Dakar or IIEP models), as well as some other models, are available on the site www.inesm.education.unesco.org

Medium Term Expenditure Framework

(*Source*: World Bank. 1998. *Public Expenditure Management Handbook*)

Failure to link policy, planning, and budgeting may be the single most important factor contributing to poor budgeting outcomes in developing countries. In many countries, policy-making, planning, and budgeting take place independently of each other. Planning is often confined to investment activities, which in many developing countries refers to a series

of donor-funded projects. Unpredictability of funding is one of the many factors that contribute to the poor operational performance of the public sector. Overall, this leads to a massive mismatch between what is promised through government policies and what is affordable. Integrated policy, planning, and budgeting is fundamentally about having expenditure programmes that are driven by policy priorities and disciplined by budget realities. A medium-term approach provides such a linking framework. Increasing the predictability of resource flows and the criteria by which funding decisions are made are the objectives of the medium-term approach.

A) **A sector level medium-term framework**

The first step of developing this kind of framework is to conduct a sector review and agree on sector objectives and policies. A clear vision for the sector has to be agreed. This should be derived through a combined bottom-up/top-down process, so that there is built-in consensus at the political level as well as across all technical levels. After this, sector priorities need to be identified and/or revised. Sector reviews are helpful for assessing which activities are pertinent to achieve sector goals. The sector review needs to question the government's responsibility in the sector. If government does have a policy responsibility, an important follow-up question is whether the budget is an appropriate instrument for implementing the policy. Then, the goal and objectives of the line ministries and agencies need to be defined, including the outputs to be produced, the specific activities to achieve the outputs, and the objectives. Getting agreement on sectors' priorities can, however, be a difficult task. Mechanisms need to be in place to debate and resolve disagreements.

The total resources available to the sector need to be defined as comprehensively as possible. They should include resources available to the sector from tax revenues, donors, fee incomes, voluntary organizations, and private institutions. Other sources of resources should also be considered depending on the sector.

Decision-makers need to assess the possible expenditure implications of policies using the sectoral policy priorities developed through the sector review process. In carrying out a cost assessment, a good starting point is to work out what existing policies would cost if fully funded. This costing, aggregated across the sector, yields an estimate of the total requirements within each sector based on actual costs

rather than on a percentage increase on the previous year's estimate. This cost analysis is then reviewed in relation to the policy priorities developed in the sector review and the overall resource envelope that was defined for the sector. Further adjustments may need to be made to ensure that the resulting medium-term expenditure plan falls within the constraints of the resource framework. Medium-term spending projections are useful for these reasons.

All activities and organizations in the sector need to be covered and focus should be on overall expenditures. A coherent set of policies, programmes, and activities for the entire sector needs to be looked at together. Experience shows that tensions often arise when defining what constitutes the sector and drawing sector boundaries. Mechanisms must be introduced to resolve the issue early on and quickly, because the sector approach requires focusing on the whole sector.

In many aid-dependent countries there is a high degree of separation between foreign aid and domestic policy, and management and budgeting. Sector medium-term frameworks seek to eliminate that separation by emphasizing all activities (regardless of source of financing) and overall expenditures. In heavily aid-dependent countries, failure to include donor-financed activities under the sector MTEF will render the framework completely meaningless.

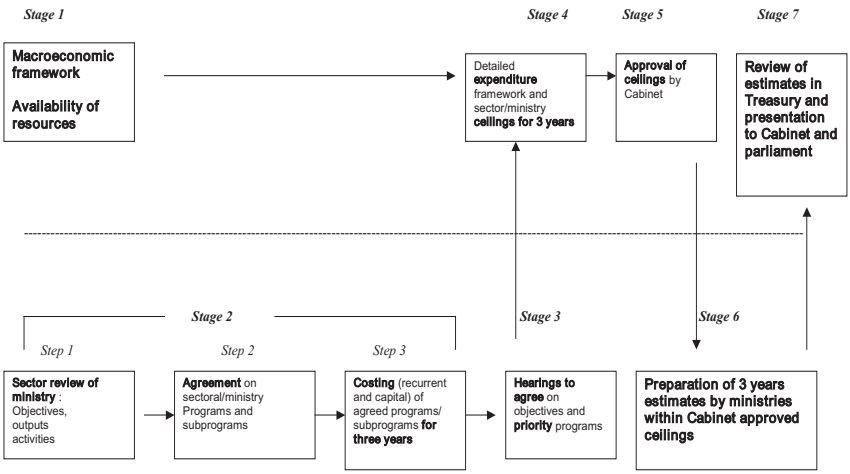
Mechanisms must also be in place to facilitate a shift in resources when policies change from lower to higher priorities, or vice versa. Such mechanisms include decision-making where strategic decisions are made, and rules that ensure that full information is brought to bear on decision-making.

B) **A comprehensive medium-term expenditure framework (MTEF)**

A MTEF is a whole-of-government strategic policy and expenditure framework, within which ministers and line ministries are given more responsibility for resource allocation decisions and resource use. Such a framework consists of:

- a top-down resource envelope;
- a bottom-up estimation of the current and medium-term costs of existing policy;
- matching these costs with available resources. This should normally occur in the context of the annual budget process.

Figure 5. Stages of a medium-term expenditure framework (MTEF)



6.5 What are the important sources for acquiring the tools and approaches?

Cost analysis techniques

In addition to the comprehensive training programmes, the Advanced Training Programme (ATP) in Educational Planning and Management (a nine-month course delivered in English and French in Paris), the Regional Training Course (RTC) (a three-month course in Spanish in Buenos Aires), and the Education Sector Planning (ESP) (a one-year distance course), the IIEP is proposing short distance training specifically on cost analysis in education in English or in French. For more information see www.iiep.unesco.org

Information systems on expenditures

There is currently no specific training on this topic, only some sessions within the specialized IIEP course on information systems (a two-week course in English and French, Paris) organized in March of every year and open to short-term participants.

Upon request, IIEP can work with countries to develop their own financial statistics on education, working with a national team using the learning-by-doing approach. For more information see www.iiep.unesco.org

N.B. UIS is also operating in this area with programmes aiming at reinforcing the production of statistics on education expenditures.

Projections and simulation models, and medium-term expenditure frameworks

The training offer is displayed in *Table 4*. (Detailed information is available on www.inesm.education.unesco.org.)

Table 4. Description of training offer

Title	Description
IIEP projection techniques and simulation models	This 2-week course is provided by IIEP and is offered annually, usually in February-March, at IIEP, Paris, France.
IIEP distance course on Education Sector Planning	This 12-month distance course is offered by IIEP in cooperation with national training institutions.
IIEP Advanced Training Programme in Educational Planning and Management (ATP)	This 9-month programme is provided by the IIEP and organized annually from September to June. The course is delivered at IIEP in Paris, France, and is conducted in both English and French.
IIEP national courses upon request	Upon request from MoEs, the IIEP can organize training courses on projection techniques and simulation models at the national level.
EPSSIM: Training workshops organized upon request	Training workshops are available upon request for ministries of education and finance, as well as for other public and non-public institutions and practitioners.
Educational planning through computer simulation	A publication devoted to the topic of educational planning by means of policy simulation modelling.
ANPRO South Asia Training Course for EFA Plan Implementation at Central and Decentralized Levels	Training course in the use of ESM in planning implementation at central and decentralized levels. Designed in the context of the modernization of public sector management, the course uses models specifically adapted to three country cases in South Asia.
SAMES	Distance learning in SAMES, Pôle de Dakar

Strategies of education financing

Strategies of education development are part of the ATP in Educational Planning and Management, the RTC, and the ESP. For more information see www.iiep.unesco.org

Medium Term Expenditure Framework. There is currently no specific training on this topic, only some sessions within the specialized IIEP course on Education Budgets (a two-week course in English and French, Paris) organized every year in March/April and accessible to short-term participants. The principles of MTEF, guides, and various documents are available on the World Bank website: www.worldbank.org

Education budgets. A specialized IIEP course on Education budgets (a two-week course in English and French, Paris) is organized every year in March/April and is open to short-term participants. IIEP also proposes distance training on education budgets in English or in French. For more information see www.iiep.unesco.org

Performance indicators. There is currently no specific training on this topic, only some sessions within the specialized IIEP course on Education Budgets (a two-week course in English and French, Paris) organized every year in March/April and open to short-term participants. Experiences of using performance indicators and result-based budgeting are more documented for developed countries and are available on the OECD website: www.oecd.org

6.6 What are the important further references on the topics?

ActionAid International. 2009. *Toolkit on education financing*. Brussels: EI; Johannesburg: ActionAid. http://download.ei-ie.org/Docs/WebDepot/EI-ActionAid_Toolkit.pdf

Al-Samarrai, S. 2003. *Financing primary education for all: public expenditure and education outcomes in Africa*. Brighton (UK): IDS. www.dfid.gov.uk/r4d/PDF/Outputs/ForAll/paper57.pdf

ANTRIEP. 2002. 'Financing of education: Issues and innovations'. In: *ANTRIEP Newsletter*, *7*(1), 1–17. www.antriep.net/html/Antriep%20jan-june2002.pdf

Bentaouet Kattan, R. 2006. *Implementation of free basic education policy*. Education working paper series, Nº 7. Washington DC: World Bank. www.download.ei-ie.org/Docs/WebDepot/EI-ActionAid_Toolkit.pdf

Caillods, F.; Lewin, K.M. 2001. *Financing secondary education in developing countries: strategies for sustainable growth*. Paris: IIEP-UNESCO. http://unesdoc.unesco.org/images/0012/001248/124844e.pdf

CONFEMEN. 2004. *Stratégies de renforcement du financement et de la gestion en vue de l›amélioration de l›accès et de la qualité de l›éducation/formation*. Document de réflexion et d'orientation. Dakar : CONFEMEN. www.confemen.org/IMG/pdf/financement.2004.pdf

DFID. 2002. *Reaching the poor: the 'costs' of sending children to school: A six country comparative study*. Educational papers, Nº 47. London: DFID. www.dfid.gov.uk/r4d/PDF/Outputs/ImpAccess/Educationalpaper47.pdf

ECLAC. 2005. *Investing better in order to invest more: financing and management of education in Latin America and the Caribbean*. CEPAL seminarios y conferencias, Nº 43. Santiago de Chile. http://unesdoc.unesco.org/images/0013/001390/139043e.pdf

Mohammed, J.; Lochan, S. 2001. *Understanding educational financing: a manual for developing countries*. London: Commonwealth Secretariat.

Olukoshi, O.; Diarra, M.C. 2007. *Enjeux du financement et de la planification de l'éducation en Afrique: ce qui marche et ce qui ne marche pas?* [Challenges of education financing and planning in Africa: what works and what does not work]. Dakar: CODESRIA; Paris: ADEA.

UNESCO. 2011. *Financing education in sub-Saharan Africa: Meeting the challenges of expansion, equity and quality*. Montreal: UIS. http://unesdoc.unesco.org/images/0019/001921/192186e.pdf

UNESCO. 2011 (French version). *Le Financement de l'éducation en Afrique subsaharienne: relever les défis de l›expansion, de l›équité et de la qualité*.
http://unesdoc.unesco.org/images/0019/001936/193650f.pdf

Woodhall, M. 2004. *Cost-benefit analysis in educational planning* (Fundamentals of educational planning, Nº 80). Paris: IIEP-UNESCO. http://unesdoc.unesco.org/images/0013/001390/139042e.pdf

Woodhall, M. 2004 (French version). *L'Analyse coût-bénéfice dans la planification de l'éducation*. Principes de la planification de l'éducation, N° 80.
http://unesdoc.unesco.org/images/0013/001390/139042f.pdf

World Bank. 2007. Rapport: Conférence internationale: Abolition des frais scolaires: Planifier la qualité et la pérennité financière.
www.educationfasttrack.org/epdf/uploads/75

World Bank. 2009*a*. *Abolishing school fees in Africa: lessons learned from Ethiopia, Ghana, Kenya, Malawi and Mozambique*. Development practice in education. Washington DC: World Bank.
www.unicef.org/publications/files/Aboloshing_School_Fees_in_Africa.pdf

World Bank. 2009*b*. *Six steps to abolishing primary school fees: operational guide*. Washington DC, World Bank.
www.unicef.org/publications/files/Six_Steps_to_Abolishing_Primary_School_Fees.pdf

Ziderman, A. 2003. *Financing vocational training in sub-Saharan Africa*. Africa Region Human Development series, Nº 6. Washington DC: World Bank.
www.usp.ac.fj/worldbank2009/frame/Documents/Publications_regional/multi0page.pdf

Country experiences

Africa

Boak, E. 2009*a*. *Education financing in Côte d›Ivoire: opportunities and constraints*. London: Save the Children.

www.savethechildren.org.uk/en/docs/Cote_dIvoire_Financing_Report.pdf

Boak, E. 2009*b*. *Education financing, governance and accountability in Sierra Leone*. London: Save the Children. www.savethechildren.org.uk/en/docs/Sierra_Leone_Financing_Report.pdf

Kadzamira, E.C.; Nthara, K.; Kholowa, F. 2004. *Financing primary education for all: public expenditure and education outcomes in Malawi*. Brighton (UK): IDS.

Otieno, W.; Colclough, C. 2009. *Financing education in Kenya: expenditures, outcomes and the role of international aid*. RECOUP working paper, Nº 25. Cambridge: RECOUP. http://recoup.educ.cam.ac.uk/publications/Kenyafinancingpaper.pdf

Oumer, J. 2009. *The challenges of free primary education in Ethiopia*. (Educational costs and financing). Paris: IIEP-UNESCO. Available from: http://unesdoc.unesco.org/images/0018/001825/182523e.pdf

Pampallis, J. 2008. *School fees*. Issues in education policy series, Nº 3. Braamfontein (South Africa): CEPD. www.cepd.org.za/files/CEPD_Issues_in_Education_School_fees.pdf

Ravishankar, V.J.; Kello, A. 2010. Tiruneh. *Ethiopia education public expenditure review*. Addis Ababa: Ministry of Education. http://planipolis.iiep.unesco.org/epiweb/E028649_policy_brief.pdf

Thompson, N.M.; Casely Hayford, L. 2008. *The financing and outcomes of education in Ghana*. RECOUP working paper, Nº 16. Cambridge: RECOUP. http://recoup.educ.cam.ac.uk/publications/WP16.pdf

World Bank. 2003. *Cost and financing of education: opportunities and obstacles for expanding and improving education in Mozambique*. (Working paper series). Washington DC: World Bank. http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/09/10/000012009_20030910162917/Rendered/PDF/266990PAPER0AFR0Human0dev0wp0no1037.pdf

Arab States

Oulai, D. 2005. *Evaluation of the educational costs and budgeting in the Kingdom of Bahrain*. Bahrain: Ministry of Education.

Asia

Arze (del), G.F.J.; Fengler, W.; Ragatz, A.; Yavuz, E. 2007. *Investing in Indonesia's education: allocation, equity, and efficiency of public expenditures*. Policy research working paper series, Nº 4329. Washington DC: World Bank.
www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2007/08/27/000158349_20070827133204/Rendered/PDF/wps4329.pdf

Bray, M.; Bunly, S. 2005. *Balancing the books: household financing of basic education in Cambodia*. (CERC monograph series, Nº 4). Hong Kong: CERC; Washington DC: World Bank.
www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2005/10/18/000012009_20051018140132/Rendered/PDF/338100rev0Balancing0the0books0pdf.pdf

Clarke, G. 2010. *Education MTEF: Approaches, experience and lessons from nine countries in Asia*. (Asia Pacific education system review series, Nº 3). Bangkok: UNESCO.
http://unesdoc.unesco.org/images/0019/001915/191500e.pdf

Oulai, D.; da Costa, I. 2009. *Education budgeting in Bangladesh, Nepal and Sri Lanka*. (Educational costs and financing). Paris: IIEP-UNESCO.
http://unesdoc.unesco.org/images/0018/001871/187180E.pdf

UNESCO. 2009. *Education financial planning in Asia: Implementing medium-term expenditure frameworks*. Bangkok: UNESCO.

Republic of Korea:
http://unesdoc.unesco.org/images/0018/001848/184851e.pdf

Thailand:
http://unesdoc.unesco.org/images/0018/001848/184850e.pdf

Mongolia:
http://unesdoc.unesco.org/images/0018/001848/184849e.pdf

Viet Nam:
http://unesdoc.unesco.org/images/0018/001848/184848e.pdf

Nepal:
http://unesdoc.unesco.org/images/0018/001875/187541e.pdf

Tajikistan:
http://unesdoc.unesco.org/images/0018/001877/187723e.pdf

Websites

IIEP-UNESCO: A centre for training and research specialized in educational planning and management: www.iiep.unesco.org

Inter-Agency Network on Education Simulation Models: An inter-agency portal initiated by the Task Team on Education Simulation Models and housed at UNESCO. It aims to facilitate the exchange of experiences and relevant expertise in the field of ESM. It presents useful information on the contexts and aspects of simulation modelling in educational planning, as well as simulation modelling approaches, simulation models or applications, their characteristics and purposes.

OECD Development Assistance Committee: For 50 years the OECD (DAC) has grouped the world's main donors, defining and monitoring global standards in key areas of development. See www.oecd.org/dac/

OECD SBO Network on Performance and Results: This network supports the mandate of the Working Party of Senior Budget Officials 'to improve the effectiveness and efficiency of resource allocation and management in the public sector' by assisting member countries to design and implement performance- and results-based budgeting and management reforms.
www.oecd.org/document/42/0,3746,
en_2649_34119_36031402_1_1_1_1,00.html

Planipolis: A portal of education plans and policies from UNESCO Member States providing a single entry to documents from various official sources. Planipolis is maintained by the IIEP Documentation Centre. See http://planipolis.iiep.unesco.org/

UIS: From pre-primary school enrolment to tertiary graduation rates, UIS is the leading source of international education statistics. Covering more than 200 countries and territories, the UIS database covers all education

levels and addresses key policy issues such as gender parity, teachers, and financing.
www.uis.unesco.org/Education/Pages/default.aspx

World Bank Public Sector Governance Group: This site hosts information and a list of documents on MTEF.
http://go.worldbank.org/80OVWNYE30

VII. Planning and Management of ICT: Education Sector

7.1 Introduction

The introduction of ICT in schools, while in previous decades was confined to the developed countries, is today a worldwide phenomenon as it has become a need in all schools in both developed and developing countries. A country's reasons for engaging in such an initiative are well documented in the literature and can be summarized as follows:

- ICT is as much an essential 'life skill' as literacy and numeracy, so much so, in fact, that the range of skills and processes supported by ICT is brought together in the notion of digital literacy, which becomes both a requirement and a right for all learners. It is therefore important to find ways to compensate those with limited access to computers outside school. As ICT usage becomes more extensive across society, wider benefits will also flow – better links between home and school, greater parental involvement in student progress, and greater scope for schools and other educational institutions to play an interactive part in community life and development (OECD, 2001). Moreover, one of the UN Millennium Development Goals (www.un.org) explicitly cites the need to 'make available the benefits of new technologies – especially information and communications technologies'. Although the exact definition/quantification of these impacts is still a matter of debate (see, for example, proposals and discussions about the economic benefit of IT in OECD, 2003), there is a generalized consensus that there are benefits, that ICT does have an impact on human development, and that ICT is already part of what new generations are already using (OECD, 2010). This new scenario has two implications: first, to consider ICT-related topics as a subject to be included in school curricula; and secondly, to provide opportunities for schools' communities to enhance their ICT skills.
- ICT skills provide an opportunity for economic development and constitute a requirement for employability. Knowledge of and familiarity with ICT is an important aspect of employability as the twenty-first century unfolds. There is a widespread expectation on a global scale that those nations successfully embracing the information age will also benefit economically. Awareness of this economic

dimension may encourage learners generally to acquire such skills, and motivate some to take ICT as an additional optional subject leading to vocational specialization, including the study of computer science or programming in further or higher education (OECD, 2001; Roschelle, Pea, Hoadley, Gordin, and Means, 2000).

- ICT as a tool for teaching and learning. The potential for this has developed rapidly and dramatically with advances in ICT. It can increase the breadth and richness of learning, not least through the topicality and realism that the new resources can bring. It can support the development of higher-order thinking skills, including analysis and synthesis, and increases the motivation of students and teachers (OECD, 2001). On the other hand, despite the number of national and international studies that have tried to unveil the expected causal relation between ICT availability and use in schools and higher students' achievements (see Balanskat, Blamire, and Kefala, 2006), results still show that computer-based technology is only one element in what must be a coordinated approach for improving curriculum, pedagogy, assessment, teacher development, and other aspects of a school's culture (Bakia, Means, Gallagher, Chen, and Jones, 2009; Campuzano, Dynarski, Agodini, Rall, and Pendelton, 2009; McCombs, 2000; Roshelle, Pea, Hoadley, Gordin, and Means, 2000).
- ICT as a tool for educational management. Visionary ministerial and school leadership is needed to bring about and sustain the dramatic changes enabled by ICT, to persuade and give confidence to all involved – administrators, teachers, learners, parents, and others in the ministry, in the schools, and in the community. There are increasing arguments that support the idea of bettering education using these tools to improve performance in management-related tasks (see, for example, Hunt, Davies, Pittard, and BECTA, 2006). In the same vein, there is also the concept of using ICT as an 'instrument' that helps bring about change and innovation in schools (Fullan, 2007). In fact, this concept has changed over time, first from considering ICT as a Trojan Horse (Olson, 2000), then as a catalyst (McDonald and Ingvarson, 1997), then as a lever (i.e. a tool that must be applied purposefully to a task to be of value [Venezky, 2002]), and most recently, based on an ecological perspective, as 'invasions of exotic species' (Zhao and Frank, 2003). These different categories illustrate the evolution of the role that ICT plays in educational innovation, but more importantly show the prevalence of the search for an answer to question of what role ICT plays in the process of educational innovation.

All in all, in the new 'Information Age', computers and telecommunications are key tools that permit (and eventually produce) the change from the traditional bureaucratic culture of organizations to a new professional culture (Semenov, 2005). In fact, some authors argue that the main features in an education system of the information society are: production of knowledge, geographical and temporal independence on knowledge acquisition, and pedagogic and structural innovation in the teaching-learning process (Kinelev, Kommers, and Kotsik, 2004). Schools are part of this new scenario and they are required to adopt this new paradigm, which means innovation and change. Therefore, sooner or later, developing countries will consider the introduction of ICT in their education systems, and in order to plan and manage the implementation of such a policy, they will require a set of competencies to be available in the education system.

In this framework, this chapter first presents the main tasks and challenges associated to an ICT in education policy; then, on this basis, presents the requirements for capacity development that are associated to these challenges. Third, the chapter presents the main approaches and available tools for planning and management, and discusses the sources of support for developing capacity in this area. Finally, it provides the sources of information available.

7.2 Tasks and challenges for ICT planning

Planning for ICT policy implementation entails a number of different elements that need to be coordinated and delivered in a timely manner. Compared to other policies, given its different potential roles, the use of ICT in education possibly has the most unique characteristics that require the definition and coordination of a set of interrelated strategies.

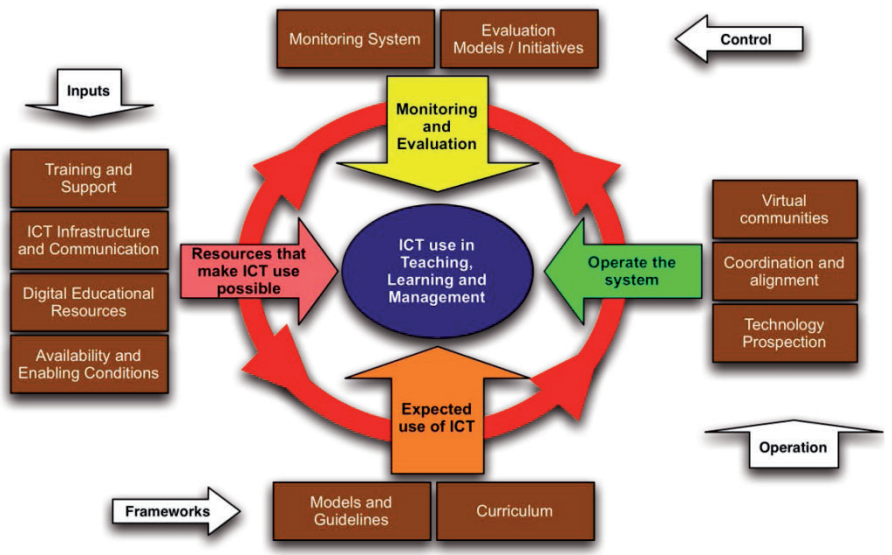
From a strategic level perspective, ICT in education policy should be aligned with, and embedded in, the overall educational policy and, if available, the country's digital development policy. Regarding the alignment, the planned vision and mission of the ICT policy should be defined so as to contribute to the overall aim of the education system, considering the different areas listed in the previous section. In addition, the ICT in education policy should include explicit links and interactions with other areas, such as curriculum development, teacher training, and educational resources, as well as with other ICT-related policies such as those aimed at bridging the digital gap.

From an implementation perspective, the planning and management of ICT in education policies needs to consider at least four dimensions:

1. Inputs: Provision of resources that enable the use of ICT.
2. Frameworks: Definition and dissemination of models that reflect the expected use of ICT in education.
3. Operation: Definition and implementation of procedures for the operation of the system.
4. Control: Implementation of M&E systems.

Central to these interventions is the goal of ensuring the utilization of ICT in education, and thereby of helping to achieve the expected vision. These dimensions are presented in *Figure 6*.

Figure 6. Dimensions involved in the implementation of ICT in education policies



As presented in *Figure 6*, each dimension has a set of associated areas or action lines that need to be considered in the planning and management process. Below is a description of each dimension and the associated areas.

1. **Inputs – resources that support the use of ICT:** The areas included in this dimension aim at ensuring the availability of various resources along with the required conditions for use and maintenance, including:
   - the infrastructure required in schools, regional and central offices of the MoE, including computers, Internet access, and software information systems;
   - training in ICT competencies, twenty-first century skills, and use of ICT in teaching, learning, and management;
   - digital educational resources to be used in teaching, learning, and management; and
   - conditions to enable sustainability of the resources and ensure the availability of equipment as required, including technical support, maintenance, and pedagogical assistance.

2. **Frameworks – expected use of ICT:** This dimension includes two main areas, the use of ICT in teaching and learning, and its use in educational management.
   - Teaching and learning. This area should define the way in which ICT is expected to be used to support teaching and learning processes in accordance with the theoretical and practical directives of the ministry and the pedagogical paradigm explicitly or implicitly embedded in the respective national curriculum. Therefore, the action lines considered in this area should define the pedagogical framework for the use of ICT and provide concrete examples that can be used as models.
   - Educational management: This area should define the expected use of ICT as a tool for management at the different levels of the education system, including the school level and the regional and central offices.

3. **Operation of the system:** This dimension considers action lines aimed at the following:
   - Administering the virtual interaction in the network aimed at encouraging and motivating all the beneficiaries to use ICT, thereby creating a culture of ICT use in education. This would include activities such as student and teacher contests and dissemination of best practice. It would also provide online professional development communities, where teachers, academics, and others could share their experiences, as well as teach and learn from each other about the effective use of ICT in teaching, learning, and management.

- Coordination with other government ICT-related initiatives.
- Technological prospection to identify emerging opportunities for the use of new technologies in education.

4. **Control – monitoring and evaluation:** This dimension considers action lines aimed at providing information about the implementation of the strategy (products, activities), as well as about the effects and impacts of the strategy.

All these dimensions need to be planned and managed in order to ensure coherence and consistency of the deployment of the ICT in education policy.

7.3 Requirements for capacity development

The requirements for capacity development can be organized based on the areas of capacity development described in the conceptual framework: institutional, organizational, individual, and stand-alone. Based on these areas, below is a list of challenges associated to capacity development that arise when considering all the dimensions and action lines that need to be planned and managed in ICT in education policies presented in the previous section.

Institutional capacity. At institutional level, the main challenges are as follows:

- Coordination with other government institutions and stakeholders. The introduction of ICT in an education system needs to be coordinated with other government initiatives, such as the ones aimed at ensuring the availability and use of ICT in society. Due to this requirement, and considering that many ministries are used to managing their policies without requiring coordination with other ministries, institutions or agencies, there is a need to develop institutional capacity to implement planning and management procedures involving a great deal of coordination and collaboration.
- ICT integration and use for management and operation. This includes the use, administration, and maintenance of EMIS. In some cases the installation of information systems is addressed at government level, typically as part of an 'e-government policy'. In such cases, the MoEs must ensure their consistency and compatibility with the systems already being implemented by government. However, it is also common for ministries to develop their own systems, especially in areas dealing with education issues (for example, education portals). In all cases, institutions need to adapt to the use of these

systems, and these processes will require not only the development of technical skills, but also cultural changes in the institution.

- Coordination and interaction with the private sector. The implementation of ICT in education policies can be very attractive for the national and international private sector, especially for the hardware, software, and telecommunication industries, which can be very proactive, offering their products to the ministry. In this sense, institutions need to develop capacities to negotiate and interact with the private sector, keeping in mind both short- and long-term benefits and costs.

Organizational capacities. At organization level, there are different structures that can be used to manage ICT in education policies, including the setting up of an internal team specialized in ICT in education, and the creation of a semi-autonomous institution that, while depending on the ministry (or government) for its budget, has administrative independence to manage the implementation and to contract external institutions to implement parts of the implementation of the policy. Despite the organizational arrangement, the ministry needs to ensure that the implementation of the different dimensions are well coordinated, consistent, and delivered in a timely manner. For example, the specifications for the hardware needed should consider the type of educational software that it will run, and the teacher training programmes should take into consideration the type of software that will be used as well as Internet availability (or lack of). In several cases, ICT in education policies have focused too much on the delivery of hardware, thus neglecting careful planning to ensure that the hardware arrives with digital educational resources, that training starts once the hardware is installed and the software ready to be used (not later or before), and that technical support is available when something fails. For this, ministries need to ensure leadership and coordination capacity, especially considering the need to coordinate teams that constitute a mix of different professional backgrounds (educational specialists, system engineers, software developers, technicians, etc.).

Individual capacities. Regarding individual capacities, each area described in the previous section requires several technical, functional, and leadership skills, particularly the following:

- ICT-related technical skills to be able to define adequate specifications and perform technical evaluations of the hardware, software systems,

Internet connectivity, telecommunications regulations, technical support, etc.

- Software systems engineering to be able to define adequate specifications and perform technical evaluations of education management information systems.
- Pedagogical use of ICT in teaching and learning, especially from an educational perspective, and including ICT integration in the curriculum.
- Selection and evaluation of digital educational resources.
- Teachers' professional development methods, and particularly the use of distance education techniques to foster virtual collaboration and interaction.
- Capacity to design and implement evaluation systems.
- Procurement specification and implementation procedures.
- Project management methods and techniques that focus particularly on large-scale projects and include the definition and implementation of monitoring methods.

Stand-alone capacities. The stand-alone capacities that can be considered in this area refer to the need to permanently explore new opportunities offered by emerging technologies that can be used in education.

7.4 Available tools and approaches, and their strengths and weaknesses

Regarding the planning of ICT in education policies, UNESCO, InfoDEV, and other partners have developed a toolkit aimed at providing educational policy-makers, planners, and practitioners with a systematic process to formulate, plan, and evaluate education development programmes enhanced by ICT (see http://www.ictinedtoolkit.org). In addition, there are other resources that describe, from different perspectives, the elements to be considered in an ICT in education policy, such as Kozma (2005), Pelgrum and Law (2003), Kugemann (2002), and Hepp, Hinostroza, Laval, and Rehbein (2004). In general terms, although these publications provide very good guidance for the planning stage, especially for teams that are starting in the area of ICT in education policy, they are not self-explanatory; therefore external expert support is required for effective use by the teams in charge of planning the ICT in education policy.

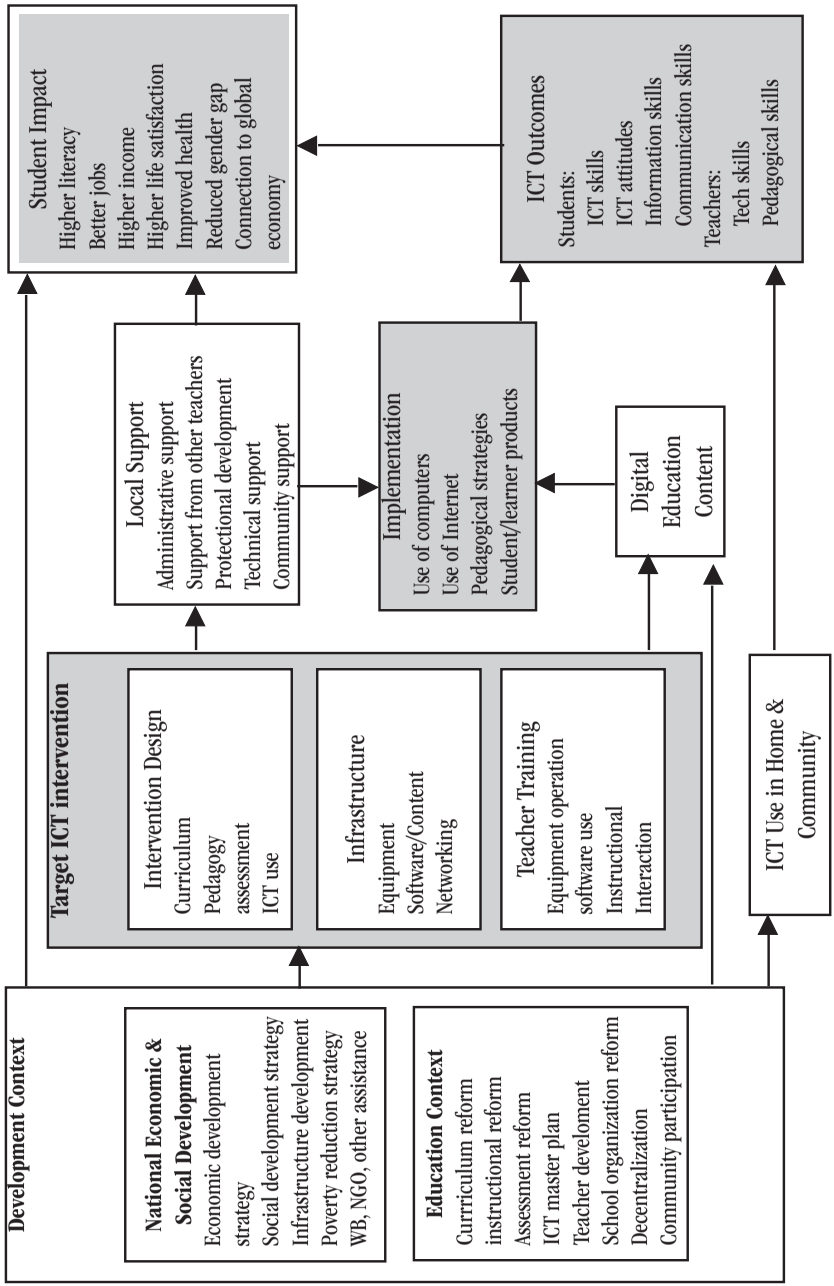
From a management perspective, there are many techniques and tools described in the literature that can be used for planning and management of ICT in education policies, such as the Logical Framework Approach, which is a tool for objective-oriented planning (see, for example, Norad, 1999), or other more traditional project planning tools such as the Critical Path Method, the Precedence Diagramming Method, or the Programme Evaluation and Review Technique.

Regarding M&E of the policy, authors have tried to define frameworks that can be used to follow the implementation of the ICT in education policy, and thereby be used as management tools. One example is the framework for monitoring and evaluation of ICT in education projects developed by Wagner et al. (2005), which identifies the different components of the policy (see *Figure 7*).

As can be observed in *Figure 7*, this framework considers the development context of the intervention (including national economic and social development and educational context, as well as ICT development expressed as 'ICT use in home and community') that needs to be taken into consideration during the planning phase; the 'target ICT intervention', which includes the products and services that will be delivered to schools; 'local support', which means services to be provided locally; as well as 'digital educational contents', which are resources that need to be available for the implementation, which in turn describes the expected use of ICT. Finally, the 'ICT outcomes' and 'student impact' describe the variables that should be monitored to register possible results and impacts of the initiative.

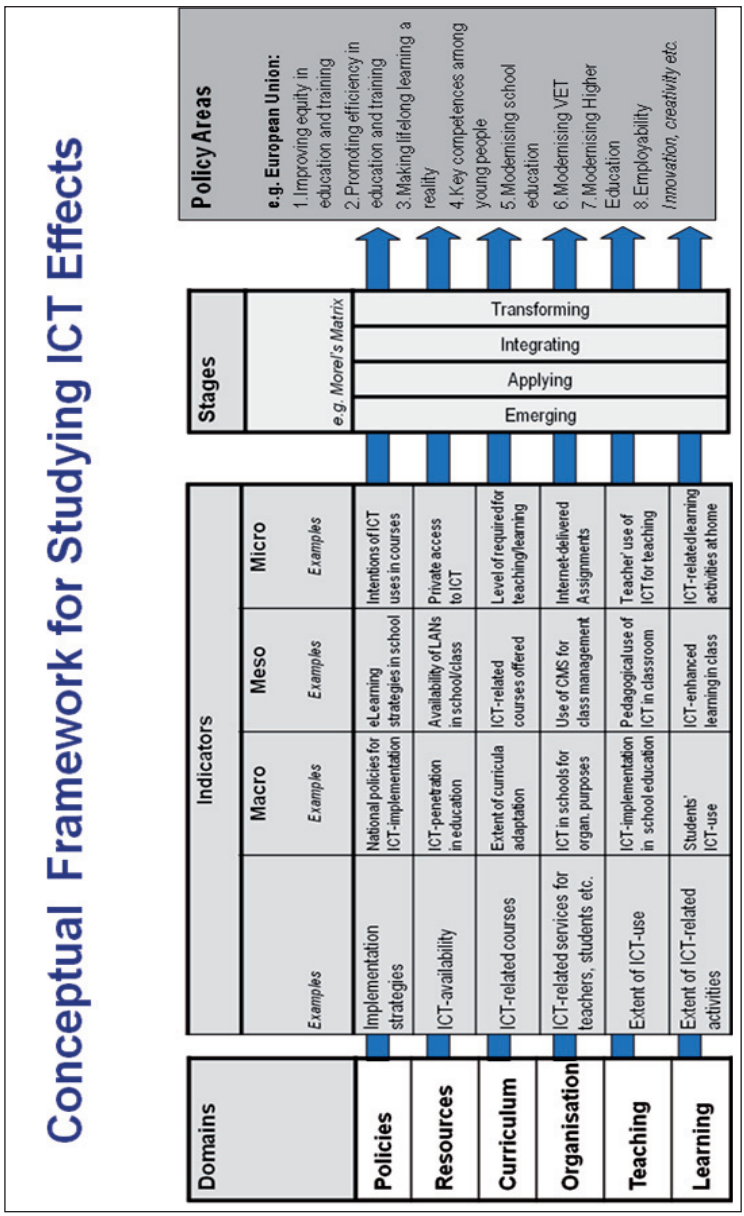
A different approach is proposed by Scheuermann, Kikis, and Villalba (2009), which presents a framework for understanding and evaluating the impact of ICT in education (*Figure 8*).

Figure 7. Conceptual framework of ICT monitoring and evaluation



Source: Wagner *et al.*, 2005: 9 (Reproduced as in the original).

Figure 8. Framework for evaluating ICT in education



Source: Scheuermann *et al.*, 2009: 9.

In this case, in addition to the set of indicators grouped in the areas of policies, resources, curriculum, organization, teaching, and learning classified as belonging to macro, meso, and micro levels of intervention, this framework also includes the idea of 'stages' of policy implementation (i.e. emerging, applying, integrating, and transforming).

7.5 Sources of supply/support for capacity development

Approaches for capacity development include the following:

- Study tours to selected countries to visit concrete experiences and see the implementation of ICT in education policies in schools. Generally in these tours, a group from the MoE in charge of the policy travels to visit and learn from other countries' experiences. It is important to consider that the choice of country to visit is of paramount importance. The target country needs to be one that, having similar social and cultural aspects to those of the origin country, has been able to make significant progress in this area. For example, during the late 1990s and early 2000s in Latin America, Chile was considered an example of 'best practice' in this field, and therefore other countries in the region, such as Colombia, Peru, and Bolivia, visited and learned from the Chilean experience. Currently, Uruguay's 'one laptop per child' initiative is considered as 'best-practice' and is therefore attracting a great deal of attention to the country. In other regions, Singapore is considered an example of best practice in the introduction and use of ICT in teaching and learning, and Korea is considered exemplary in ICT-related innovations. Jordan has also become an example in its region in this area.
- Some country teams can also decide to visit more developed countries. However, in many cases, due to the cultural, social, and economic differences, transferring these experiences is not feasible and/or demands significant local adjustments (which can be fine for teams that have already accumulated experience in this area).
- In practical terms, these visits last approximately one week, and a typical group would consist of at least the director of the initiative and the professionals (usually technical staff) in charge of infrastructure, teacher training, and digital educational resources, who meet with their respective counterparts. Additionally, the visit includes visits to schools as well as some hands-on experience.
- Seminars and conferences for policy-makers organized by international institutions and/or private companies. These conferences are usually very useful for discussing general strategies at policy

level and to learn from other countries' general strategies. However, they do not provide enough information at an implementation level.

- Formal programmes, including general or ad-hoc postgraduate courses and diplomas. These programmes are available from a range of institutions and are quite heterogeneous in their quality and applicability to particular contexts. However, if well selected, they are useful as part of a long-term capacity building strategy.

It is very common for institutions to collaborate in the design and implementation of ICT policy in their country to offer capacity building opportunities. Therefore, depending on the aims and type of strategy to be implemented, countries should to identify other countries that have gone through similar processes and have achieved some success in this area. The most relevant criteria to select an institution seem to be cultural and social similarities, since what can be learned needs to be adapted to the local conditions and context.

7.6 Sources of information on tools and approaches

Below are some sources of information that could be of interest.

The *ICT in education around the world: trends, problems and prospects*, developed by Pelgrum and Law (2003) for UNESCO, presents a comprehensive view of ICT in education policies, including the history of ICT in education, the role of ICT in the curriculum, different infrastructure deployment models, strategies for staff development, as well as more general issues such as the management of change and a discussion on the potential visions for ICT in education policies.

The other source of information is the ICT in Education Toolkit, developed by UNESCO, InfoDEV, and other partners, which is aimed at providing education policy-makers, planners, and practitioners with a systematic process to formulate, plan, and evaluate education development programmes enhanced by ICT. The toolkit contains six toolboxes (a total of 19 tools) that provide interactive instruments and step-by-step guidelines to assist users. These guidelines include the following:

- Map the national, technological, and educational situation
- Formulate and assess ICT-enhanced programmes
- Plan for physical and human requirements
- Plan for ICT-enhanced content
- Generate programme costs

- Create a master plan
- Monitor implementation, effectiveness, and impact

The toolkit also contains a reference handbook, which summarizes worldwide knowledge, research, and experience on the effective use of ICT for education.

Complementarily, the publication *Technology in schools: Education, ICT and the knowledge society*, developed by Hepp et al. (2004) for the World Bank, presents examples of and insights on a number of issues that are relevant to policy-makers in this area, particularly in developing countries. Among other topics, it addresses the need for a staff development plan, long-term commitment, and consideration of a pedagogical perspective. Additionally, it presents the need for support and the relevance of digital educational content and teacher training, and other implementation issues.

Finally, UNESCO has produced a series of publications that illustrate different options for the implementation of the various components of an ICT in education policy. Among others, the following publications could be of interest:

ICT and curriculum

- UNESCO. 2000. *Information and communication technologies in secondary education: A curriculum for schools*. Paris: UNESCO. http://wwwedu.ge.ch/cptic/prospective/projets/unesco/en/welcome.html

  UNESCO. 2002. *Information and communication technology in education: A curriculum for schools and programme of teacher development*. Paris: UNESCO. http://unesdoc.unesco.org/images/0012/001295/129538e.pdf

Teacher training and standards

- UNESCO. 2002. *Information and communication technologies in teacher education: A planning guide*. Paris: UNESCO. http://unesdoc.unesco.org/images/0012/001295/129533e.pdf
- UNESCO. 2003. *Building capacity of teachers/facilitators in technology-pedagogy integration for improved teaching and learning*. Bangkok: UNESCO. http://unesdoc.unesco.org/images/0013/001356/135606e.pdf

- UNESCO. 2008*a*. *ICT competency standards for teachers: Policy framework*. Paris: UNESCO.
  http://unesdoc.unesco.org/images/0015/001562/156210e.pdf
- UNESCO. 2008*b*. *ICT competency standards for teachers: Competency standards modules*. Paris: UNESCO.
  http://unesdoc.unesco.org/images/0015/001562/156207e.pdf
- UNESCO. 2008*c*. *ICT competency standards for teachers: Implementation guidelines*. Paris: UNESCO.
  http://unesdoc.unesco.org/images/0015/001562/156209e.pdf

7.7 Bibliographic references

Bakia, M.; Means, B.; Gallagher, L.; Chen, E.; Jones, K. 2009. Evaluation of the enhancing education through technology program: Final report. Washington DC: US Department of Education, Office of Planning, Evaluation and Policy Development, Policy and Program Studies Service.
http://www2.ed.gov/rschstat/eval/tech/netts/finalreport.pdf

Balanskat, A.; Blamire, R.; Kefala, S. 2006. *The ICT impact report: A review of studies of ICT impact on schools in Europe*. Retrieved May 2007 from:
http://ec.europa.eu/education/doc/reports/doc/ictimpact.pdf

Campuzano, L.; Dynarski, M.; Agodini, R.; Rall, K.; Pendelton, A. 2009. *Effectiveness of reading and mathematics software products: Findings from two student cohorts*. Washington DC: US Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance.
http://ies.ed.gov/ncee/pubs/20094041/pdf/20094042.pdf

Fullan, M. 2007. *The new meaning of educational change* (4th edition). London: Teachers College Press.

Hepp, P.; Hinostroza, J.E.; Laval, E.; Rehbein, L. 2004. *Technology in schools: Education, ICT and the knowledge society*. Washington DC: World Bank.
http://go.worldbank.org/O2UP0U2IB0

Hunt, M.; Davies, S.; Pittard, V.; BECTA. 2006. *The Becta Review 2006: Evidence on the progress of ICT in education*. Coventry: British Educational Communications and Technology Agency. http://dera.ioe.ac.uk/1427/

Kinelev, V.; Kommers, P.; Kotsik, B. 2004. *Information and communication technologies in secondary education: Position paper*. Moscow: UNESCO Institute for Information Technologies in Education. http://iite.unesco.org/pics/publications/en/files/3214616.pdf

Kozma, R.B. 2005. *National policies that connect ICT-based education reform to social and economic development. Human technology: An Interdisciplinary Journal on Humans in ICT Environments*, *1*(2), 117–156. www.humantechnology.jyu.fi/archives/abstracts/kozma05.html

Kugemann, W.F. 2002. *ICT and educational resource policy. Paper presented at the OECD Seminar: The effectiveness of ICT in schools: Current trends and future prospectus*. Tokyo: OECD. www.oecd.org/dataoecd/11/19/41188210.pdf

McCombs, B.L. 2000. *Assessing the role of educational technology in teaching and learning process: A learner-centered perspective*. Paper presented at the Secretary's Conference on Educational Technology, 2000, Washington, DC. www.eric.ed.gov/PDFS/ED452830.pdf

McDonald, H.; Ingvarson, L. 1997. ′Technology: A catalyst for educational change′. In: *Journal of Curriculum Studies*, *29*(5), 513–527.

NORAD. 1999. *The Logical Framework Approach (LFA): A handbook for objectives-oriented planning*. Oslo: Norwegian Agency for Development Cooperation. www.norad.no/en/tools-and-publications/publications/publication/_attachment/106231?_download=true&_ts=11eb62dcb2d

OECD. 2001. *Learning to change: ICT in schools*. Paris: OECD.

OECD. 2003. *Seizing the benefits of ICT in a digital economy*. Paris: OECD. www.oecd.org/dataoecd/43/42/2507572.pdf

OECD. 2010. *Are the New Millennium learners making their grade? Technology use and educational performance in PISA*. Paris: OECD-CERI.

Olson, J. 2000. ′Trojan Horse or teacher's pet? Computer and the culture of the school′. In: *Journal of Curriculum Studies*, *32*(1), 1–8.

Pelgrum, W. J.; Law, N. 2003. *ICT in education around the world: trends, problems and prospects*. Paris: IIEP-UNESCO. http://unesdoc.unesco.org/images/0013/001362/136281e.pdf

Roschelle, J.M.; Pea, R.D.; Hoadley, C.M.; Gordin, D.N.; Means, B.M. 2000. ′Changing how and what children learn with computer-based technologies′. In: *Children and Computer Technology*, *10*(2), 76–101. http://ctl.sri.com/publications/downloads/PackardChangingLearning.pdf

Scheuermann, F.; Kikis, K.; Villalba, E. 2009. *A framework for understanding and evaluating the impact of information and communication technologies in education*. Ispra: Centre for Research on Lifelong Learning (CRELL).

Semenov, A. 2005. *How ICT can create new, open learning environments*. Paris: UNESCO. http://unesdoc.unesco.org/images/0013/001390/139028e.pdf

Venezky, R.L. 2002. *Quo Vademus? The transformation of schooling in a networked world*. Retrieved May 2007 from www.oecd.org/dataoecd/48/20/2073054.pdf

Wagner, D.; Day, R.; James, T.; Kozma, R.B.; Miller, J.; Unwin, T. 2005. *Monitoring and evaluation of ICT in education projects: A handbook for developing countries*. Washington DC: *The International Bank for Reconstruction and Development/World Bank*. www.infodev.org/en/Document.9.pdf

Zhao, Y.; Frank, K.A. 2003. ′Factors affecting technology uses in schools: An ecological perspective′. In: *American Educational Research Journal*, *40*(4), 807–840.

VIII. Planning and Management of Educational Infrastructure

8.1 Introduction

Effective planning and management of educational infrastructure is a highly complex and resource-intensive task, and approaches used by countries are largely context-driven: educational and political contexts in countries and regions can differ greatly according to size and school system, demographic trends, the political devolvement of the system, the scale and location of a project, and other factors. While it is essential to have a commitment to the principles of good planning and management, there may be times when national or regional governments have to make difficult and sensitive trade-offs in the interest of the general public. For example, speedy implementation of an ambitious building programme may be delayed because of extensive participation of educational and community stakeholders in the decision-making process; demands for sophisticated teaching and learning technologies cannot always be met because of limited financial resources; or short-term planning and solutions may have to be chosen over more sustainable educational facilities.

Although there is a need for individualized solutions, this chapter seeks to identify a set of broad principles of effective planning and management for small- and large-scale investment projects drawing from other fields, such as risk assessment, financial planning, and project management. Examples are provided of existing practice, and possible solutions to challenging scenarios are proposed from different countries.

8.2 Issues requiring PPM attention

Principles and challenges of effective planning and management of educational infrastructure

The following section presents 12 principles of effective planning and management of educational infrastructure. They are framed within the context of a regime of good governance, whose principles are laid out in *Chapter 2*.

A national policy and high-level policy commitment to improving the quality of educational infrastructure. Policies should reflect the value of children in society. The decision to proceed with planning a project requires political support, coupled with a policy to improve educational infrastructure (see *Box 10*).

Box 10. The school building modernization programme, Portugal

In January 2007, the Portuguese Government launched a policy to rehabilitate 332 secondary schools by 2015, with a total investment for the first 205 schools of EUR 2.45 billion. The government had three principal concerns in relation to the school building stock:

- Its physical deterioration.
- Poor environmental standards in terms of energy performance, environmental comfort, and sanitary standards.
- Its functional inadequacy for teaching and learning.

To manage this programme, the government created a special-purpose state-owned company, Parque Escolar, with a high degree of administrative and financial autonomy and its own assets.

Source: OECD. 2010. *OECD review of the Secondary School Building Modernisation Programme, Portugal*. Paris: OECD.
www.oecd.org/dataoecd/13/55/44708107.pdf

A statement of needs, with available resources and timeline. The decision to invest in educational infrastructure is driven by needs. The success of a project can be attributed to how clearly these needs are identified, articulated, and agreed at the outset by all stakeholders, and to how these needs are addressed and communicated over the course of the project. Policies should be established by the competent authorities and state well defined and measurable objectives. Priorities and strategies for achieving the objectives should be established by the appropriate authorities. The policy must be clear and should have adequate support and authority to enforce its scope and objectives, and to carry out the plan over a specified number of years.

A strategy to assess and prioritize needs sets out the criteria used to make the decision to replace, remodel, or re-invest in a school, etc. Methodologies such as cost-benefit analysis can be used, and needs should be ranked according to short- and long-term priorities. There should be

sufficient flexibility to account for the 'unexpected' and between-school differences (see *Box 11*).

Box 11. Demographic planning and prioritization of projects in Ireland

The Planning and Building Unit in Ireland is responsible for the delivery of the school building programme in Ireland, which represented a capital investment of EUR 656 million in 2009. In order for the project to proceed through the stages from pre-planning to completion of construction at each phase of the process, a viability assessment must be conducted using cost viability thresholds; the project must comply with design guidelines; and it must conform to the approved area and cost norms. The following tools are used:

- **Demographic planning**. A Geographical Information System (GIS) is used as a tool in the planning process. Demographic projections indicate a steady increase in primary-level enrolments in the next 10 years, necessitating increased provision of student accommodation. In 2009, for example, 60 primary-level projects commenced, and 30 projects were expected to be completed in 2010. Many data sources – child benefits, live births, ordinance surveys, and number of school enrolments and staffing – are also used for school planning.
- **Prioritization**. All construction projects are classified into four categories – new facility, major extensions and refurbishment, ancillary accommodation, and 'other' – and prioritization of projects in the same category is based on enrolment stability, length of time in the planning process, and most cost-effective solution.
- **Norms in relation to quality** (i.e. technical guidance for site suitability and design specifications), area (i.e. area schedules set out the net area of designated rooms in a school with n classes), and cost (i.e. project costs are composed of basic building cost, expressed as a cost per square metre for the new building floor area, and external works allowance, which provides for normal external works associated with the new building).

Source: Summary of OECD/European Investment Bank Workshop on Strategic Investment Planning for Educational Infrastructure, 28-29 June 2010, Luxembourg.
www.eib.org/about/events/strategic-investment-planning.htm

A clear definition of the roles and responsibilities of the various individuals, agencies, and organizations involved in planning, with a transparent process for planning, design, regulation, and enforcement-related decisions. The likelihood that projects will run safely, smoothly, and according to budget and schedule can be increased through the

existence of a clear decision-making authority, process, and system of accountability; clear definition of the roles and responsibilities of principal actors; knowledge of competing projects and priorities and how they should be ranked; and an understanding of project risk. Although each project requires individuals with different skills and competencies – depending on the scope, level (political, school), and stage (planning, pre-design, design, post-occupancy evaluation) of the project – it is useful to distinguish between:

- those who identify the project's scope and budget;
- those who implement, manage, and monitor the project (architects, builders, school leaders, school boards, etc. These individuals need educational, financial, architectural, and technical expertise (skills and competencies), in addition to knowledge of procurement and tendering and project management skills); and
- those with political, social, and communication skills who can assist in building partnerships, securing funding, and general networking, and also ensure successful capital planning projects.

Understanding the planning process. The planning process can be divided into three phases:

Pre-project phase: Strategic phase

- Confirm the scope of the programme
- Confirm the timeframe
- Confirm the available resources
- Develop a statement of needs
- Conduct a needs assessment, which includes an evaluation of existing building stock
- Develop a communications strategy

Project phase: Implementation phase

- Agree to provide funding
- Develop master specifications, design guides, and technical support
- Select (priority) schools and designers
- Develop a school strategic plan and brief/functional programme
- Select a smaller number of contractors, collect and evaluate bids, and sign contracts
- Supervise and complete the contracted work

Post-project phase: Evaluation and monitoring phase

- Reassess needs using the results of a final auditing and post-occupancy evaluation.

Involving the community. Community participation and understanding of local issues should be encouraged from the pre-design phase (see *Box 12*). Sharp (2008)[14] describes how the location, size, and use of public schools have a tremendous impact on the communities they serve in terms of the following:

- **The economy.** High-quality schools located in neighbourhoods can buy property values, support local businesses, and serve as catalysts for revitalization. Moving schools out of neighbourhoods or failing to maintain them can cause disinvestment.
- **The environment and public health.** School location impacts students' modes of transportation to and from school, and therefore air and water quality.
- **Traffic congestion.** Schools contribute to local traffic congestion during peak hours, causing problems for parents, staff, and residents.
- **Community cohesion.** In many cities and towns, schools serve as community anchors that support greater community interaction, engagement, and pride.
- **Social equity.** The socio-economic make-up of neighbourhoods is reflected in a community's schools, and has important implications for academic equity.
- **Quality of education.** Academic success, teacher satisfaction, parental involvement, attendance rates, graduation rates, and student safety are greatly influenced by school size and use, including the degree to which it is integrated into the broader community life.
- **School and local government finance.** School location and use impacts transportation, infrastructure, service costs, and tax rates.

14. M. Sharp. 2008. *Local governments and schools: A community-oriented approach ICMA IQ Report*, Volume 40 Special Edition. Washington DC: ICMA. http://icma.org/Documents/Document/Document/5753

Box 12. Seven Fountains School, Kokstad, South Africa

This school, constructed in 2007 in one of the fastest growing towns in the Kwa-Zulu-Natal Province in South Africa, demonstrates the **benefits of community involvement from the planning stage of the project**. Local people were fully involved in the design and construction of the school, and now make use of the facilities outside of school hours. There is a strong sense of **community ownership**, with high demand for places and no theft or vandalism of the property. Many of the design elements, such as the circular buildings and thatched roofs, reflect the local architecture. There are a variety of spaces for teaching and learning. Many classrooms have mezzanine or loft areas that provide breakaway spaces for creative teaching and for project work. The final plans incorporate several features – such as sensors that measure room temperature, light levels, and energy consumption – that reduce the environmental impact of the school, and are implemented for little or no extra cost.

Source: OECD. 2011. Designing for education: Compendium of exemplary educational facilities 2011. Paris: OECD.

A building inventory and on-going condition assessment. Assessing the nature and condition of school building stock (through the collection of comprehensive and accurate information) at intervals over the life cycle of the building can set the parameters for decision-making, protect the physical asset that is the facility, and help meet the needs of the users of the facility (see *Box 13*).

Box 13. Conducting quality and condition assessment of educational facilities

Data collection should fit local circumstances, needs, and available resources. The funding of the data collection is important and should be linked to the investment plan. If there are too many checkpoints and too much paperwork, the framework can collapse under its own weight. In San Diego, for example, the school district made a cost-benefit decision to forego state grant funding because the paperwork was too onerous. The level of effort required to assemble data, perform due diligence analysis, and submit forms for review/approval must be carefully calibrated to the purpose of the exercise and to the resources of local school districts.

Some authorities may have limited experience in data collection methods, so it is essential to incorporate some training and capacity building into the initial data collection strategy. Qualified assessors should be responsible for developing instruments, and assessments should be conducted independently. Head teachers can also report satisfaction, although such data may be subjective. The responsible education authority – i.e. the owner and the operator of the schools – should play a key role in the data collection strategy. For regular investment planning/decision-making on prioritization, yearly surveys might be necessary; but for assessment of broader policy outcomes, surveys at five-year intervals would be appropriate.

Although the objectives and elements of the survey may vary significantly, the minimum information required to conduct an initial analysis of the condition and quality of school building stock includes:

Location, size, age, and functional requirements of space (e.g. classrooms for primary education, secondary education, etc., laboratories, special classrooms, athletic facilities, special needs provision).

- Numbers of students and teachers
- Building performance, relating to basic safety, functionality, comfort, life cycle (operating) costs, condition, and disabled access
- Aesthetics, external environment, symbolic value/contribution to wellbeing
- Demographics: pupil population and enrolment projections
- Relationship between the educational facilities, and the education system and 'educational brief' – community use, sustainability, etc.

Source: Summary of OECD/European Investment Bank Workshop on Strategic Investment.

School building codes, regulations, and standards, with monitoring and enforcement mechanisms. The primary objective of school building codes and regulations should be to protect the health and safety of the occupants of a school building. Steps should be taken to ensure that the

implementation and enforcement of codes and regulations are done in a consistent manner for both new and existing schools. Designs for school buildings should be verified by qualified reviewers, newly constructed school facilities should be reviewed and certified, and codes and regulations should be reviewed regularly by the appropriate authorities (see *Box 14*).

Box 14. The 1933 Field Act in California

The Long Beach earthquake of 10 April 1933 destroyed 70 schools, and another 120 schools suffered major structural damage. Fortunately, the earthquake occurred when the buildings were unoccupied. The Long Beach earthquake forced engineers, public officials, and the general public to make the protection of public structures – particularly schools – against earthquakes a public policy goal. On 10 April 1933, the Field Act was adopted. Following the act, buildings were to be designed according to state standards, and plans and specifications prepared by qualified and state-registered designers. The quality of construction would be enforced by independent review and inspection. In addition, design professionals, the independent inspector, and the contractor had to certify under penalty of perjury that the building was constructed according to the approved plans. The Division of the State Architect (DSA) was established as the jurisdictional authority within the state of California to enforce the Field Act.

Source: OECD. 2004. *Keeping schools safe in earthquakes.* Paris: OECD. http://browse.oecdbookshop.org/oecd/pdfs/free/9504021e.pdf

Standards can create a measurable indicator by which to measure the progress, performance, quality, and management of the facility in a timely manner (see *Box 15)*.

A strategic educational brief – referred to as 'educational specification' in North America – describes the facility and site requirements to accommodate an educational programme, activities, and support functions. It also provides performance standards and minimum parameters that the buildings must satisfy, and is used as a basis for the building design. The brief, which is used in conjunction with the design guidelines and technical specifications, provides a thorough approach to designing or renovating facilities of consistency and quality. It should include the following:

- Project-specific information, such as scope of work, budget, and schedule for completing key events during the projects.

- Description of the features and functions of educational spaces.
- Capacity and enrolments.
- Broad performance criteria.
- Relevant contextual information, such as climate, geography, characteristics of the community and its needs, and knowledge of existing facilities.

Box 15. Design quality indicators

In December 2005, the Design Quality Indicator (DQI) for schools was launched in the United Kingdom to assist stakeholders (teachers, parents, school governors, students, community members, local authority clients, and building professionals) to achieve design excellence in new or refurbished school buildings and grounds at four different stages of the building's life cycle. The DQI for schools measures design quality according to three criteria:

- **Functionality**. The building should provide access for all and space for teaching and non-teaching activities, and should be able to adapt according to changing needs.
- **Build quality**. The building's finishes should be durable; the design should minimize the requirements for mechanical ventilation, cooling, and heating; and the layout, structure, and engineering systems should be well integrated, using sustainable materials and systems.
- **Impact**. The building should be well sited and display character and innovation; forms and materials should be well detailed; and the facility should contain pleasant circulation spaces, common areas, and natural light

Source: OECD. 2006. Design quality indicator for schools in the United Kingdom. PEB Exchange. Paris: OECD.
www.oecd.org/dataoecd/63/16/37697425.pdf

Local expertise and training and qualification of local professionals, builders, and technicians. Engineers and architects should be properly trained and licensed by competent local authorities, and their training should include elements specific to school design and construction. The qualifications of local contractors should be considered when undertaking construction projects. Local building officials, plan-check professionals, and inspectors should be certified through a process of adequate training and experience (see *Box 16*).

Box 16. Nepal National Building Code Development Project

Following the 1988 earthquake in Nepal, UNDP launched the Nepal National Building Code Development Project. In the course of the project, a number of obstacles to developing local expertise in Nepal were identified:

- Past lessons had been forgotten. Nepal was struck by devastating earthquakes in 1934 and 1988. By 1998, the lessons learnt following the 1934 earthquake had unfortunately been long forgotten...
- Disagreement between experts. Problems can arise when experts disagree with each other, and this often provides a justification for inaction...
- Lack of empowerment of local experts. In many cases, national experts have the technical knowledge to undertake project work. During the author's time in Nepal, this fact was regrettably ignored because the presence of a foreign 'expert' was considered necessary to influence higher levels of government, which otherwise would have been difficult. Affirmation by the foreign expert of the local experts' technical competence improved the latter's credibility among the political and social hierarchy, further demonstrating a lack of regard for local experts.
- Disregard for simple solutions. In some cases, simple, inexpensive solutions can solve common problems.

Source: OECD. 2004. *Keeping schools safe in earthquakes*. Paris: OECD. http://browse.oecdbookshop.org/oecd/pdfs/free/9504021e.pdf

Maintenance over the life cycle of the building. Maintenance is a continuum of activities ranging from predicting or preventing failures to capital improvements or renovations, with repairs and 'support maintenance'. Becker (2011)[15] suggests how to manage resources to meet these needs:

- **A Custodial Procedures Manual**, which describes routine and renovation cleaning activities related to daily operations and upkeep of facilities, including related supervisory and management activities.
- **A Maintenance Plan**, which aims to maintain, conserve, and protect the state, condition, and efficiency of the facility. This may include a computerized system for reporting, tracking, and inspecting maintenance issues; training criteria for maintenance personnel; and processes and procedures for inspection of, for example, cleaning, servicing and repair of heating, ventilation and air-conditioning

15. T. Becker. 2011. 'What constitutes maintenance?' In: Facilities Manager, 27(4), 14–17.

systems, kitchen equipment, lighting, plumbing, sprinkler systems, etc.

- **A Facilities Improvement Plan**, which is developed by a school district to supplement the school's maintenance plan by identifying specific interventions and actions to undertake with regard to custodial, maintenance, repair, and renovation activities in the school district, and describing how the school district will remedy those areas in which the school district is experiencing problems relating to its facilities.

Continuous M&E. Evaluation should be a continual process to ensure that the space remains fit for its purpose throughout its life as educational and building performance and operational requirements evolve and change. The goal of any evaluation process is to feed results back into the building cycle and seek to raise awareness among those who can influence funding and improve design, namely officials and decision-makers. Evaluation should be conducted throughout the building's life cycle and its various stages, i.e.

- the pre-design phase
- the design phase
- the construction phase
- 12 to 24 months after initial occupation
- at any stage during the building's use, following, for example, major renovation or restructuring work or a major change in educational policy affecting educational infrastructure.

Involving the school community in the evaluation of the space can promote a sense of belonging and ownership. Current qualitative approaches have focused on asking the users of the space (i.e. students, staff, parents, and community members) how the space meets their educational, social, professional, and other needs. Thus, the users of the space feel empowered to influence their physical environment. However, other tools have been used by other stakeholders, including asset and facilities managers, researchers, and educationalists.

A number of methods have been used in different countries to evaluate quality in educational spaces, including the Facility Performance Evaluation, which uses a variety of qualitative research tools (e.g. walkthroughs, focus groups, interviews, observation) to assess the educational effectiveness and building and operational performance of a

facility over the life cycle, from the perspective of the building's users and other key stakeholders in the procurement process (see *Box 17*).

Box 17. OECD/CELE International Pilot Project on Evaluating Quality in Educational Spaces (EQES)

In 2009–2010, an international pilot project involving seven countries was conducted to assist education authorities, schools, and others to maximize the use of and investment in learning environments. A number of tools were implemented by project managers, school principals, teachers, and students in a total of 27 secondary schools:

- **Priority-rating exercise for OECD quality performance objectives**. The objectives of this tool are:
  1. to give a better understanding of the broader contextual issues and constraints that may have an impact on quality in educational spaces; and
  2. to establish broad benchmarks against which the performance of the school can be evaluated. Twenty-two OECD quality performance objectives were developed, each one broadly reflecting the criteria in the CELE Organising Framework.
- **Educational facility analysis.** The objectives of this tool are:
  1. to provide descriptive information on the school, with a view to inform the social, economic, demographic, educational, and operational context of the school's quality performance objectives; and
  2. to collect comparative data from staff and students on objective – or quantifiable – aspects related to quality in educational spaces.
- **Student and staff questionnaires.** The objectives of this web-based tool are:
  1. to understand how staff and students perceive quality in educational spaces in terms of accessibility, use of teaching and learning spaces, comfort, the school's image, safety and security, and maintenance; and
  2. to collect comparative data from staff and students on subjective aspects related to quality in educational spaces.
- **Focus group.** The objectives of this tool are:
  1. to explore in greater depth common and conflicting issues raised in student and teaching staff questionnaires; and
  2. to develop common recommendations (by focus groups of students and teaching staff) about improving the school's educational spaces. Each school is required to set up at least one student focus group and one teaching staff group.

Source: OECD. 2010. *User Manual, International Pilot Project on Evaluating Quality in Educational Spaces (EQES)*. Paris: OECD (www.oecd.org/edu/facilities/evaluatingquality).

8.3 Capacity development requirements

Capacity development requirements are expressed in relation to the 12 principles of effective planning and management of educational infrastructure described in the preceding chapter.

Table 5. Principles of effective planning and management of educational infrastructure and capacity development requirements

Principle of effective planning and management of educational infrastructure	Capacity development requirement
1 A national policy and high-level policy commitment to improving the quality of educational infrastructure	• Enlist local political support for the project
2. A statement of needs, with available resources and timeline	• Establish criteria by which to replace, remodel, or re-invest in a school • Rank needs according to short- and long-term priorities, while allowing sufficient flexibility to account for the unexpected and between-schools differences • Develop a communications strategy
3. A strategy to assess and prioritize needs	• Establish clear criteria for prioritizing projects, thereby minimizing political lobbying
4. A clear definition of the roles and responsibilities of the various individuals, agencies, and organizations involved in planning, with a transparent process for planning, design, regulation, and enforcement-related decisions	• Define accountability in the strategic phase • Assign roles and responsibilities in the strategic phase, and reassess them in the implementation phase. Avoid lengthy, bureaucratic processes
5. Understanding the planning process	• Map the planning process in consultation with all stakeholders
6. Involving the community	• Involve communities in decision-making at every stage of the process

Principle of effective planning and management of educational infrastructure	Capacity development requirement
7. A building inventory and on-going condition assessment	• Clearly define the purpose of the assessment, and the data and methodology needed to meet the purpose • Find the appropriate respondent and avoid respondent burden • Provide clear definitions and use appropriate terminology • Create incentives (e.g. sufficient funding) to complete the assessment
8. School building codes, regulations, and standards, with monitoring and enforcement mechanisms	• Develop and enforce procurement procedures and legal frameworks, and respect legislated procurement procedures
9. Strategic educational briefs	• Involve the appropriate actors when developing briefs. In some cases, responsibility for developing briefs lies with national or regional agencies; in others educational briefs are the responsibility of the local authorities • Clearly define their roles and responsibilities regarding the development of the brief • Agree on a schedule for collecting critical information to be included in the brief
10. Local expertise, and training and qualification of local professionals, builders, and technicians	• Harness local expertise • Develop training and professional development programmes led by local experts
11. Maintenance over the life cycle of the building	• At the school level, develop a maintenance plan and a custodial care manual • At the local level, develop a plan that supports school-level maintenance procedures
12. Continuous M&E	• Conduct focus groups and workshops involving students, teachers, designers, and other stakeholders over the course of the project to determine if the facility is meeting users' needs

8.4 Tools and approaches available

Establish a stakeholder group to engage members of the community, local businesses, local authorities, teachers, students, and others in the

planning and construction process. Sharp (2008)[16] outlines how communities and others can inform themselves on how school facility planning works in your community:

- Ask to review a copy of the school district's facility master plan.
- Enquire about how school investments are planned in your jurisdiction.
- Find out what state and local policies or rules drive school investment decisions in your town.
- Support the maintenance of your community's existing school facilities.
- Educate school board members and planning commissioners on the implications and opportunities related to school spending.
- Think creatively, and never underestimate fiscal arguments.
- Be proactive in reviewing school projects brought before the planning board.

Build local knowledge and capacity at every stage of the project, from pre-planning to occupation.

Broaden perspectives through research. Conduct research on exemplary programmes and facilities, and guidelines, standards, and regulations regarding educational infrastructure, both nationally and internationally (see OECD. 2011. *Designing for education: Compendium of exemplary educational facilities 2011*) and *OECD/European Investment Bank Database of Best Practices in Educational Facilities Investments* [www.edfacilitiesinvestment-db.org/].

Broaden perspectives through experience. Organize a site visit for local stakeholders to a facility located in the region or even outside the country of reference.

Start small. A local demonstration project may serve to increase the buy-in of stakeholders, secure future funding, and test new processes.

16. M. Sharp. 2008. *Local governments and schools: A community-oriented approach* (ICMA IQ Report, Volume 40, Special Edition). Washington DC: ICMA. http://icma.org/Documents/Document/Document/5753

8.5 Sources of supply/support for capacity development

British Council for School Environments (BCSE: www.bcse.uk.net/). BCSE, as an independent UK body founded in 2006, acts as a forum for exchange, dialogue, and advocacy for anyone interested in designing, building, and transforming schools, colleges, and other learning environments.

CELE Exchange (www.oecd.org/edu/facilities/journal). This is the journal of the OECD Centre for Effective Learning Environments (CELE) (formerly the OECD Programme on Educational Building [PEB]). It addresses issues related to providing a quality educational infrastructure in a cost-effective way.

CELE Evaluating Quality in Educational Spaces web pages (www.oecd.org/edu/facilities/evaluatingquality). This website presents research papers on methodologies for evaluating the quality of educational facilities, in addition to an international quality framework and international evaluation project.

The Council of Educational Facility Planners (CEFPI: www.cefpi.org), with chapters in the United States and Australia, is a non-profit organization for professionals. It is a source of information for building, renovating, and evaluating schools in order to create optimum educational facilities.

Designing for Education. Compendium of Exemplary Educational Facilities 2011 (www.oecd.org/edu/facilities/compendium). The full-colour publication showcases 60 educational facilities from 28 countries. Each illustrates excellence in one or more of the following areas: innovation in design, fitness for purpose, sustainability, and safety.

DesignShare newsletter (www.designshare.com/index.php/enews). The goal of this newsletter is to share innovative best practices from around the world in the field of school design with a broad range of stakeholders interested in designing for the future of learning.

Facilities Manager (www.appa.org/FacilitiesManager/index.cfm). This bi-monthly US-based journal of the Association of Higher Education Facilities Officers (APPA: www.appa.org/) is dedicated to the maintenance, protection, and promotion of quality educational facilities.

OECD/EIB Database of Best Practices in Educational Facilities Investments (www.edfacilitiesinvestment-db.org). This international database is a powerful tool to inform the development of innovative educational spaces – in policy and in practice. Detailed information on exemplary design projects, including images, architectural drawings, and videos, will be linked to a bibliographical reference tool for planning and managing educational infrastructure.

National Clearinghouse for Educational Facilities (NCEF, www.ncef.org). Sponsored by the National Institute of Building Sciences, NCEF provides extensive resources (mostly US-based) on designing, building, and maintaining safe schools.

School Construction News (www.schoolconstructionnews.com). This journal provides information about the educational construction industry. It features a monthly building report, specifications and information on a facility and product of the month, links, and a calendar of events.

UK Design Council and CABE (www.designcouncil.org.uk/resources-and-events/Schools-and-education/). This site provides free resources for use in the classroom or lecture theatre, a short film about the last 50 years of British design, information about design in eight countries, and a 10-step guide to running a creative design workshop in schools.

8.6 Further references on the topics

For further references, consult the following extensive databases, which provide updated references on a range of topics:

National Clearinghouse for Educational Facilities (NCEF: www.ncef.org/rl/). This site includes more than 18,000 references (mostly US-based), arranged in 160 subject-specific resource lists. Resource list categories are pre-planning, planning, design, school spaces, school grounds, case studies, safe schools, healthy schools, high performance schools, technology, materials and equipment, financing, building and operating costs, construction, and maintenance and operations.

OECD/EIB Database of Best Practices in Educational Facilities Investments (www.edfacilitiesinvestment-db.org/references). This site includes more than 200 references from 20 countries on strategic planning; legislation, regulations and standards; investment guidelines and policy;

funding guidelines for schools; procurement (general strategies, e.g. public and private partnerships); cost management and estimations; briefing; design guidelines; condition assessment; and evaluation (including design quality assessment and post-occupancy evaluation).

PART III

IX. Preparing and Managing Capacity Development Programmes in the Education Sector: Processes and Resources

9.1 Introduction

This chapter deals with the process of preparing, launching, and managing a CD programme. It provides the general CD framework that EFOS is expected to follow, with the technical aspects laid out in the preceding chapters. In other words, it deals with an overall architecture of CD that should be furnished with a technical CD know-how of relevant policy domains.

The chapter begins by setting the scene in the context of a new UN programme delivery approach, and examines its implications for UNESCO's CD programme and the role of UNESCO's field staff. The important issue of coordination among UN agencies and what it implies for CD programmes will be discussed. Then UNDP's five-step process (a CD framework that has been followed extensively by many bilateral development and UN agencies) will be explained. After briefly describing each of the five steps in education specific terms, features of successful CD programmes will be presented. Brief case studies are provided in boxes to show the lessons learnt and illustrate these features.

A key element in successful implementation of CD programmes is to find financial and technical support. The concluding two sections provide a selective inventory of sources of such support that EFOS can turn to in designing and implementing CD activities pertaining to education PPM.

9.2 Reforms in the approaches to programme delivery and its implications for UNESCO's CD programmes

In view of better responding to the needs of its Member States in support of national development goals, MDGs, and EFA goals through more effective and coherent programme delivery, the UN has been reforming itself. Following the on-going UN reform since 2006 and, in particular, in the contexts of 'delivering as one' in one-UN pilot countries, a number

of challenges, but also numerous opportunities, have been observed and documented in UNDG (2009).

The following paragraphs will explain briefly how challenges and opportunities deriving from this on-going reform will impact UNESCO in terms of its policy implications, being a technical and specialized UN organization, when delivering capacity development programmes in education and beyond at country level.

Below are listed the opportunities in terms of programme delivery at country level.

- Country support in line with the national priorities becomes more strategically oriented.
- Enhanced national ownership and commitment.
- Promote more inclusive UN system assistance delivery at country level.
- Promote an enabling environment for the development of UNESCO country programming documents in the more cohesive United Nations Country Team (UNCT) contexts.
- Aim for cost-effective and coherent country support closely in line with the Paris Declaration on Aid Effectiveness in 2005.
- In terms of coordination among UNCT and other stakeholders, a coordination role of the government has been strengthened vis-à-vis the UN family.

Challenges that arise from the reform, both in terms of administrative and strategic points of view, are given below.

- Limited capacities, being a non-residence agency, time-consuming tasks on top of their programme delivery, extra layer of reporting (be it yearly or quarterly), and additional burden for staff.
- Agencies are not equal in terms of funding, hence the reform determines the 'weight' of representations within UNCT.
- As many agencies may have an interest in similar types of thematic areas, sometimes clear demarcation or division of labour among UNCT proves difficult.
- Consequently, the reform may create a competitive environment for a non-large-scale funding agency like UNESCO.

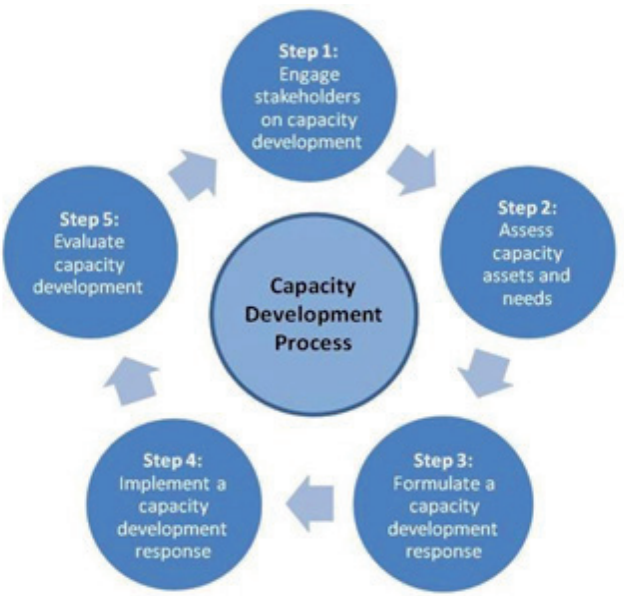
(This section is based on the resources and information available on the UNESCO website of the Bureau of Strategic Planning (BSP) at:

www.portal.unesco.org/en/ev.php-URL_ID=36915&URL_DO=DO_TOPIC&URL_SECTION=201.html)

9.3 Process of preparing and implementing CD activities

This section describes the five-step process that has been used extensively by the UNDP, as well as many bilateral development agencies and UN agencies, including UNESCO. It is an overall framework adopted for a major extra-budgetary programme, Capacity-Building for Education for All (CapEFA). The process first begins with stakeholder engagement (Step 1), followed by a systematic process for capacity needs assessment (Step 2), formulation and implementation capacity development programmes (Steps 3 and 4), as well as monitoring and evaluating (Step 5)[17]. Each step is briefly formulated in Figure 9 in the specific context of education.

Figure 9: UNDP capacity development process



Source: UNDP, 2008.

17. For more information on the general five-step process, please see UNDP (2008).

Engaging stakeholders on CD (Step 1)

A successful CD begins with consultations, advocacy, and consensus-building, as political commitment at the ministerial levels (e.g. ministries of planning, education, and higher education) and sponsorship among stakeholders are key to sustainable and effective CD interventions. The participatory approach ensures that all parties are in agreement in terms of CD priorities, and that they commit to moving forward in the proceeding steps of CD. Such a process strengthens participants' ownership and responsibility for its results. Early stakeholder engagement is also crucial in effectively embedding the CD agenda in a broader institutional reform process so that it will amount to the country's effort to meet national education development targets in the long term.

Assess capacity assets and needs (Step 2)

- Once an enabling change environment has been created through stakeholder engagement, the next step is to examine the capacities and performance of existing education structures and procedures. It is observed that where CD programmes are conducted without any rigorous assessment on its basis, the reposes are often limited to ad hoc trainings. However, while often necessary, training is not sufficient for sustained results (UNDP, 2009).
- UNESCO, in collaboration with UNDP, has developed an operational assessment methodology to guide countries in conducting a capacity needs assessment exercise in the area of education PPM. For more details, please see UNESCO-UNDP (2012).

Formulate a capacity development response (Step 3)

- In Step 3, responses to the capacity needs identified in the assessment exercises are formulated. It is important to note that while the CD agenda should be embedded in a broader, longer-term reform process, in many cases the response takes the form of a collection of capacity development actions or a project/programme with tangible results that addresses one or more capacity areas and/or functions of education policy and planning as those are mutually complementary or reinforcing. The UNESCO-UNDP Capacity Needs Assessment Methodology (UNESCO-UNDP, 2012) and the accompanying Implementation Plan spell out suggested steps in utilizing the assessment results and formulating sustainable CD responses.

Implement a capacity development response (Step 4)

- A natural sequence after the formulation of a CD response is to implement a project or programme. More often than not, a response is composed of a series of smaller interventions that are interlinked or mutually reinforcing. Two points need to be taken into account. First, as in any other mid- to long-term project or programme, a monitoring mechanism needs to be embedded in the implementation, during and beyond, in order to enable course correction and ensure effectiveness of the proceeding evaluation phase. Secondly, in cases where a CD response takes the form of institutional or organizational change, the result is that there are often 'winners and losers'. Therefore, it is important to take into account the political dynamics and relationships at the time of implementation (UNDP, 2009).

Evaluate capacity development (Step 5)

- The concluding step of the CD process cycle is the evaluation of the CD response. This can be measured by changes in performance in terms of improvements in efficiency and effectiveness in assuming education PPM tasks. In so doing, it is important to have or use performance indicators that are incorporated into an existing M&E framework. A separate system should not be required, as 'there is little point in having an elaborate evaluation framework if there are insufficient capacities and resources to use it or if relevant data is unavailable or of low quality' (UNDP, 2009: 2–6). In the end, an effective evaluation of CD should promote accountability, performance management, as well as learning through the process itself and ensured sustainability of improvements.

9.4 Features of successful CD programmes

Existing literature points to the following guiding principles that EFOS would need to consider in preparing and implementing successful CD activities.

Country ownership and leadership: An effective CD process first and foremost requires political commitment. Extensive consultations are particularly important at the outset of the CD cycle – though it should be taken into account throughout – to make sure that all the line ministries (i.e. ministries of education, higher education, finance, and planning) are in agreement with the entire process and that they are at the forefront of the capacity development effort. In addition, the agenda of a successful CD intervention is envisaged beyond specific sectors or sub-sectors, and

is embedded in broader national development priorities. This is more effectively done where there is a strong sense of ownership to the whole process by the country.

Engaging the collaborating agencies: It is equally important to engage partner agencies working at the country/regional level (i.e. the World Bank, the Regional Bank, UNICEF, bilateral agencies) and the UN Country Team in the CD process, both from the point of view of aid effectiveness and efficiency of service delivery. Through a consultation mechanism such as the local education group, their technical as well as financial resources can be explored and mobilized. Not only should the programme proposals be developed collaboratively, the consensus package should be disseminated widely, both within the ministry and among stakeholders in the country (UNESCO-UNDP, 2012).

Long-term nature and sustainability: CD should be considered as a process and not as an isolated activity. As described earlier, successful CD intervention builds upon extensive consultation between stakeholders (both national and international), and rigorous capacity development requires assessment exercises, followed by close M&E. It is through this entire process that any CD activity can maximize its impact and gain sustainability. In terms of implementation, it is recommended that the CD process be managed through existing national systems and processes, rather than through a parallel system that is handled by independent project implementation units (UNDP, 2009).

Building upon the existing capacities, skills, and knowledge: Any capacity development activities should be built upon the capacities, skills, and knowledge that already exist in the country or organization. Similarly, on-going CD efforts should be well examined and taken into account at all stages of CD preparation to avoid duplication and strengthen complementary efforts.

9.5 Technical resources available in support of CD programmes

In education, much work has been done in the area of education sector analysis and plan preparation, often backed up by the support of major multilateral banks. Bottlenecks are identified more and more at the level of plan implementation, and national capacity in education planning and management is recognized as key to sustained improvements in sector performance.

The following lists a selected number of institutes that provide capacity development programmes and/or related technical resources in the area of education policy, planning, and management. Regional bureaus usually have a unit devoted to sector-wide policy and planning and they also have networks and resources that are specific to the region.

United National Development Group (UNDG)

UN Country Programming Principles > Capacity Development (URL)

The UNDG has agreed on a common approach to capacity development and articulated the role of UN country teams in a joint position statement. The UNDG capacity assessment methodology guides the assessment of capacities and the formulation of capacity development strategies at the country level. The page contains links to a number of resources on UNDF strategies to capacity development including the following:

- *Position Statement on Capacity Development* (2006) (PDF 92Kb)
- *Capacity Assessment Methodology User Guide* (2008) (Word 1.1Mb). The methodology helps UNCTs assist national partners in analysing their capacity assets and needs, and in designing capacity development strategies. It consists of a capacity assessment framework, a process, and a supporting tool.
- *Capacity Assessment Supporting Tool* (Excel 519Kb)

United Nations Development Programme (UNDP)

Capacity Development (URL)

Information on the UNDP approach to capacity development, its five step process, country support, and resources.

Capacity.org (URL)

Capacity.org is a web magazine-cum-portal intended for practitioners and policy-makers who work in or on capacity development in international cooperation in the south. Capacity.org is jointly published by the European Centre for Development Policy Management (ECDPM) and SNV Netherlands Development Organisation and UNDP. For archives, see www.capacity.org/en/content/view/full/113

Knowledge Resources (URL)

This section presents a number of resources related to capacity development, including country and case studies, policy and practice notes, research and discussion papers, and guidelines and toolkits. Among those are:

- *Supporting capacity development: The UNDP approach* (2009) (PDF 676Kb). This resource articulates a series of UNDP policy statements and services in support of capacity development efforts at global, regional, and country levels.
- *Capacity assessment practice note* (2008) (PDF 611Kb). This Practice Note document explains the basics of capacity assessments: the concepts, the entry points, and the methodological issues. It includes a review of selected organizational assessment tools and a UNDP framework and tool to assess the enabling environment/ national level capacity.
- *Capacity development practice note* (2008) (PDF 647Kb). This Practice Note provides UNDP staff and other development practitioners with a basic understanding of core capacity issues.
- *Capacity assessment methodology: User's guide* (2008) (PDF 1.14Mb) and *Capacity assessment supporting tool* (2008). (Excel) The User's Guide provides UNDP and other development practitioners with an overview of UNDP's approach to CD and capacity assessment using UNDP's 'default' Capacity Assessment Framework and Supporting Tool.
- *Capacity for development: New solutions to old problems* (2002). (PDF 2.17Mb) / *Executive Summary* (PDF 408Kb): The paper examines the achievements of technical cooperation and offers recommendations for reform in the context of globalization, democratization, the information revolution and the growth of capacities in the South.
- *Developing capacity through technical cooperation: Country experiences* (2002) (PDF 1.3Mb). The document provides concrete inputs to rethinking technical cooperation for today's challenges based on six country studies – Bangladesh, Bolivia, Egypt, Kyrgyz Republic, Philippines, and Uganda.
- *Ownership, leadership, and transformation* (2003) (PDF 1.8Mb). The book explores the operational implications from the standpoint of CD for dealing with longstanding development dilemmas. It also addresses some of the most problematic issues related to incentives, such as compensation schemes, project implementation units, brain drain and corruption.

OECD-DAC

The DAC's work in the area of governance is carried out through its Network on Governance, an international forum that brings together practitioners of development cooperation agencies and experts from partner countries. Capacity development is covered as one of the central topics.

Capacity Development – DAC Initiative (URL)

- *Working Group on Capacity Development*: The following topics of broader interest are covered by this group: CD and country systems; state building and CD in fragile situations; CD and the Southern perspective; good practice in CD at the sector/theme level; and systemic impediments that undermine CD.
- *Capacity development learning: Capacity development of country systems, Issues Brief 1* (2009) (PDF 869Kb)

Learning Network on Capacity Development (LenCD) (URL)

LenCD is 'an informal network of analysts and practitioners aimed at creating a global community of practice around CD' (taken from www.lencd.org/about). Its objectives are to facilitate the sharing of lessons and identify quality criteria for good practice; to promote research, share experiences, monitor outcomes, and carry out other empirical work; to foster country-level, regional, and international dialogue and collaboration; to promote the mainstreaming of CD issues in agency operations; and to act as a key partner to advance the OECD/DAC's capacity development agenda.

LenCD resource corners (currently under development) presents initial resource corners around several themes, including 'Technical Cooperation: alternatives, quality standards for CD support', 'CD in National, Sector, and Thematic strategies', 'CD in Fragile Situations', and 'Country Systems Capacity-Aid Management, PFM, Procurement, and RBM'.

- *Working towards good practice. The challenge of capacity development* (2006): While not specifically focusing on experiences in the education sector, this paper provides an extremely useful, concise, and coherent framework for re-thinking CD as an endogenous, country-led process that cuts across different levels. It

brings together good and bad experiences of many diverse agencies over time, and extracts consensus on good CD practice in line with the Paris Declaration (PDF 444Kb).

European Centre for Development Policy Management (ECDPM)

Capacity Development (URL)

'ECDPM completed a five year research programme entitled *Capacity, Change and Performance*. The research provides fresh perspectives on the topic of capacity and its development. [...] In total, 16 case studies were prepared that embrace a wide spectrum of capacity situations covering different sectors, objectives, geographic locations and organisational histories [...] The case studies are complemented by seven thematic papers, and five workshop reports.'[18] Directly relevant to the education sector are three case studies on capacity development for decentralized education service delivery.

- *Capacity building for decentralised education service delivery in Ethiopia* (2005) (PDF 404Kb) (also available in French).
- *Capacity building for decentralised education service delivery in Pakistan* (2005) (PDF 672Kb).
- *Capacity building for decentralised education service delivery in Ethiopia and Pakistan: a comparative analysis* (2005) **(**PDF 698Kb**).**

More information on the methodology used for the study, thematic papers (not education specific) and a synthesis report are available from the bottom of the webpage.

- *Monitoring and evaluation of capacity and capacity development* (2005) (PDF 766Kb): This paper examines the M&E of CD in developing countries. It draws key conclusions and issues raised by a number of case studies. The issues covered include: (i) the uneven level of attention paid to M&E; (ii) the variety of approaches to M&E; (iii) problems surrounding follow-up by development agencies; and (iv) encouraging insights derived from innovative approaches to M&E for capacity and CD. Two broad schools of

18. Taken from www.ecdpm.org/Web_ECDPM/Web/Content/Navigation.nsf/index2?readform& www.ecdpm.org/Web_ECDPM/Web/Content/Content.nsf/0/77BA29B424499B59C12573FB0054BEDB ?OpenDocument

thought are identified and examined: those who have pursued results-based management approaches and those who advocate thinking-based approaches.

Europ Commission – EuropeAid

- *Institutional assessment and capacity development* (2005) (PDF 680Kb): This guidance note offers a conceptual framework to enable readers to engage in dialogue with stakeholders and specialists about (i) institutional and capacity assessment, and (ii) capacity development issues, mainly in the public sector areas. Organized around seven sections, the note proposes a stepped institutional assessment method, presents the basic dimensions of organizational assessment, and ends with the typical characteristics of CD and change processes, and the possible role and support of donors.

Asian Development Bank (ADB)

- By adopting CD as a thematic priority in 2004, ADB acknowledged that strengthened country capacity is not only a means to achieve public sector performance, but is a goal in its own right. A working group was established to develop an operational mid-term framework and budgeted action plan to enhance the effectiveness, efficiency, and sustainability of ADB-supported CD interventions.
- *Integrating capacity development into country programs and operations: Medium-term framework and action plan* (2007) (PDF 276Kb). This report summarizes the findings and recommendations of the working group.

Capacity Development (www.adb.org/Capacity-Development/)

The Capacity Development Resource Center provides access to practical tools, guidelines, case studies, model practices, academic literature, and other references on CD to facilitate dissemination of knowledge in key areas. For more information on related topics, please also visit the resource centres for anticorruption/integrity, consultation and participation, governance, and managing for development results. The ADB Institute also maintains a publications listing of resources related to capacity building.

- *Draft practical guide to capacity development in a sector context.* (working draft, 2008) (PDF 760Kb). This practical guide has been

developed in response to the targets defined in ADB's action plan for CD. It is designed primarily to increase demand-orientation and effectiveness of upstream technical capacity development support. The guide also provides guidance for assessing capacity development needs and strategies.

- *Effectiveness of ADB's capacity development assistance: How to get institutions right* (2008) (PDF 539Kb). Building on the findings of (i) existing evaluation studies related to capacity development, and (ii) an analysis of four sectors including education across three countries (Cambodia, Nepal, and Philippines), the study examines performance at four levels, i.e. individual, organizational, network of organizations, and the enabling environment.
- *Capacity for results management: A guide for conducting a rapid assessment of the capacity of developing member countries to manage for results* (2006) (PDF 2.1Mb).

Norwegian Agency for Development Cooperation (NORAD)

- *Inter-ministerial cooperation: An effective model for capacity development?* (2006) (available free of charge upon request). The main purpose of the evaluation is to provide insight into institutional capacity building represented by twinning arrangements in the educational sector between Norway and Nepal/Zambia respectively, and to assess the relevance of twinning arrangements as a means of technical assistance.

German Federal Ministry of Economic Cooperation and Development (BMZ)

- *Capacity development for Education for All: Putting policy into practice* (2007) (PDF 894Kb). This is a synthesis of the discussion and main findings of the international forum hosted by BMZ in October 2007. '... highlighted priorities for CD strategies to be successful: governments and donors should take a systematic approach to CD, and understand CD beyond training; stakeholders must agree on a clear definition of roles and civil society, including the private sector, is critical to tapping into existing capacities and achieving EFA' (source: www.bmz.de/en/).

UK Department for International Development (DFID)

- *Promoting institutional and organisational development* (2003) (PDF 464Kb): *A source book of tools and techniques* (2003) (PDF 714Kb). Based on DFID's experience, this document aims to 'help the reader distinguish between the institutional and organizational, to identify institutional problems that inhibit improvements at the organizational levels.' The document is comprised of two volumes: guidelines, and a source book of tools and techniques used by those involved in institutional development.

Canadian International Development Agency (CIDA)

- *Capacity development: Why, what and how?* (2000) (PDF 169Kb). In brief, the paper outlines some of the reasons for the emergent interest in CD within the international development community. It also attempts to explain what is meant by the term capacity development while detailing some of the implications for donors and developing countries of embracing a CD approach.
- *Decentralization and capacity development: Understanding the links and the implications for programming* (2001) (PDF 93Kb). The paper highlights the challenges that decentralization programmes face in terms of CD.

International Institute for Educational Planning (IIEP *(www.iiep.unesco.org)*

Created by UNESCO in 1963, IIEP's main mission is to strengthen the capacity of countries in planning and managing their education systems through training planners and managers, supporting institutions in improving administrative routines, organization, and leadership skills, and fostering and enabling environment through policy forums, international cooperation and networking. The specific line of activities includes:

- *training*: to fit different needs, a variety of possibilities are provided, such as full-year courses, shorter intensive training, and distance education;
- *research*: results provide methodological and technical support to policy-makers. It includes case studies on policy issues and on technical and methodological aspects, allowing identification of priorities, best practices, and innovations;

- *technical assistance*: IIEP's competences are used to meet countries' specific needs.

(Adapted from www.iiep.unesco.org)

Pôle de Dakar
(www.poledakar.org/)

The Pôle de Dakar, created in 2001 under the initiative of France and the UNESCO Regional Office for Education in Africa, aims at equipping development stakeholders (countries and development partners) with a resource centre specialized in education sector analysis and strategies, as well as policy implementation and monitoring for EFA.

The Pôle de Dakar places particular emphasis on capacity building by organizing training workshops (using sector analysis in educational strategy, use of information systems in the strategic management of education, training in the calculation of educational indicators and in the sector analysis support kit ANASEC, and interaction between economy and education, etc.) and with the design of new methodological and analytical backup material.

(Adapted from www.poledakar.org/)

Asian Network of Training and Research Institutions in Educational Planning (ANTRIEP)
(www.antriep.net/)

ANTRIEP is a network of national and regional institutions in Asia, created in December 1995 with the support of IIEP, with a view to provide an established mechanism for exchanging experiences among training and research institutions in educational planning and management. It was considered that such a network would effectively harness the capacity building potential available within the region by strengthening individual member institutions and placing them in a better position to respond to the training needs of their respective countries.

The networking of ANTRIEP resolves around the following four main activities:

1. *Collaboration on themes of common interest*: Member institutions collaborate on research and training activities on themes of common interest.
2. *Exchange of information among member institutions*: The ANTRIEP Newsletter, published twice a year, presents thematic, in-depth articles on issue of common interest and news about activities in the member institutions. Research reports, training materials, course design prototypes, and other materials are also exchanged on a bilateral basis
3. *Organization of annual meetings*: The annual meetings enable professionals to learn from each other in a systematic way and facilitate the implementation of various training and research activities. Each meeting lasts about four days and takes the form of a short capacity building seminar on a central theme (chosen at the previous meeting).
4. *Staff exchange programmes*: In the form of short study visits, the exchange programmes enable staff to gain inside knowledge of another institution and country. Visits will enable the visitor and host to exchange and discuss research results and take part in each other's training and research activities.

   (Adapted from www.antriep.net/)

Regional Centre for Educational Planning (RCEP)
(www.rcep-unesco.ae/)

Established in 2007 under the auspices of UNESCO in Sharjah University City, the mission of RCEP is to generate, expand, and share educational planning knowledge, while at the same time building national capacities of the states in the Gulf Region in the field of educational planning and management.

It is recognized that for the mission to be successful, an integrated series of activities in the areas of training, research, and consultancy is needed, as well as capacity building support for Member States to hone administration, planning and management responsibilities. RCEP plans to pursue its mission by providing relevant training to senior education personnel and teaching staff in institutions of learning, by supporting research and studies on educational policy-making, by planning and management, and by the dissemination of the results and findings of its

work among policy-makers, planners, civil servants, politicians, research workers, leaders, and representatives of educational agencies, trade unions, professional associations.

(Adapted fromwww.rcep-unesco.ae/)

9.6 Selected source of financial support to CD

As country ownership and sustainable development gain popularity in the international community in general, capacity development support to countries, particularly at the upstream level, has come to be the centre of attention of major donors at global and increasingly at the decentralized (i.e. regional and country) level. This section provides selected sources of financial support to CD that are available at the global level to UNESCO, who flags CD as the main mandate for the education programme.

Japan has been supporting UNESCO's activities through several funds-in-trust schemes in all UNESCO's field of competence. In addition to two trust funds in the field of culture, the Ministry of Foreign Affairs supports a global trust fund entitled Capacity-building of Human Resources, which is devoted to strengthening human capacity in the developing countries, especially in the least developed countries. This funds-in-trust covers all five programme sectors' activities, including in education, and within the education sector the priorities have been accorded to TTISSA. The Ministry of Education, Culture, Sports, Science and Technology provides financial assistance to the education projects under several programmes, including EFA and Education for Sustainable Development. The Japanese cooperation, through UNESCO/Japan Funds-in-Trust, is extended throughout the world, with focuses on Asia-Pacific and Africa.

Contact: ERC/CFS

The Capacity-Building for Education for All (CapEFA) Programme is a technical assistance programme financed by the Nordic Trust Fund for EFA Capacity Building. It started in 2003 by donors pooling voluntary contributions to support national capacity building and upstream activities in high-priority areas for educational development. Norway, Sweden, and Denmark have been the major contributors to this trust fund. The main characteristics of the countries selected for the 2010/1011 cycle of the programme are least developed countries and low-income countries with low education development indicators as reported in the Global Monitoring

Report. The thematic focus of the programme is aligned with the organization's biennium programming, and the areas covered for the 2010/2011 cycle include TVET, teacher education, literacy, and sector-wide policy and planning.

Contact: ED/EO/SPM

In addition to the Nordic Trust Fund described above, Denmark and Sweden provide voluntary contributions through UNESCO's institutes in the field of capacity building. Norway has also been an important bilateral funding partner in the field of capacity development for UNESCO. For more information on the bilateral cooperation agreements and related funding sources updated on an annual/biennium basis, consult the Extra budgetary HelpDesk (www.intranet.unesco.org/exbhelpdesk) or ERC.

9.7 References

EFA-FTI. 2008. *Guidelines for capacity development in the education sector*. Bonn/Berlin: BMZ/GTZ. http://toolkit.ineesite.org/toolkit/INEEcms/uploads/1039/Guidelines_Capacity_Development_Educ_Sector.pdf

Federal Ministry for Economic Cooperation and Development. 2007. *Capacity Development for Education for All: Putting policy into practice*. Bonn/Berlin: BMZ. www.bmz.de/en/publications/topics/education/special152pdf.pdf

Hite, S.; De Grauwe, A. 2009. *Capacity development in educational planning and management: Learning from successes and failures*. Paris: IIEP-UNESCO. www.iiep.unesco.org/fileadmin/user_upload/Cap_Dev_Rethinking/pdf/Capdev_Planning_and_management.pdf

OECD. 2006. *The challenge of capacity development: Working towards good practice*. Paris: OECD. www.oecd.org/dataoecd/4/36/36326495.pdf

UNDG. 2009. *Delivering as one: 2008 stocktaking synthesis report*. New York: UNDG. www.undg.org/docs/10289/UNStocktakingSynthesisReportV6.pdf

UNDP. 2008. *Capacity assessment: Practice note*. New York: UNDP. http://ncsa.undp.org/docs/760.pdf

UNDP. 2009. *Supporting capacity development: The UNDP approach*. New York: UNDP.
www.sd.undp.org/doc/Supporting%20Capacity%20Development.pdf

UNESCO. 2011. *Capacity development for Education for All (CapEFA): Translating theory into practice. The CapEFA programme* Paris: UNESCO.
http://unesdoc.unesco.org/images/0021/002122/212262e.pdf

UNESCO. 2008. *UNESCO's extrabudgetary activities: A practical guide*. Paris: UNESCO.
http://unesdoc.unesco.org/images/0015/001593/159331e.pdf

UNESCO. 2009. *International cooperation through the UNESCO/ Japanese Funds-in Trust*. Paris: UNESCO.
http://unesdoc.unesco.org/images/0018/001857/185768m.pdf

UNESCO-UNDP. 2012. *Capacity Needs Assessment Methodology in Educational Planning and Management.* Forthcoming.

Appendices

Appendix A.
Review of UNESCO's Capacity Development Programmes

Executive Summary
(February 2008, UNESCO Education Sector)

This report presents the results of an internal review of the UNESCO Education Sector which aimed to take stock of and draw lessons from the current thinking on effective capacity development approaches within the international development community, as well as UNESCO-supported capacity development programmes and networks. It is part of the project 'Capacity Development for Achieving the EFA Goals: UNESCO Strategy', jointly implemented by the Education Sector at the Headquarters, the International Institute for Educational Planning (IIEP) and the UNESCO Institute for Statistics (UIS) with the financial support of the government of Norway. One of the main expected outputs of this project is a policy framework which should allow the Sector to harmonize its capacity development activities and promote regional and inter-regional co-operation in this area.

UNESCO establishes 'capacity building' as one of the five functions that the Organization performs to fulfil its mandate. The United Nations Economic and Social Council recommended that all UN organizations, including UNESCO, support common country-led strategies for capacity development in the pursuit of internationally-agreed development goals. In the field of education, the Global Action Plan: improving support to countries in achieving the EFA Goals (GAP, 2007) identifies capacity development at the regional and national levels as one of the key modalities of support to Member States in achieving the EFA goals and the development of an integrated approach at country level as one of the key ways of supporting national leadership in EFA implementation.

In the context of the on-going efforts to harmonize development aid and co-operation (e.g., the FTI, the GAP, the UN Reform, and the Paris Declaration on Aid Effectiveness), UNESCO further proposes in its

biennial programme and budget for 2008-2009 to initiate the dialogue among EFA stakeholders and development partners in order to co-ordinate and harmonize country-level capacity development activities in the areas of education policy formulation, planning and management of education systems. This review, therefore, is a stepping stone for strengthening UNESCO's support to national capacity development efforts, in fulfilling its mandate as the lead co-ordinator for EFA and as a member of the better-harmonized international development community.

The review is mainly based on the survey results collected since April 2007 through a structured questionnaire addressed to the Headquarter Divisions, Institutes/Centres, Regional Bureaux for Education and other Field Offices. A total of 66 responses were received, describing a diversity of programmes and networks active at national, sub-regional, regional and inter-regional levels. The responses received were analysed separately –those received from the Field Offices in four regions (Africa, Arab States, Asia and the Pacific, and Latin America and the Caribbean) – and those received from the Headquarters and Institutes/Centres, resulting in five analytical reports. In order to enrich the analyses of the responses and the regional analytical reports, a short literature review and desk study were carried out. They provide a context and rationale for UNESCO's current thinking and future orientation to capacity development in the education sector.

Main findings

The questionnaire responses and regional reports suggest that the majority of capacity development programmes implemented by UNESCO HQ, Field Offices and specialized Institutes focus on policy and technical issues in the achievement of EFA goals, such as planning, data gathering and analysis, indicator development, curriculum development and teacher training policy. Addressing the operational or 'process' side of achieving EFA goals (e.g., strengthening national governments capacities to independently appraise their own organizational or institutional capacity gaps, generate modalities for filling those gaps and procure additional financial or human resources, etc.) appeared less frequently as explicit goals of capacity development.

Programme initiation: The majority of programmes are initiated by UNESCO or its specialized Institutes, either through the initiative of the Director-General or staff members of UNESCO. However, this statement

should be qualified in the sense that programmes are often initiated on the basis of needs identified through education sector reports, programme evaluations, technical missions and consultations with national partners, particularly the Ministries of Education, departments for planning or non-formal education, national institutes for statistics and, in certain cases, prominent education actors in civil society. Modalities for identifying capacity constraints and/or gaps include: data and information provided by the Ministries of Education; dialogue with multiple actors to research and analyse existing country conditions, programmes, capacities and materials; previous education research; and rapid assessment and response exercises.

Modalities of intervention: The most frequently mentioned modality for capacity development was training, closely followed by advisory support and technical assistance to policy development. Other modalities include diagnostic and feasibility studies, the provision of technology and equipment, South-South cooperation through network building and communities of practice, the convening of meetings and conventions, awareness building of normative texts, action research, and the development of web-based resources. The questionnaire responses reinforce the idea that UNESCO employs diverse modalities to address different dimensions of capacity development within national education systems.

UNESCO's roles: On the whole, UNESCO resource investment is best expressed in terms of staff time and expertise invested during different stages of the programme cycle. The majority of questionnaire responses indicate that UNESCO, including its Institutes and Field Offices, play a very hands-on role from the inception of capacity development programmes throughout the implementation stages, regardless of how the idea for the programme came about. During the programme conception and launch stages, tasks for UNESCO staff can range from advocacy and advisory support to the development of programme frameworks, facilitating consultations and negotiation with the main beneficiaries of the education programmes, fundraising and creating synergies and alliances with local and international development partners, technical inputs to building of the training programme, identification and provision of expertise for training activities, regional network facilitation or development, or even fundraising and liaising between different partners.

Outputs and results achieved: Some of the immediate outputs reported through the questionnaire include:

- The elaboration and dissemination of policy and management tools (including policy papers and special studies on key EFA issues
- The elaboration of national EFA action plans
- Gathering of up-to-date education statistics and comparative methods of monitoring learning achievement (including measurement tools, guides, manuals, training materials)
- Elaboration of teaching and learning materials
- Elaboration of curriculum resources and teacher education tools (including resource packs/teaching aids) and the elaboration of training programmes, resources and learning materials.

All of these immediate outputs feed into organizational and institutional environments where long-term impact might also be suggested by the introduction of laws, reforms or new strategies to expand education provision for different population groups, to improve the working conditions and status of teachers, and to create new departments or structures within national Ministries.

Good practices: The literature review, questionnaire responses and analytical reports pointed to the following as contributing elements for good practice: national leadership; high government commitment and strong political will to implement the programme; appointing a qualified national coordinator to ensure day-to-day operations; participatory assessments and decision-making mechanisms with beneficiary groups; having a real understanding of, and respect for, local customs and constraints, along with the physical presence of stakeholders from the start of the process; appropriate technology transfer; good teamwork and teambuilding, and drawing on different partners' experience in the design and implementation of programmes.

Lessons learned: From the survey responses one can see that UNESCO's use of the term 'capacity development' lacks consistency. Although identified as one of the Organization's five core functions, the term was neither defined in the Organization's medium term strategies (for 2002–2007 and 2008–2013), nor has a standard definition been drawn up. Variations in perceptions and use of the term within the questionnaire responses and analytical reports reinforce the idea that, while the mandate and experience of UNESCO specialized institutes, such as IIEP and UIS, have helped them generate clarity and build up a core body of expertise

in specific areas of capacity development, UNESCO as a whole (the ensemble of HQ, Institutes, Field Offices) lack coherence in how it interprets and uses the term across programme areas. The overall impression is that the concept is used on an operation-by-operation basis and can be used to justify almost any type of programming.

In terms of programme support, the Review also notes unevenness across Headquarters, Field Offices and the specialized institutes in UNESCO's own human resource capacities to offer the technical expertise necessary for effective capacity development in Member States, particularly with regard to experience in change management and organizational development as well as challenges related to planning interventions, financing, monitoring and the communication of UNESCO's role.

What also becomes apparent is that UNESCO's budget and/or partner funding is not always commensurate with the capacity development needs identified in the assessments. A major challenge for Regional and Field Offices is to find extra-budgetary funding to turn commitments into concrete action – especially with regard to the cost of experts, recurrent costs/supplies, the cost of training courses and tools, and the organization of national, regional and international meetings and field missions – all of which are essential to reinforcing capacities.

Some survey responses indicate an important role played by civil society and the private sector both in terms of human resources and financial contributions – especially in non-formal education programmes targeting disadvantaged population groups, or in programmes focussing on specific modes of learning and training such as distance education and the use of information and communication technologies. The broader potential of these actors as implementation partners needs to be explored further. However, these actors rarely make requests to UNESCO for direct capacity development support to their own organizations. It may therefore be necessary for UNESCO to expand its consultation and assessment process to identify suitable implementation partners, to encourage them to express their capacity development needs and to effectively carry out their roles.

Next steps: Given the Organization's own resource constraints, better results could be obtained from capacity development interventions if UNESCO clarified its conceptual and operational framework for capacity development in the education sector and identified what the Organization

can offer within the international development community. In certain cases, the Organization may play a more productive role as a facilitator of change management processes, rather than trying to act as implementer of services itself. Moreover, UNESCO is well-positioned to promote knowledge exchange and increase the availability of expertise for capacity development through South-South Cooperation.

UNESCO and its Institutes already play a major and respected role in developing the capacities of education institutions and actors in the formal and non-formal sectors in such areas as education planning, data gathering and assessment, policy-related research, curriculum development and teacher education policy, at regional level and through regional and inter-regional networks. In the area of advocacy, due to its status and mandate as an inter-governmental organization, UNESCO can dialogue directly with governments and other education stakeholders. This position allows the Organization to work directly with national governments and bring together diverse education actors and stakeholders towards raising political and social awareness of the importance of capacity development in the context of education sector reforms.

This review finds that UNESCO now needs to: a) clarify what it means by capacity development; b) prioritize and consolidate the capacity development focus in its thematic strategies; c) develop a long-term action plan for institutionalizing UNESCO's focus and approach, including agreement on concepts, objectives, processes, strategic partners and more efficient monitoring mechanisms; and d) communicate this approach widely, so that the Organization comes to be seen from the outside as one organization instead of as a sum of offices and Institutes weakly interrelated or even competing among themselves.

Aligning UNESCO operations at country and regional levels with good practice principles for capacity development in education is a demanding task requiring time and resources. However, UNESCO should use its position as an inter-governmental organization to leverage more effectively the experiences, funding and human resources already available through its own institutions and networks and through UN country assistance frameworks.

APPENDIX B.
Capacity development in educational planning and management for achieving EFA

Executive Summary

(A UNESCO Strategy Paper, UNESCO Education Sector)

Introduction

UNESCO recognizes capacity development as a fundamental action without which countries will not achieve their development goals. Without capacity, there is no development. However, activities by UNESCO and other international agencies have not always led to the expected impact on capacity and have at times failed to lead to sustainable change in developing countries. There is a need to rethink approaches, also within UNESCO.

Against this background, UNESCO proposes a strategy paper on "capacity development for achieving EFA". The focus is on educational planning and management because stronger capacities in these areas may have important spill-over effects on the system as a whole. The strategy paper starts from the conviction that sustainable capacity development only succeeds when there is national ownership and when international efforts fit within national strategies.

The strategy paper is based on a wide range of studies so that its findings are supported by a profound knowledge of the realities on the ground. The paper takes into account the opinions of various actors, within and outside UNESCO.

Capacity development: concepts and definitions

The debate on capacity development is complex; there is an international consensus on several points. This consensus recognizes the need to develop existing capacity rather than to build from an imaginary scratch and emphasizes the role played by the state and by effective public

institutions. Capacity development strategies must pay attention to four different levels in order to be effective: the capacities of the individual, the effectiveness of the organization, the norms and practices which rule public management and the political, social and economic context. They also must consider the supply of capacities as well as the demand for capacities by those inside and outside an organization. Finally, it should not be forgotten that the capacity development process has intrinsic values of ownership and participation.

UNESCO proposes as an operational definition of capacity development:

> Any activity which aims explicitly at strengthening a Member State so that the Member State can better achieve its development objectives by having a positive and sustainable impact on any of the following: individual officers with the necessary capacities and incentives, organizations which have a clear mandate and are effectively run, a supportive public service, and a motivating, stable and structured context, without having negative effects on any of these levels.

This definition has different implications. Firstly, capacity development is a complex process, on which a single actor has no control. This points to the need for collaboration between actors or for the integration of all capacity development efforts within a common strategy. Secondly, capacity development is a long-term change process which demands a willingness to change. The creation of such willingness may need to form integral part of a programme. Thirdly, differences in contexts make it crucial to adapt interventions to each specific situation. Such adaptation can be done in close collaboration with national partners and is in itself a form of capacity development.

An analysis of capacity development processes

At the individual level

Individual capacity levels differ widely between and within countries: in some cases, planning departments have sufficient competent and committed staff who contribute effectively; in others, there are enough trained people, but they are inefficiently used and incentives are missing to engender commitment; elsewhere, there is a significant lack of skilled staff. Training needs are diversifying because of governance reforms. During such moments of change, training can facilitate the change process

and lead it into the desired direction. Because of trends towards decentralization, staff in regional and district offices need access to well developed and integrated training programmes, ideally offered by national centres.

Beyond the issues of skills levels and training needs stand other questions. Firstly, while many officers have useful backgrounds in teaching, they do not have the required profile to perform their planning tasks with competence. One reason may be an insufficient number of well-qualified candidates; a deeper cause lies in the lack of clarity about the profiles and a lack of recognition of educational planning and management as a specific professional field. Secondly, the rapid loss of staff is in certain cases a cause of the lack of skills. In such a scenario, training has to be part of a wider set of strategies, which aim at changing the utilization of staff in an office.

These findings have several strategic implications. Training is a necessary part of a capacity development strategy, but as an isolated intervention its chance of leading to organizational improvement may be limited in certain contexts. Training strategies and programmes need to be adapted to the national context; they therefore need to be demand- rather than supply-driven. Because of the diversity in contexts, those who supply training should offer a diversity of courses and programmes.

In many countries, women form a small minority in educational planning and management departments. At the same time, capacity development in this field has paid little attention to the issue of gender.

Technical assistance of the resident expatriate – counterpart model has had little success in transmitting skills and as a rule has failed to change organizational cultures. But other technical assistance models have been much more successful, when they are characterized for instance by strong national ownership, a flexible and responsive design rather than any standard offer and greater appreciation of national expertise.

At the organizational level

Staff effectiveness depends not only on skills levels, but on the functioning of the organizations within which individuals work. A complex set of interventions can lead to organizational change. One fundamental constraint is the weakness in shared vision among all staff, especially if combined with a sense of powerlessness. Creating a common vision about the role and responsibilities of the organization is therefore a priority.

At times, the absence of vision is reflected in the lack of a normative framework which explains in a structured fashion the roles of different units and members of staff. This can lead to chaotic situations. The development of these frameworks can lead to a strategic reflection on the role of the ministry, each unit and each staff member. They also help regularize the recruitment, nomination and promotion processes. However, purely structural changes have not always led to improvement in performance.

Issues of monitoring and evaluation are of great importance. Their possible lack of linkage with performance and promotion may have detrimental effects on the functioning of the educational administration. In many countries, reforms are underway to make the evaluation process more transparent and output-oriented, linking the work of the individual staff member to the ministry's mandate and roles. Monitoring and evaluation tend to have a positive impact on the organization, when performed in a supportive atmosphere: the support received from superiors as part of an evaluation is a strong source of motivation.

Where officers feel a sense of accountability, organizations tend to function better. Efforts to strengthen accountability however may be counterproductive if officers feel isolated and unsupported. Unfortunately, few ministries have developed a genuine staff development program neither do they incite their staff members to take personal initiatives in this regard. De-professionalization and de-motivation of the civil service is a real risk, if strengthening of external accountability is not accompanied by efforts towards professional development. The creation of professional associations can be part of such a staff development approach.

While financial incentives for public servants may be weak in many countries, several non-financial incentives can play a strong motivating role: a sense of mission, supportive staff development, participation in decision-making. These may demand a change in the organizational culture of the ministry, which needs to come from within and cannot be imposed from outside.

Capacity development within public management

The characteristics of the public service and of the civil service in particular have a widespread impact on the functioning of ministries of education and on the success of capacity development programmes. The public service can be a tool for national development but in some contexts it has

become a source of patronage and an employment-creation mechanism. Many public management reforms have so far had little impact on ministries of education, partly because some of their precepts are not adapted to the specific needs of administrations in developing countries. More successful reforms have included a focus on strengthening capacities.

Public management reforms are very difficult to implement. It may be useful to involve the civil servants and their trade associations more into the reform and it may be necessary to guarantee that the reform develops the professional capacities of public servants.

The impact of external assistance on capacity development

There is much external support to capacity development, but its impact remains limited, where there is little national ownership. In addition, external support may take the form of inappropriately implemented technical assistance and one-off training courses. Conditionalities and monitoring & evaluation approaches, used by external partners, can be counter-productive because they lead staff to focus on short-term outputs rather than long-term impact. International agencies have to strengthen their own expertise in order to be able to design and implement more successful capacity development programmes.

UNESCO strategies

Having recalled that sustainable capacity development requires complex interventions at the institutional, organizational and individual levels, the document highlights some foundational principles:

- national leadership and ownership should be the touchstone of any intervention;
- strategies must be context-relevant and context-specific
- they should embrace an integrated set of complementary interventions, though implementation may need to proceed in steps;
- partners should commit to a long-term investment in capacity development, while working towards some short-term achievements; and
- outside intervention should be conditional on an impact assessment on national capacities at various levels.

Concerning strategies aimed at developing a **supportive context**, UNESCO will continue promoting political leadership on EFA, for instance through support to national coalitions and national EFA monitoring reports. In addition, the paper advocates for capacity development of civil society to encourage governmental accountability as well as to foster innovative approaches. Also, UNESCO will promote the professional character of educational planning and management, especially in contexts where planners do not have the adequate technical and conceptual backgrounds, including through support to national and international associations of planners and managers.

In order to increase the **effectiveness of ministries and planning departments**, UNESCO strategies can include the following:

- support national actors who lead a process of institutional analysis as a first stage in the design of a capacity development programme;
- use and promote participatory and learning-oriented evaluation models so as to encourage a deeper involvement of beneficiaries;
- advise government on structural reforms of planning departments, as part of a comprehensive rethinking of the educational administration, while paying attention to the impact on organizational cultures;
- strengthen leadership within the educational administration by supporting inter alia the professional development of potential change leaders so that they gain in critical thinking, and initiative-taking, in addition to stronger technical skills; and
- promote inter-ministerial collaboration as a model which allows for sustainable learning and appropriate responses to local challenges.

At the **individual level**, capacity development programmes should aim at creating competent and committed educational planners and managers. In this regard, UNESCO can:

- offer technical assistance which does not substitute for the use of existing national capacities and which coaches and guides national experts for instance through regular support provided by mobile teams;
- support national and regional training and research centres, through advocating among governments for the need for such centres, through offering training and knowledge resources and by promoting networking between such centres;
- continue to diversify its offer of training programmes and models to allow individuals to access a diversified training offer as part of a

professional development package through national, regional, or international training institutions;

- further strengthen its clearing-house and knowledge-linking roles in educational planning and management, to help bridge the knowledge divide.

The paper concludes on a number of **implications for UNESCO**, including the need to:

- continue working in both normative and operational fields, as the global coordinator for EFA and as a capacity development agency;
- work on a few comprehensive capacity development programmes where the Organization has comparative and strategic advantage;
- engage with a limited number of countries on a long term to develop and implement a comprehensive capacity development programme for achieving EFA;
- strengthen its partnerships and cooperative stance because capacity development for EFA is a complex and overwhelming challenge;
- strengthen its own capacities through staff development; and
- develop long-term relations built on mutual trust where UNESCO and ministry staff are equal colleagues who plan and work together, while sharing a joint accountability for results and a common pride in their achievements.