Implementing National EFA Plans

Handbook for Decentralized Education Planning

UNESCO Bangkok
Asia and Pacific Regional Bureau for Education
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# Acronyms and Abbreviations

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<th>Acronym</th>
<th>Full Form</th>
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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<td>APEC</td>
<td>Asia-Pacific Economic Forum</td>
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<td>ASEAN</td>
<td>Association of Southeast Asian Nations</td>
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<td>CPRGS</td>
<td>Comprehensive Poverty Reduction and Growth Strategy</td>
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<td>ECCE</td>
<td>Early Childhood Care and Education</td>
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<td>EFA</td>
<td>Education for All</td>
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<td>EMIS</td>
<td>Education Management Information System</td>
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<td>ANPRO-Model</td>
<td>Analysis and Projection Model</td>
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<td>GIS</td>
<td>Geographical Information System</td>
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<td>ICT</td>
<td>Information and Communication Technology</td>
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<td>ILO</td>
<td>International Labour Organization</td>
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<td>IMF</td>
<td>International Monetary Fund</td>
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<td>IT</td>
<td>Information Technology</td>
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<td>LSE</td>
<td>Lower Secondary Education</td>
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<td>MDG</td>
<td>Millennium Development Goals</td>
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<td>MTEF</td>
<td>Medium-Term Expenditure Framework</td>
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<td>PBA</td>
<td>Programme-Based Approach</td>
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<td>SEAMEO</td>
<td>Southeast Asian Ministers of Education Organization</td>
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<td>SWAP</td>
<td>Sector-Wide Approach</td>
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<td>TBS</td>
<td>Targeted Budget Support</td>
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<td>UBE</td>
<td>Universal Basic Education</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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<tr>
<td>USE</td>
<td>Universal Secondary Education</td>
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<td>UPE</td>
<td>Universal Primary Education</td>
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<td>WHO</td>
<td>World Health Organization</td>
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Preface

The Education for All (EFA) goals adopted by the World Education Forum in Dakar, Senegal in April 2000 are at the centre of UNESCO’s education activities worldwide. The EFA goals are inspiring education reform and development strategies and plans of many countries. They are also strong guiding principles for donors. The wide-ranging efforts to achieve the EFA goals come at a time when many countries are engaged in a process of modernizing the management of public sectors. Education is the largest public sector directly concerned. This presents formidable challenges for both the national education authorities and their external partners, the donors. In many countries, the roles, functions and tasks of the principle education sector stakeholders are undergoing significant changes. Decentralization, which is a major component of the modernization of public sector management, transforms the relationship between the central level, principally the Education Ministries, and local levels. In particular, provincial education authorities are entrusted with greater new responsibilities for resource allocation and efficient utilization of human, material and financial resources. At the same time, programme-based approaches are increasingly applied in education planning and reform.

Strengthening the professional and technical knowledge of staff at central and provincial education levels is an essential condition for the successful modernization of education sector management. Capacity needs to be built that enables management staff to a) actively contribute to the shaping of the new functions and b) carry out new management tasks in the areas of planning, programme preparation, and implementation monitoring.

Over the past years, UNESCO has been a partner to many countries in the Asia and Pacific region in the preparation of national EFA plans. More recently, UNESCO has worked to support their efforts to implement the national EFA plans through decentralized education planning and to develop country-specific programme-based planning approaches. By publishing this Handbook, UNESCO intends to contribute to capacity building in modern education sector management. The Handbook promotes a common sense, easy-to-work-with and effective education planning approach, and planning tools which respond to the planning needs as perceived by countries themselves.

By sharing its experience region-wide, UNESCO hopes to lead more and more countries in the region toward applying common education planning approaches, common monitoring methods and common educational data systems. This would greatly reinforce cooperation within the region and strengthen empowered national education sector management capacity. It would enhance the chances for success of presently piloted approaches like planning within medium-term expenditure frameworks (MTEF) and sector-wide approaches to programme planning (SWAP).

The Handbook is primarily addressed to staff of the planning units within Education Ministries and in provincial level education administrations. The Handbook is also intended to be useful for the staff of international funding agencies and international experts engaged by these agencies.

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Acknowledgements

UNESCO-Bangkok is indebted to all persons who have contributed to this Handbook. First and foremost, UNESCO would like to mention the many colleagues in Ministries of Education and in provincial education administrations in countries of the region with whom UNESCO joined forces in a range of EFA planning activities. Their co-operation was integral in gaining the firsthand experience that is underlying this Handbook.

UNESCO-Bangkok would also like to thank all those who have directly contributed to the Handbook: Dr. Klaus Bahr, who conceived the Handbook and was also its principal author; Fadi Abillama and Nyan Myint who, together with Klaus Bahr, designed the Analysis and Projection (ANPRO) Model; Ta Ngoc Chau, who helped design the analytical tools; and Pernille Askerud, who provided critical professional advice and undertook the editing of the complex materials presented in the Handbook.

UNESCO-Bangkok owes special thanks to S.K. Chu, Head of the UNESCO Hanoi Office, and his EFA staff, particularly Le Thu Huong, for contributing experience from the Provincial Education Planning Pilot Project carried out in 2004 by UNESCO and the Ministry of Education in a number of provinces in Viet Nam.

The Handbook was prepared under the professional and technical coordination of Dominique Altner, Chief of the Education Policy and Reform Unit of the UNESCO Asia and Pacific Regional Bureau for Education, Bangkok.
Modernization of education sector management

Many countries are currently in a process of modernizing the management of public sectors. Education is one of the largest sectors in terms of personnel and recurrent expenditure and is also among the larger public sectors in terms of capital expenditure. Strategies and activities aimed at modernization of public sector management therefore have a significant impact on education sector management, including at decentralized levels.

Of the principle features of public sector modernization, three are directly relevant for education: decentralization, international commitments, and new forms of programme-based resource allocation to education. These trends will shape the way in which the education sector will be functioning in the future.

Decentralization aims at increasing responsibilities for efficient resource management and education quality improvements at levels below the central level. However, decentralization also calls for greater responsibilities for policy making and implementation monitoring at the central level, in particular, by the Ministry of Education.

International commitments such as Education for All, Poverty Reduction and Growth Strategies, and the Millennium Development Goals lead to new forms of partnerships between Governments and the international donor community. National authorities at central and decentralized levels assume increased responsibilities for the design and implementation of sector reform and development programmes.

New forms of programme-based approaches (PBA) to education resource allocation are being designed, tested and applied. These new forms include the introduction of a Medium-Term Expenditure Framework (MTEF), Targeted Budget Support (TBS), and a Sector-Wide Approach (SWAP), along with others. In the future, the Education Plan will inform the MTEF, which in turn will inform the annual budget; the central level and the provincial level\textsuperscript{1} education authorities will then manage the planning and resource allocation process together.

The modernization of education sector management is a challenge to both the Ministry of Education and to provincial level education authorities. Strengthening the professional and technical knowledge of staff at both levels is an essential condition for the successful modernization of education sector management. Management staff needs to be enabled to a) actively contribute to the shaping of the new functions, and b) to carry out new management tasks in the areas of planning, programme preparation, and implementation monitoring.

\textsuperscript{1} The term “provincial level” is used in this Handbook to refer to the level immediately below the central level.
Purpose of the Handbook

The purpose of this Handbook is to contribute to enabling education planning staff and decision makers in Ministries of Education and in provincial education administrations to develop the capacity needed to develop and apply consistent, sustainable education planning and implementation monitoring at both the central and provincial level. The Handbook does this by sharing the experience UNESCO gained by working with countries of the region on the preparation of national EFA plans and, in particular, on the decentralized planning capacity needed for the effective implementation of national EFA plans.

The education planning approach and the planning tool (the Analysis and Projection Model - the ANPRO-Model) presented in this Handbook are based on a planning concept and a planning tool which have been designed, tested and applied jointly by the Ministry of Education and provincial education offices of Viet Nam with technical support from UNESCO in 2003-2004. The Handbook reflects the education planning needs as perceived by national education authorities both at the central and provincial levels.

The Handbook provides technical information of an innovative kind concerning modern planning concepts and the use of modern IT-based planning tools (in particular, the ANPRO-Model). The Handbook is for persons who possess basic knowledge and experience with education statistics, sector analysis and education planning and who are familiar with Microsoft Excel. The Handbook is not intended as training or self-learning material for beginners.

The Handbook is primarily addressing staff of the planning units in the Ministry of Education and in provincial education administrations, as well as units that are directly involved in the education planning process (the unit that provides statistics, the personnel management unit, the budget and finance unit, the unit that provides education quality control, and policy units). The Handbook is also geared toward staff of other Ministries directly relevant to the education sector (i.e. Ministry of Finance, Ministry of Planning). Finally, the Handbook is also intended to be useful for the staff and international experts engaged by international funding agencies.

UNESCO’s support to modernization of national education planning

The Handbook is part of a series of activities which UNESCO has been undertaking to support countries of the East Asia and Pacific Region in their efforts to reach the Dakar EFA goals in cost-effective ways. These activities include, among others:

➢ the development of an EFA Planning Guide for Southeast and East Asia, published in 2001 (in English, and translated into Arabic, French, Indonesian, Khmer, Laotian, Vietnamese, and in summary form into Chinese);
➢ exchange of information and learning from EFA planning experience in different countries, particularly through frequent meetings of national EFA coordinators;
➢ normative work in education statistics for education planning and for plan implementation monitoring;
➢ extensive technical assistance to Education Ministries in countries across Asia for the preparation of their national EFA plans;
➢ extensive technical assistance to the Education Ministries of Viet Nam and Lao PDR for the implementation of their National EFA Plans, in particular, for the design, testing and pilot application of modern decentralized education planning approaches.
The UNESCO Asia and Pacific Regional Bureau for Education in Bangkok will continue to support countries in their efforts to implement national EFA plans through exchange of experience and technical assistance. Several technical publications based on specific country experience are planned.

An important aspect of UNESCO’s activities in this area is the effort to enable national education management staff to develop and introduce standards and procedures that are not just adopted from ‘outside’. UNESCO has made it a point to promote a broad-based understanding among national education planning staff and to design the planning approach and tools, in particular, the ANPRO-Models, to fit the diversity of local situations and capacities. This kind of cooperation requires significant effort in terms of managing time, manpower and funds. There is no shortcut to the development of sustainable modern education planning capacity.
1 Modernization of Education Sector Management

1.1 New Trends in Public Sector Management Relevant to Education

1.2 Salient Features of Modern Education Planning
1. New Trends in Public Sector Management Relevant to Education

Decentralization is an essential feature of the on-going modernization and reform of public sector management. In a growing number of countries, new approaches in public sector finance constitute yet another important reform effort.

Of the principle features of public sector modernization, three are of direct relevance to education. They will shape the way in which the education sector will be functioning in the future.

FEATURE 1: decentralization
FEATURE 2: international commitments
FEATURE 3: new forms of programme-based resource allocation to education

The measures already taken in these areas and those that will be taken in the coming years have direct implications for the management of the education sector at all levels: central, provincial, district, community.

Feature 1: Decentralization

Management functions and tasks are increasingly being shifted from the central level to other levels of administration such as provincial, district, and community levels. In education, the level immediately below the Ministry of Education is usually the level in charge of ensuring the functioning of decentralized management of all education activities (except for higher education). For the purposes of this Handbook, this level will be referred to as the PROVINCIAL LEVEL.

The provincial level also has the principal responsibility of delivering educational services and managing educational institutions. The goals and targets set in the national education plan can only be achieved through provincial level actions. This means that if the national education plan (such as the national EFA Plan) is to succeed, it has to be translated into provincial education plans and its implementation to be decentralized. The teaching-learning activities take place at the provincial level. Provincial education authorities are in charge of ensuring the
management of the different education sub-sectors and the functioning of the education institutions (the schools). The implementation of the national EFA Plan must be undertaken by transposing the national plan into the provincial context. To do so, the provinces must prepare their own provincial education plans. Goals and targets set in the national plan have to be broken down and adapted to the specific situation and needs in each province through a process of decentralized planning.

**Feature 2: International Commitments**

International commitments of governments increasingly influence national education sector strategy decisions and planning. They are of high importance in the co-operation with external donors.

Many governments are members of regional co-operation organizations such as ASEAN, APEC and SEAMEO. They are also members of international global organizations such as UN, ILO, WHO, IMF, UNESCO, World Bank, Asian Development Bank and development banks of other regions. As members of these organizations, these governments have committed to goals and targets formulated by consensus at the international level. In recent years, such consensus has developed in different areas, for example, in environment (the ‘Tokyo Protocol’), in social and economic development (MDGs and PRGS), and education EFA, UN Initiative on Girls’ Education (UNGEI), the Convention on the Rights of the Child (CRC). Goals and targets related to education are not only included in EFA strategies (as formulated in the ‘Dakar Framework 2000’), but also in other internationally-adopted strategies (MDG, PRGS); however, the emphasis on education is not the same, and not all education goals and targets are necessarily identical or are applicable across these strategies.

In the field of education, EFA, through the Dakar Framework, is informing national education strategies and plans. The notion of EFA covers four sub-sectors of education: Early Childhood Care and Education (ECCE), Primary Education, Lower Secondary Education (LSE), and Non-Formal Education (NFE). Primary and Lower Secondary Education together form a nine-year basic education cycle.

In adopting the Dakar EFA Framework, the international community (comprising all governments and all education donors) have set the following goals to be achieved by each country by 2015: expanding and improving Pre-school; achieving free Universal Primary and Lower Secondary Education of good quality; achieving gender equality; providing education and training for out-of-school youths and adult illiterates; and achieving recognized and measurable learning outcomes at all levels and for all educational activities.¹

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¹ The World Education Forum meeting of April 2000 in Dakar, Senegal adopted the ‘Dakar Framework for Action, Education for All: Meeting our Collective Commitments’ which contains the six Dakar EFA Goals which all countries have committed to implement by 2015.

² In the context of this handbook, the ECCE sub-sector is also referred to as the Pre-school sub-sector.

³ Within the EFA context, NFE comprises education for out-of-school youth of school-age and young illiterate adults.

⁴ For details on the Dakar Goals, please refer to ‘The Dakar Framework for Action’, p.8, para. 7.
For the international EFA goals to be attained in each country, they had to be translated into national EFA plans. The Dakar Framework contains these principles to be applied in the preparation of the national EFA Plans:

- to place EFA within a sustainable and well-integrated education sector development framework;
- to draw up national plans which:
  - specify reforms addressing the six EFA goals;
  - establish a sustainable financial framework;
  - are time-bound and action-oriented;
  - include mid-term performance indicators;
  - are included within the national development planning framework and process;
  - attract co-ordinated support from all development partners.

The application of these principles to the planning process means that the future development of the EFA sub-sectors must be placed within the overall education sector context. Hence, the plan for the EFA sub-sectors must be seen as an integral part of the overall education sector development strategy and the sector budget. The implementation of national EFA plans must be a component of comprehensive education development strategies and plans. In addition to the four EFA sub-sectors, the education sector comprises other sub-sectors: Upper Secondary, Professional Secondary, Teacher Pre-service and In-service Training, etc.

Decentralized (i.e. provincial) education plans must find a comprise for all education sub-sectors and integrate them within one coherent sector framework. Decisions on priorities and resource allocation should be taken within this framework. Separate sub-sector plans that are drawn up unrelated to and outside the overall framework, once adopted and implemented, will disrupt the coherence of overall sector development.

**Feature 3: New Forms of Programme-Based Resource Allocation to Education**

In a number of countries, the modernization of public sector management includes the design and testing of new approaches for the development and planning of the education sector, such as the Medium-Term Expenditure Framework (MTEF), Targeted Budget Support (TBS), and Sector-Wide Approach (SWAp).

**MTEF, MEDIUM-TERM EXPENDITURE FRAMEWORK**, refers to a programme and programme budgets which - contrary to the traditional single-year budget practice - cover a period of several years (usually three years). MTEF comprises the following features:

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5 The Dakar Framework for Action, para. 8, 16 and 17.
6 Please note that as a rule, provincial education plans do not include university level education institutions since the latter usually are under the direct responsibility of central level education authorities, e.g. the Ministry of Higher Education.
• a detailed sector development programme which identifies priorities and sets out the targets to be achieved by the end of the medium-term period;
• a detailed estimate of the personnel, material, and financial resources required to implement the programme activities;
• the annual budget allocations are dependent on the achievement of the set targets;
• at the end of each year, progress of implementation is assessed, and the MTEF is extended by one additional year so that the MTEF plan at any given time covers a medium-term period.

The MTEF approach assures the province of a foreseeable budget and allows a good measure of flexibility in the sequencing of activities and the use of resources. The MTEF allows provincial education authorities to decide on allocation priorities (e.g. to reallocate additional resources between ECCE and Primary Education), as well as the sequence of activities (what comes in the first year, what in the second year, etc.). Disbursements depend on the progress of overall programme implementation within the MTEF period and the set targets.

The design of a coherent programme is essential for the effectiveness of the MTEF programme.

In the future, central and provincial level education authorities will together manage the planning and resource allocation process. The education plan will inform the MTEF, which in turn will inform the annual budget. The annual budget will no longer be the principal resource allocation instrument. Gradually, the provincial MTEF will come to play an important role in the resource allocation process. The MTEF, in turn, will be drawn up within the framework of the provincial education plan. The MTEF is the link between the long-term provincial education plan and its implementation through annual budgets.

**TBS, TARGETED BUDGET SUPPORT**, is a means of focusing the use of resources to achieve specific objectives of the education plan. For example, improvements in accessibility and quality of primary education may be formulated as a special programme and budget. Such programming includes all related activities and budget, including teacher training, the employment of teachers, construction and equipment for schools, provision of teaching-learning materials to teachers and pupils, and other inputs. The budget allocation is made for the entire programme in a distinct budget line (or an entire budget section) earmarked for this programme.
As for MTEF, the preparation of a multi-year programme is essential for the effectiveness of the TBS.

**SWAp, SECTOR-WIDE APPROACH**, is another form of government efforts to modernize public sector management, particularly in the context of joint government-donor activities. SWAp provides a framework for government-donor co-operation aimed at increasing the cost-effectiveness of the joint use of government and donor financial resources and enhancing the result and impact of programmes implemented with joint funding.

The principal features of the SWAp concept are that:

- the government and donors together prepare and agree on a sector (or sub-sector) development programme;
- government and donors put the financial resources needed for the implementation of the program in a common funding ‘basket’;
- the implementation of the programme is the responsibility of the government, no longer that of donors.

MTEF and TBS programmes are steps towards a SWAp approach to planning. As for MTEF, the preparation of a multi-year programme is essential for the effectiveness of the SWAp process.

These new forms of planning are often referred to as a **PROGRAMME-BASED APPROACH (PBA)** to planning.

### 1.2 Salient Features of Modern Education Planning

The most important features of modern education planning relate to decentralization and PBAs.

As part of the decentralization process, the functions and tasks at the central level, i.e. of the Ministry of Education, increasingly focus on sector-wide policy making and implementation monitoring. At the same time, the Ministry is relieved of tasks related to the day-to-day functioning of educational institutions. Central level management will increasingly focus on responsibilities such as:

- formulation of education development and reform strategies and national education plans;
- monitoring of implementation of national education policies, plans and targets;
ensuring the quality education (including curriculum development, teacher training, student and teacher performance);

advising provinces on result management of education, and on cost-effective utilization of resources.

The functions and tasks of provincial education authorities also change quite significantly. Provincial education authorities have increased responsibilities in areas such as:

- resource allocation within the province, i.e. between different sectors (health, transport, education, etc.) and within the education sector between the different sub-sectors (Pre-school, Primary Education, Secondary Education, etc.);
- the negotiation of proposed provincial education budgets with public funding sources at central level (the Ministry of Finance, the Ministry of Planning, other ministries) and at the provincial level (provincial government);
- the drawing up of medium-term provincial education plans;
- setting provincial education sector priorities;
- monitoring the implementation of the provincial education plan;
- preparing MTEFs;
- preparation and implementation of targeted budget support programmes;
- implementation of large-scale programmes which the Government is undertaking in co-operation with external partners (such as Poverty Reduction and Growth Programmes, activities linked to the MDGs).

Decentralization of education sector management requires that central authorities (the Ministry of Education, etc.) and provincial education authorities apply a common approach to education planning and implementation monitoring. Such common approaches should include the planning concept, planning methodology and tools, planning terminology, resource allocation criteria, monitoring criteria and monitoring mechanisms.
A second important feature of the modernization of public sector management in education relates to the use of programme-based approaches for education planning. Typically, within a coherent framework, a programme comprises the following elements:

- an analysis of the present functioning of the sector (situation analysis, sector analysis);
- goals and targets to be reached in the future;
- assessment of the personnel, material and financial resources required to achieve the goals and targets;
- a prioritized list of activities;
- implementation management arrangements;
- implementation monitoring arrangements.

A programme can cover the entire sector or a specific sub-sector, or a particular aspect of sector development, e.g. teacher training, curriculum reform or quality improvement.

In order to render the modernization process possible and to make it sustainable, two conditions will have to be fulfilled: (a) the external partners will have to apply and operate within the education planning approach applied by the central and provincial level education authorities, and (b) the professional and technical knowledge of staff at the central and provincial level must be strengthened to allow them to fulfil their new functions and carry out their new tasks. The modernization process requires them to contribute actively to the shaping of these new functions (designing rules and guidelines), and to carry out new management tasks in the areas of planning, programme preparation, and implementation.
2 The Concept of Decentralized Education Planning

2.1 General Features
2.2 National EFA Plans and Provincial Planning
2.3 The Purposes and Principal Steps of Provincial Education Planning
2.4 Situation Analysis
2.5 Target Setting
2.6 Operational Areas
2.7 Action Programmes
2.8 Monitoring
2.9 The Provincial Education Plan Document
2 THE CONCEPT OF DECENTRALIZED EDUCATION PLANNING

2.1 General Features

Developing the functions of the Ministry of Education and of the decentralized provincial education authorities requires modern management capacity at both levels. At the central level, the Ministry of Education must acquire the skills needed to:

➢ help, advise, and strengthen the provinces in their education planning;

➢ ensure nationwide coherence and comparability of education planning and implementation monitoring by ensuring that all provinces apply the same planning approach, the same planning techniques and planning tools, use the same type of data, apply the same terminology, and apply the same priority and resource allocation criteria;

➢ ensure that the provincial education plans effectively lead to the attainment of national goals and targets;

➢ advise the Ministry of Finance and other central bodies concerned on the allocation of resources to the provinces for the implementation of the provincial education plans;

➢ advise provincial authorities in charge of the provincial budget on the allocation of financial resources for education.

The provincial education authorities need to develop and sustain modern provincial education planning and undertake modern plan implementation. The staff must acquire the skills needed to master all the steps of this process, comprising:

➢ preparing a modern provincial education plan;

➢ monitoring the implementation of the plan;

➢ updating the plan in light of the monitoring results;
translating the plan into MTEFs for the provincial education sector; and

implementing the expenditure framework through annual budgets.

Together, central level and provincial level education authorities will manage the planning and resource allocation process.

2.2 National EFA Plans and Provincial Planning

The national education plan contains all the goals and targets that apply to the country as a whole and for all education sub-sectors. The national goals and targets are national averages which summarize the diversity of provincial situations. The education situation and the likely future development of education is not the same in all provinces. Hence, some provinces may already be close to achieving the targets while other provinces still have a long way to go. The implication of this is that provincial authorities, when they prepare their education plans, need to adapt the national targets to the specific provincial situation. In most countries, the national education plan is not the sum total of all provincial plans. The national education plan is prepared first, and only then are the provincial plans prepared.

The national education plan informs the provincial plans. The national (EFA) plan provides the framework and reference for the provincial plans. The provincial education plan:

- adapts national targets to the particular provincial context;
- sets provincial priorities for targets and action programmes;
- orients provincial targets and priorities toward the attainment of national targets.

The education authorities will need to compile a comprehensive and coherent list of all goals and targets decided by the government that relate to the development of the education sector. As a rule, most of these goals and targets will already be included in the National Education Sector Plan or the EFA Plan, but some countries do not have such plans.

If this is the case, other official documents will contain the national educational goals and targets. These documents may be education laws, the education chapter in the national development plan or national poverty reduction plan, a specific programme for the improvement of the quality of education across all sub-sectors, or government decrees on norms and standards in education, etc.

Even in countries where an education sector plan or an EFA Plan exists, the government will have made decisions in the course of plan implementation which concern education goals and targets that are not yet included in the national plan. The education planner must be aware of this and always check official documents for additional education goals and targets.
2.3 The Purposes and Principal Steps of Provincial Education Planning

The process of preparing the provincial education plan has several main purposes and a number of principle steps.

Main Purposes

The main purposes of provincial education planning are:

➢ to ensure that national education policies are effectively implemented and that national goals and targets are reached;
➢ to ensure that targets are set and reached which respond to particular needs of the province;
➢ to convince Ministries, provincial education authorities, teachers and/or parents to implement education reforms;
➢ to convince the Ministry of Finance (and other public funding sources) to provide the required funds;
➢ to mobilize private sector and community contribution, particularly for education sub-sectors that are not compulsory and not free (e.g. Secondary Education and Pre-school).

The planning methodology, i.e. the planning steps and the planning tools, as well as the format and presentation of the plan are a function of these purposes and serve to fulfil them.

Principal Steps

The principal steps of provincial education planning include:

PLANNING STEP 1: Situation analysis

To obtain a comprehensive factual and analytical overview of the present situation of each sub-sector, the strengths and weaknesses of each sub-sector, and the reasons for both.

PLANNING STEP 2: Target setting

To set the targets to be reached during the planning period for:

- access to education (enrolment);
- quality (internal efficiency, exam success, pupil-teacher ratio, teaching and learning materials, fundamental school quality standards, etc.);
- management (decentralization, teacher career, efficient utilization of resources, etc.).

To assess the resource implications of the proposed targets (i.e. to estimate the required number of teachers, classrooms, other facilities,
teaching-learning materials, in-service teacher training, etc, and financial resources).

**To assess the resource gap** (i.e. the difference between resources needed and resources that are likely to be available).

**PLANNING STEP 3: Assessment of proposed target feasibility**

**To assess the feasibility** of the proposed targets in terms of:

- the resources that are likely to be available;
- management capacity needed and the capacity that is likely to be available;
- likely acceptance by the principal stakeholders.

In cases where the feasibility of the proposed targets appears to be uncertain, measures must be identified that are likely to ensure the feasibility of the targets. These measures could include:

- changing priorities;
- changing targets;
- reducing costs; and/or
- mobilizing additional resources.

**PLANNING STEP 4: Identification of outline action programmes**

**To outline implementation action programmes.**

**PLANNING STEP 5: Drawing up of financing plan**

**To prepare the financing plan** (i.e. to identify sources of funding to finance the implementation of the plan).

**PLANNING STEP 6: Identification of implementation monitoring indicators**

**To evaluate progress** made during plan implementation and to provide information for revision of objectives and targets and for updating the plan.

**PLANNING STEP 7: Formulation of the plan**

**To write the plan document** and give it adequate layout.

### 2.4 Situation Analysis

The preparation of a comprehensive overview of the present situation of the education sector is the first step in the planning process. A situation analysis reveals strengths and weaknesses and helps to identify their causes, thereby pointing to possible solutions for which targets and action programmes should be included in the plan.

The preparation of a situation analysis requires reliable data and analytical tools. The analysis and projection model (ANPRO-Model) presented in this Handbook is such a tool. An example of a situation analysis for the Primary Education sub-sector is shown in Annex I.
2.5 Target Setting

Target setting is the most critical step in the planning process. It takes the form of a DIALOGUE PROCESS that involves all major stakeholders. The major stakeholders include the Office of the Prime Minister, the Education Commission of Parliament, the Ministries, in particular the Ministry of Education and the Ministry of Planning, provincial education authorities, and representatives of teachers and parents.

The targets indicate in operational terms what needs to be reached by when to ensure that the policy goals will be attained. For example, if the policy goal is to reach Universal Primary Education by 2014, then the targets are: a) that starting in 2010, every child of age 6 shall enter Grade 1, and b) that by 2014, all pupils who have entered Grade 1 shall have the possibility to complete the full primary cycle.

Setting realistic targets and priorities requires a thorough understanding of how the education sub-sectors function at present and, in particular, how resources are used. It also requires a clear understanding of what is the most likely resource availability during the plan period, and how one can improve the cost-efficiency of the resources used.

Targets must fulfil two conditions:

- the targets must respect the policy goals set by the government (policy decision makers), and
- the targets must be feasible in terms of human, material, and financial resources, as well as in terms of implementation management capacity.

A target that does not have the support of the decision makers and other major stakeholders is not likely to be reached. Similarly, a target for which the required resources are not available cannot be reached. The decision of which targets to include in the education plan must be the result of an extensive dialogue process between the policy level and the technical planning level.

The dialogue is an iterative process in which:

- first: the provincial educational authorities identify targets that closely reflect the policy goals – these are what above are called the **proposed targets**;
- second: the education planners assess the resources needed to attain these proposed targets; and
- third: the feasibility of the initial targets is discussed between the education planners and the stakeholders (in particular, the decision-makers) in light of information regarding the assessed resource needs. If the dialogue leads to the conclusion that one or more of the resources needed will not become available to the extent and at the time at which they are needed, the initially proposed targets must be adjusted.
The process is repeated until targets have been identified that are considered to be feasible in terms of resources and are acceptable at policy level.

The more the dialogue is based on reliable analysis and projection information, and the more the stakeholders have the opportunity to participate in the dialogue, the higher the chances that the targets adopted will be effectively attained.

The analysis and projection information required by the target-setting process is greatly facilitated by the availability of detailed information predicting the possible outcomes of a given target. The ANPRO-Model presented in this Handbook is designed to provide this kind of information.

The process of target setting is central to the modernization of education sector management. It builds the consensus that is required to achieve reform and development of education.

### 2.6 Operational Areas

The planning process, the preparation of the plan document and the plan document itself can be structured around three operational areas:

- **ACCESS**
- **QUALITY**
- **MANAGEMENT**

Each operational area brings together the actions that have essential features in common in terms of goals, technical characteristics, organizational aspects, principal actors and regulatory framework. Each operational area requires its specific implementation approach.

ACCESS covers all actions required in order to attain those targets which are directly aimed at ensuring that every child of school age is enrolled in school and has the possibility of completing the full education cycle. The operational area ACCESS comprises actions needed to ensure that every child enrolled in the first grade of the cycle stays in school for the entire primary cycle. The actions include construction of schools, provision of teachers, provision of teaching and learning materials, and particular provisions for specific population groups such as ethnic minority groups.

QUALITY comprises all actions needed to attain those targets that are specifically aimed at improving the quality of education. These actions concern curriculum development, teaching-learning materials, teacher training, student assessment, and special actions for specific population groups, etc.

MANAGEMENT concerns actions that are specifically aimed at improving the management of education at all levels. This includes planning, monitoring, and evaluation of resource utilization, information-based decision making, financial planning, etc.
2.7 Action Programmes

The provincial plan outlines action programmes for the achievement of major goals; for example, an action programme for in-service training, an action programme for the application of fundamental school quality level standards, an action programme for curriculum reform etc.

Action programmes identify and spell out what shall be undertaken, how much of it, by when, by whom, and how. They specify verifiable implementation indicators. They indicate the overall magnitude of the resources required (teachers, material, and financial resources, etc.).

An Example of Action Programmes is show in Annex II.

2.8 Monitoring

A continuous planning process is another key feature of modern sector management. In the course of plan implementation, targets change. Some targets may be reached faster than foreseen while others may take longer to achieve. Assumptions also change (for example, assumptions concerning salary scale, construction unit cost, school-age population, etc.). At regular intervals (every year if possible), the plan has to be adjusted to take these developments into account.

Monitoring the implementation of the plan provides the information required to update the plan. To enable monitoring to be carried out consistently throughout the plan implementation period, the plan must contain indicators against which the implementation progress can be measured.

Regular updating of the plan based on information produced by monitoring will result in a continuous planning process and what is in fact a ‘rolling plan’.

Monitoring information can be provided with the help of the ANPRO-Model presented in this Handbook.

2.9 The Provincial Education Plan Document

The results of the various planning steps provide the inputs for the actual provincial education plan document. The plan document will be formulated on the basis of the analysis, projections, assessment of resource needs and assessment of feasibility, all of which have been made at the different planning steps. A possible outline of a medium-term provincial education plan is shown on the following pages.
OUTLINE OF A MEDIUM-TERM PROVINCIAL EDUCATION PLAN

INTRODUCTION
i Coverage of the Plan (pre-school, primary, secondary, professional-technical secondary, teacher training, etc.; public, non-public).
ii Relationship between the provincial plan and the national plan (national goals and targets).

EXECUTIVE SUMMARY
Short summary of:

i Socio-economic achievements, present situation and foreseen future development of the province.
ii Education sector achievements, present situation (strength, issues/problems, possible responses).
iii Education goals and targets of the province for plan period.
iv Implementation (in general, and for special programmes such as teacher training, poverty reduction and growth programme, targeted budget support programs etc.).

PART I: THE CURRENT SITUATION SINCE 2000

CHAPTER 1: Provincial Socio-Economic Context Relevant to Education
i population (rural/urban, migration, ethnic groups, education achievement levels);
ii economic sectors.

CHAPTER 2: Performance of the Education Sector Since 2000
2.1 Performance of the education sector as a whole
Past development concerning: enrollment, gender, disadvantaged groups, community support, costs, financing, literacy levels, quality, external efficiency, relations with/support from Education Ministry, external donors.

2.2 Performance of each education sub-sector since 2000
i past development;
ii present strengths and reasons for them;
iii present issues/problems and their causes.

PART II: THE WAY FORWARD: Provincial Education Sector Development

CHAPTER 3: Challenges for the Plan Period
Issues that must be addressed during the Plan period by sub-sector.

CHAPTER 4: Targets
4.1 Thrust of the Plan
In terms of major goals and strategies for the development of education in the province during the Plan period.

4.2 National targets
Targets contained in the National EFA Plan and in other government documents, relevant to the province, i.e. national targets which have to be translated into provincial targets for the education plan of the province.
4.3 Specific provincial targets
Targets that are essential for the province but which are not among the national target.

CHAPTER 5: Action Programmes
An outline of major programmes to be carried out during the Plan period in order to reach the goals and targets.

5.1 Sector-wide programmes
5.2 Programmes for each sub-sector

CHAPTER 6: Costs and Financing of the Education Plan

6.1 Costs of implementing the Plan
Summary overview of the cost estimates.

6.2 Financing the Plan
i identification of funding gaps;
ii identification of ways to close the funding gap;
iii overview of the sources of funding.

CHAPTER 7: Implementation of the Education Plan

7.1 Management of plan implementation at the provincial level
7.2 Support needed from national institutions (Education Ministry, etc.)
7.3 Revisions to regulatory framework at provincial and national level
7.4 Integration of external (international) programmes and projects
7.5 Implementation indicators

PART III: ANNEXES

Annex I: List of goals and targets, with indication of their source
Annex II: The provincial Analysis and Projection (ANPRO) Model
3 The Analysis and Projection Model (ANPRO-Model)

3.1 General Features

3.2 Main Technical Features of the ANPRO-Model
3.1 General Features

Modern education planning is data-based; it simply cannot be done without the availability of data. It requires analytical and projected information. Information is required throughout the planning process. It is essential for the situation analysis (planning step 1), for the target setting process (planning steps 2, 3, 5, 6), for the formulation of action programmes (planning step 4), for implementation monitoring (planning step 7), and for the formulation of the education plan (planning step 8).

In order to produce analysis data and make projections that are integral to the planning process, the planner needs a data management tool. The planning concept presented in this Handbook includes such a planning tool in the form of an analysis and projection model, the ANPRO-Model.

The approach used in this model was originally developed as a tool for EFA planning that was applied by several countries in the region toward the design of national EFA Plans. A particularly extensive application of this model approach was made in Viet Nam, where it was used for the preparation of the National EFA Action Plan 2003-2015. After the national plan was approved by the Prime Minister and became the Vietnamese Government’s official education policy and strategy framework, Viet Nam used the model approach to design, test and apply a decentralized provincial education planning approach. This approach went beyond the four EFA sub-sectors to include all education sub-sectors under decentralized provincial management authority, starting with pre-school, primary, all of secondary, teacher training, and non-formal education. This wealth of experience, together with a range of other country experiences in the region, is now reflected in this Handbook and, in particular, in the ANPRO-Model.

1 The planning concept in this Handbook is based on the concept contained in the EFA Planning Guide – Southeast and East Asia published by UNESCO, Principal Regional Office, Bangkok in 2001. The concept and the tools outlined within have been further developed for capacity building in decentralized education planning.

2 The EFA planning approach and the ANPRO-Model, however, have a much longer history. The origin of the Model was designed and applied in the late 1980s. Over the years, it has been applied in many countries in different regions of the world, each time as a country-specific adaptation. The ANPRO-Model embodies the accumulative experience of all these country-specific models.

3 The provincial planning concept does not include university level institutions as these usually are under the direct responsibility of central authorities, e.g. the Ministry of Higher Education.
Other models exist. Many of these, however, are not comprehensive models. Typically, they contain analysis and projections for only a particular sub-sector or a particular programme or project (e.g. gender promotion, curriculum development, a programme for improving education quality, etc.). Comprehensive and coherent education sector planning models are still the exception.

There are also Education Management Information System (EMIS) models. These models deal with statistical information of the past and present, but EMIS models are not planning and projection models; however, EMIS models provide indispensable and essential data inputs to education planning.

There are also other genuine planning models that look different from the ANPRO-Model. However, whatever the differences in layout and country specificity, the very nature of the education sector, and thus of education planning, inevitably leads to the same kind of model approaches.

All planning models must serve the same information needs and what is basically the same planning approach in all countries worldwide. The advantage of the approach in this Handbook is the fact that both the approach and the Model are based on recent experience in the region. It is the result of a largely nationally-driven process of decentralized, provincial education planning; hence, it responds to nationally-perceived planning needs.

The ANPRO-Model can be used for planning for the entire education sector or for any one of the education sub-sectors. Similarly, it can be applied to the preparation of a national plan as well as for the preparation of provincial plans.

The ANPRO-Model is designed to provide information that is needed to accomplish the planning process. The Model provides essential analytical and projection data which are required in the course of the planning process and also during plan implementation. The data produced by the ANPRO-Model are needed for:

- analysis of how the education sub-sectors function at present;
- identification of possibilities for improving the functioning of the sub-sectors through different (more cost-efficient) utilization of resources;
- projections of likely future developments of major components of the sub-sectors;
- projections of the resources needed to attain the goals and targets;
- assessment of the feasibility of these goals and targets in terms of human, material and financial resources;
- the setting of implementation priorities;
- the setting of indicators for monitoring plan implementation.
Specific analytical tools that are linked to the Model allow the user to check the consistency and validity of the baseline data, of the projection assumptions, and of the targets. Similarly, data can easily be extracted and presented in convenient ways for inclusion in official speeches, reports, research studies, etc. (for details, see Handbook Sections 6 and 7).

The ANPRO-Model is designed in Excel and is simple to use. The ANPRO-Model is not a generic model; instead, it is a template that can easily be adapted to specific country situations.

The ANPRO-Model uses existing data; therefore, it does not require expensive and complex new data collection activities.

The ANPRO-Model is an instant tool for dialogue between stakeholders at the provincial level and also between provincial education authorities and central authorities on issues of future provincial education development. More specifically, the Model may introduce dialogue regarding priorities and targets, resource gaps and the optimization of resources, and/or the functioning of the individual sub-sectors.

There are two types of users of the ANPRO-Model: (1) the education planners who work with the model and produce the analysis and projection information needed by (2) the decision makers. The knowledge of the planners and the decision makers complements each other and must be shared in order to work together efficiently.

Those working with the ANPRO-Model must have a good working knowledge of Microsoft Excel. They should also be familiar with modern education planning techniques and terminology. Moreover, it is essential to have experience and a good understanding of the functioning of the education sub-sectors in their province and in the country as a whole.

The decision makers who use the information produced by the Model are those who are responsible for the preparation of education policy decisions. They are in charge of determining plan targets and they make decisions that influence the implementation of the plan. The decision makers use the analysis and projection information produced by the Model, but they do not need to know themselves how to work with it.

3.2 Main Technical Features of the ANPRO-Model

The ANPRO-Model comprises six specific sub-sector models covering the entire range of provincial education sub-sectors:

- **SUB-SECTOR MODEL 1** Pre-school (ECCE) sub-sector (ages 3 to 5);
- **SUB-SECTOR MODEL 2** Primary Education sub-sector;
- **SUB-SECTOR MODEL 3** Secondary Education sub-sector;
The sub-sector models are interlinked, but each of them can also be used separately. For example, the number of new entrants into Secondary Education (Grade 7) is automatically taken from the Primary Education sub-sector Model (Grade 6).

Each of the sub-sector models comprises four sub-models:

- **PUPIL sub-model** for intake, enrolment, internal efficiency, output;
- **TEACHER sub-model** for total number of teachers, recruitment needed (by level and by type) and classes and schools;
- **RECURRENT EXPENDITURE sub-model** for personnel, teaching-learning materials, in-service teacher training, a range of special activities and programmes (such as curriculum development, programmes for special target groups, etc.);
- **CAPITAL EXPENDITURE sub-model** for construction, equipment, major repairs.

For Sub-sector Model 1 (Pre-school), Sub-sector Model 2 (Primary Education), and Sub-sector Model 3 (Secondary Education), pupil projections are made separately for public and private schools.

A separate sheet, Sheet 12: Gender Scenario, further breaks down the Model according to gender for Pre-school, Primary and Secondary Education.

ANNEX III contains a printout of essential parts of the ANPRO-Model comprising the following Model Sheets:

- Sheet 1: Title of the Model
- Sheet 2: Table of Contents of the Model
- Sheet 3: Summary of All Principal Targets
- Sheet 4: Summary of Expenditure Projections
- Sheet 6: Primary Education Sub-sector Model

A working version of the complete Model is provided on the CD-ROM included with the Handbook.
The ANPRO-Model Excel file comprises 12 Sheets as listed below:

<table>
<thead>
<tr>
<th>Name of the sheet</th>
<th>Principal information contained in the Sheets</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHEET 1: Title</td>
<td>Cover Page</td>
</tr>
<tr>
<td>SHEET 2: Contents</td>
<td>Table of Contents of the Model (with hyperlinks to each of the sub-sector models)</td>
</tr>
<tr>
<td>SHEET 3: Targets</td>
<td>Summary of the Principal Provincial Targets</td>
</tr>
<tr>
<td>SHEET 4: Exp Summ</td>
<td>Summary of expenditures from the sub-sector models</td>
</tr>
<tr>
<td>SHEET 5: Preschool</td>
<td>Analysis and projection of the Pre-school Education sub-sector: enrolment, internal efficiency, teachers, financial resource requirements, etc.</td>
</tr>
<tr>
<td>SHEET 6: Primary</td>
<td>Analysis and projection of the Primary Education sub-sector: enrolment, internal efficiency, teachers, financial resource requirements, etc. Enrolment projection is done separately for public and private school systems, while teacher and other resource requirements are projected for public schools only.</td>
</tr>
<tr>
<td>SHEET 7: Secondary</td>
<td>Analysis and projection of Secondary sub-sector: enrolment, internal efficiency, teachers, financial resource requirements etc. Enrolment projection is done separately for public and private school systems, while teacher and other resource requirements are projected for public schools only.</td>
</tr>
<tr>
<td>SHEET 8: TT</td>
<td>Projection of the Pre-Service Teacher Training sub-sector: enrolment and graduates, recurrent and capital expenditure.</td>
</tr>
<tr>
<td>SHEET 9: In-SceTrg</td>
<td>Summary of all In-Service Teacher Training projections contained in Sheets 5, 6, and 7.</td>
</tr>
<tr>
<td>SHEET 10: Prof</td>
<td>Projection of the Technical-Vocational Secondary sub-sector: enrolment and graduates, recurrent and capital expenditure.</td>
</tr>
<tr>
<td>MODEL SHEET 11: NFE</td>
<td>Projection of Non-Formal Education sub-sector activities: 1) Primary and Secondary (Grades 7 to 9 equivalency programmes; 2) literacy programmes for young adults.</td>
</tr>
<tr>
<td>SHEET 12: Girls</td>
<td>Enrolment projection of formal general education (Pre-school, Primary and Secondary) for girls.</td>
</tr>
</tbody>
</table>
The following six figures illustrate the main components and the structure of each of the six sub-sector models of the **ANPRO-Model**:

**Figure 1. Sub-Sector Model 1: Pre-School (ECCE)**

**Figure 2. Sub-Sector Model 2: Primary Education**
Figure 3. Sub-Sector Model 3: Secondary Education

Structure of Secondary Education Sub-Sector Model

- PRIMARY GRADUATES (SUCCESSFUL COMPLETERS)
- TRANSITION RATE PRIMARY ➔ SECONDARY
- ENROLMENT BY GRADE & GRADUATES (Grades 7 to 12 & G.12 successful completers)
- PUPIL / CLASS RATIO TEACHER / CLASS RATIO
- TEACHERS (Standard and Non-Standard)
- INTERNAL EFFICIENCY (Promotion, Repetition and Drop-out rates)
- Orientation to: Professional Sec. Teacher Training
- NON-TEACHING STAFF AND PRINCIPALS PER SCHOOL
- PUPIL / CLASS RATIO TEACHER / CLASS RATIO
- TEACHERS (Standard and Non-Standard)
- INTERNAL EFFICIENCY (Promotion, Repetition and Drop-out rates)
- Orientation to: Professional Sec. Teacher Training
- NON-TEACHING STAFF AND SCHOOL PRINCIPALS
- Capital Expenditure
  - CLASSROOM CONSTRUCTION & REPAIR
  - OTHERfacilities (library, computers, etc...)

Recurrent Expenditure
- SALARIES & ALLOWANCES
- PUPIL & SCHOOL RELATED EXP. (school utilities, textbooks, teacher training/workshop...)
- SPECIAL PROGRAMMES EXPENDITURE

Figure 4. Sub-Sector Model 4: Teacher-Training

Structure of Teacher-Training Sub-Sector Model

Teacher Training Schools and Colleges for:
- PRE-SCHOOL & PRIMARY (9+3 & 12+2)
- SECONDARY (12+3)

- INTAKE RATE & INTAKE CAPACITY IN THE PROVINCE + Orientation from Secondary (Grades 9 and 12)
- Internal Efficiency (Grade Progression Rate)
- ENROLMENT BY GRADE & GRADUATES (Year-1 to Year-2/3)

Recurrent Expenditure
- AVERAGE RECURRENT EXPENDITURE PER PUPIL BY GRADE

Capital Expenditure
- AVERAGE CAPITAL EXPENDITURE PER PUPIL

TOTAL EDUCATION EXPENDITURE
3: The Analysis and Projection Model

**Figure 5. Sub-Sector Model 5: Professional Secondary Education**

Structure of Professional Secondary Education Sub-Sector Model

- **SECONDARY GRADE 9 GRADUATES**
  - Orientation from Secondary Sub-Sector Model
  - Short Courses (<1 year; Enrolment & Growth)

- **SECONDARY GRADE 12 GRADUATES**
  - Access Rate of Secondary Grade 12 Graduates
  - Enrollment by Grade & Graduates
    - Sec. Gr. 9: Year-1, Year-2, Year-3
    - Sec. Gr. 12: Year-1, Year-2 (and optional Year-3)

- Recurrent Expenditure
  - Average Recurrent Expenditure per Pupil by Grade
  - Income from School Products and Services

- Capital Expenditure
  - Average Capital Expenditure per Pupil

- Total Education Expenditure

**Figure 6. Sub-Sector Model 6: Non-Formal Education**

Structure of NFE Sub-Sector Model

- **PRIMARY DROP-OUTS (Age 6-11)**
- **SECONDARY (Gr.7-9) DROP-OUTS (Age 12-14)**
- **ADULT LITERACY PROGRAM (Age 15-34)**

- Intake Rate of Respective Programme in the Province
- Number of Participants in Each Programme

- Recurrent Expenditure
  - Average Recurrent Expenditure per Participant by Programme
  - Other Programme and Administrative Support Expenditure for NFE/CE

- Capital Expenditure
  - Construction Expenditure for DLCs

- Total NFE Expenditure
4 How to Use the ANPRO-Model

4.1 Variables of the Model

4.2 How to Make Projection Scenarios

4.3 How to Make Alternative Scenarios
4.1 Variables of the Model

The ANPRO-Model uses two types of variables:

➢ **DEPENDENT VARIABLES**, also called **RESULT VARIABLES**, which are the result of calculations made by the Model. They show the results that would be obtained if the decisions set by the independent variables were to be applied.

➢ **INDEPENDENT VARIABLES**, also called **DECISION VARIABLES**, can be decided and set through a policy decision or an administrative decision. The independent variables must be entered into the ANPRO-Model from sources outside the Model. The ANPRO-Model makes use of three types of independent variables: baseline data variables, assumptions variables and target variables.

The characteristics of the independent variables are as follows:

**BASELINE DATA** are independent variables that constitute the starting point for projections. The base year is the year immediately preceding the first projection year.

**ASSUMPTIONS** are independent variables for the projection years. They concern technical components such as base salaries, construction unit costs, school age population, teacher attrition rates, etc. Their value is the result of factors independent of the decision of the planner. The planner is not free to choose their value. These values must be taken from official documents (for example: school-age population projections, the salary scale, contraction unit costs).

**ALL TARGETS** are independent variables. They are decided by provincial and national authorities. The values of the targets are entered into the Model. They are not calculated by the Model (for example: let us assume that the present scenario has a teacher/class ratio of 1.0 and that the target set by the policy makers is to reach a teacher/class ratio of 1.5 by the year 2010. The result variable will then be the number of teachers needed, both the additional number of teachers needed and the total number of teachers needed. This takes into account other factors that have a direct impact on the number of teachers needed such as pupil enrolment, pupil/class ratio, attrition rate of teachers, etc.).

Independent variables can be changed. It is possible to change only a single variable and assess the impact of this change on all result variables. Alternatively, one can change several decision variables at the same time in order to look at the impact that these combined changes have on all result variables. This makes it possible to assess the importance of each assumption and/or target or of a group of assumptions and/or targets for the functioning of the sub-sector. This kind of analysis is also called a sensitivity analysis.
Independent (or decision) variables can be changed for any year of the projection period. This allows simulating ad-hoc policy changes (by changing targets and/or assumptions) that could take place in any year during the plan period. It also allows updating of the plan and may allow the introduction of a ‘rolling plan’.

4.2 How to Make Projection Scenarios

Before starting to work with the TEMPLATE ANPRO-Model, you must
SAVE THE MODEL UNDER A NEW NAME
⇒ While working with your Model,
SAVE FREQUENTLY in order to avoid losing your work!

Proceed as follows:

1: Become familiar with the structure and the contents of the ANPRO-Model.
   ○ Refer back to Section 3 to review the general features of the Model;
   ○ Browse through the Model to obtain an overview of all 12 Sheets;
   ○ Open each Sheet to see what is contained in each.

2: Set up your own title sheet (Sheet 1, called ‘Title’).
   ○ At the centre of this Sheet, overwrite the label ‘Template ANPRO-Model’ with the name of your province;
   ○ Wherever the date appears as a label in this Sheet, change it to the appropriate date (the date on which you are creating your scenario).

3: Save the Model under a new name.
   ○ Use a name that indicates the Model name, the name of your province and the date, e.g. ‘ANPRO Model – XYZ Province (30 February 2005)’. Later in the course of your work, you should indicate each time you create another version by saving under a new name, e.g. changing the date, as in ‘ANPRO Model – XYZ Province (10 March 2005)’.

4: On the first page of the sub-sector Model Sheet, list the objectives and the targets which are to replace the ones in the TEMPLATE ANPRO-Model.

5: List independent and dependent variables.
   ○ On the second page of each sub-sector Sheet, list the independent variables (decision variables) and dependent variables (result variables).

6: Enter the baseline data.
   ○ Enter the baseline data in the appropriate tables (i.e. replace the data of the TEMPLATE Model with your own data).

Baseline data are statistical data. These data are entered in the YELLOW cells for the base year. The figures appear in BLUE.

Baseline data are independent variables that allow your planning to have a starting point. The base year is the year immediately preceding the first projection year.
It is essential that the data for the base year are consistent. If the results of Model calculations for the base year show inconsistencies, it means that some of your baseline data are not accurate. If this is the case, you should go back to the source of your baseline data and check the data; however, the principal purpose of the baseline data is to provide the starting point for your projections. Their purpose is not to correct data of the past.

7: Enter the targets.

- Enter the targets in the appropriate tables (i.e. replace the target figures of the TEMPLATE Model with those of your province).

ALL TARGETS are independent variables. The targets are the result of the target setting dialogue process (see Section 2.5). They are decided by provincial and national authorities.

Note! These targets are entered into the Model. They are not calculated by the Model.

In the Model Sheets, the targets are entered in

```
Double line-framed cells or columns
```

These figures appear in **RED**.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pupil / Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/05</td>
<td><strong>(baseline data) 18</strong></td>
</tr>
<tr>
<td>2005/06</td>
<td>20</td>
</tr>
<tr>
<td>2006/07</td>
<td>22</td>
</tr>
<tr>
<td>2007/08</td>
<td>24</td>
</tr>
<tr>
<td>2008/09</td>
<td>26</td>
</tr>
<tr>
<td>2009/10</td>
<td>28</td>
</tr>
<tr>
<td>2010/2011</td>
<td>30</td>
</tr>
</tbody>
</table>

8: Enter the assumptions.

- Enter the assumptions in the appropriate tables (i.e. replace the assumption figures of the TEMPLATE Model with those of your province).
Assumptions are independent variables that are decided outside the Model. They concern, for example, the salary scale (provided by the Finance Department of the province, as set by the government), school-age population projections (provided by the Central Statistical Office), construction unit costs and other unit costs for material inputs (such as textbooks, laboratory equipment, etc.).

In the Model Sheets, the assumptions are also entered in

(Double line-framed cells or columns)

These figures appear in RED.

9: Check the coherence of the baseline data.
   - Look at the Summary Tables at the beginning of each Sheet to see whether your baseline data entry gives coherent results. If not, go back to the source of the baseline data, re-check the figures, and enter new, correct figures into the Model.

10: Check the consistency of the targets.
   - Look at the Summary Tables at the beginning of each Sheet and at Model Sheet 3: Principle Targets to check whether the targets appear reasonable and coherent. If they do not, adjust the targets until you get a more reasonable pattern of targets. The analytical tool presented in Section 6.3 will help you to do this.

11: Check the consistency of the assumptions.
   - Look at each table that contains assumptions to check whether they are reasonable. If not, go back to the source of the assumption figures and make sure that you entered the figures correctly. The analytical tool presented in Section 6.3 will help you to do this.

12: Enter baseline data, assumptions and targets for special recurrent and capital expenditure items and for administrative support.
   - In Sheet 4: ‘ExpSumm’ (expenditure summary for all sub-sectors), enter the baseline data, the assumptions and the targets for the following tables:
     - ES.7 Recurrent Expenditure for Education Support Facilities
     - ES.8 Capital Expenditure for Education Support Facilities
     - ES.9 Administrative Support

You have now created your own Model with your own baseline data, assumptions and targets. The TEMPLATE ANPRO-Model has now become the specific PROVINCIAL ANPRO-Model.

REMEMBER!
EACH TIME you have finished working with a Sheet or a step,
SAVE YOUR FILE!
4.3 How to Make Alternative Scenarios

Proceed as follows:

1. **SAVE THE FILE WITH A NEW NAME!** Do not work with the original file! Work only with the file that was saved under the new name.

2. **DRAW UP** a list of alternative objectives and identify alternative **TARGETS** needed to reach them. Make sure that your targets are independent variables (decision variables) and not result variables (calculated by the Model).

3. Whenever you want to change one or more targets (in order to produce a **NEW SCENARIO**), first, **RECORD ALL TARGET VALUES** of the original in a separate file (or on paper). You will need them to compare your alternative scenario with the original scenario.

4. Then, **ENTER NEW ALTERNATIVE TARGETS**. As soon as the new targets are entered, the Model calculates and the results can be seen immediately in all sub-sector tables as well as in the Summary Tables.

5. Sometimes the targets are set only for a few specific years (normally the end of the planning period or at the end of a five-year period). If this is the case, a linear interpolation is useful to set the targets for the intermediate years. This can be done by selecting the appropriate cells (select the cell with the baseline information to the cell with the target value and press <Ctrl> + L simultaneously). It is important to **CHECK THE TARGET VALUES** (or assumptions) in order to make sure that they are logical and plausible.

As soon as the values of all new alternative targets have been entered, you have successfully created a **NEW PLAN SCENARIO**.

6. **SAVE THE NEW SCENARIO UNDER A NEW NAME**.

7. **PRINT** the whole scenario and carefully **CHECK AGAIN** that all target values (decision variables) are consistent.

8. **INTERPRET** the projection **RESULTS**; **COMPARE** with the results of the original projections.

9. **REPEAT** Steps 1-8 until a scenario is obtained which (i) best corresponds to the objectives and alternative targets and (ii) appears feasible.

**END of Alternative Scenario**
Technical Notes on Specific Features of the ANPRO-Model

Technical Note 1: School-age Population Projections
Technical Note 2: Access to Schooling
Technical Note 3: In-migration of School-age Population
Technical Note 4: Number of Teachers Needed
Technical Note 5: Universal Basic Education (UBE)
Technical Note 6: Potential Candidates for Non-Formal Education (NFE)
Technical Note 7: Fundamental School Quality Level (FSQL)
Technical Note 8: Recurrent and Capital Expenditure
Technical Note 9: Teacher Salaries
Technical Note 10: Expenditure for Support Facilities and for the Functioning of Provincial Education Administrations
Technical Note 11: Classrooms to be Built
Technical Note 12: Linear Interpolation for Target Setting
Technical Note 13: Error Messages Concerning Drop-out Percentages
This Section contains information on specific technical questions and issues that are commonly encountered during the planning process. It offers explanations and suggestions to find answers and feasible solutions.

The Technical Notes are as follows:

Technical Note 1: School-age Population Projections
Technical Note 2: Access to Schooling
Technical Note 3: In-migration of School-age Population
Technical Note 4: Number of Teachers Needed
Technical Note 5: Universal Basic Education (UBE)
Technical Note 6: Potential Candidates for Non-Formal Education (NFE)
Technical Note 7: Fundamental School Quality Level (FSQL)
Technical Note 8: Recurrent and Capital Expenditure
Technical Note 9: Teacher Salaries
Technical Note 10: Expenditure for Support Facilities and for the Functioning of Provincial Education Administrations
Technical Note 11: Classrooms to be Built
Technical Note 12: Linear Interpolation for Target Setting
Technical Note 13: ERROR Messages Concerning Drop-out Percentages
Technical Note 1: School-age Population Projections

SOURCE OF PROJECTION DATA

The usual sources of data for school-age projections are:

➢ official national projections; or
➢ official provincial projections.

Record (in a separate file or on paper) the source of the population projections (title of document; date of publication; issuing institution or Ministry; place where the document is kept and can be found in the province).

IMPORTANT: the population projections are made outside the ANPRO-Model. They are entered into the Model as assumptions (independent variables).

The population data are entered in Table 1.1 of the Sheets pertaining to the following sub-sectors: Pre-school, Primary, Secondary, Non-Formal Education, and also in the Sheet Girls (gender scenario). No population projections are needed for calculations related to Professional Secondary and for Teacher Training.

For Pre-school, the population concerned comprises the 3, 4 and 5-year old age groups. For Primary Education, the age groups are 6 (entrance age) through 11 (the 6 years of the Primary cycle). For Secondary Education, the age groups are 12-14 (corresponding to a 3-year Lower Secondary Education cycle) and 15-17 (corresponding to a 3-year Upper Secondary Education cycle). For Non-Formal Education, the age group concerned is the 15-34 age group. In the Girls Sheet, the age groups correspond to those of the Pre-school, Primary and Secondary sub-sector models.

Usually, population projections are made for five-year age groups. However, for education planning, projections are needed for both single years of age and for specific age groups. It may therefore be necessary to separate the five-year age groups into single-year age groups and then to recombine multi-year age groups that correspond to the various levels of education.

When projections for five-year age groups are broken down into one-year age ‘groups’, it is not unusual for very irregular developments to appear. The population growth curve often shows sudden significant changes (ups or downs) from one year to the next. In reality, this is not possible (except in times of war, major natural disasters, etc.). The reason for such irregular developments is the complexity of population projections, in particular, the difficulty of making reasonably realistic assumptions about future fertility rates, birth rates, death rates, etc. Such apparent irregular developments lead to similarly irregular and unrealistic developments of pupil enrolment which do not happen in reality. These population projections therefore cannot be used for education planning. In such cases, it is necessary to ‘smoothen’ the growth curve to even out these statistical irregularities.
A SIMPLE WAY TO SMOOTHEN THE POPULATION GROWTH CURVE

Select ranges of a few years, for example, 2004 (the base year for the population projections in the ANPRO-Model), 2005 (the first year of the first five-year planning period), 2010 (the first year of the following five-year planning period), and 2015 (the last year of the medium-term planning period).

Assume that the annual growth rates within each range of years (period) are the same for each year. They need not be the same for each of the three periods. In one period, they may be small or even negative (showing a population decline), while in the following period, they may be a bit higher (or lower, showing further decline of population). By adjusting the annual growth rate as indicated, the population growth curve will be more regular and will make more sense for enrolment projections.

The result is shown in the Table 1 below. The uneven growth rate of Actual Projection is smoothened in the Column Adjusted Projection.

Table 1. Example Actual and Adjusted Population Projection

<table>
<thead>
<tr>
<th>Year</th>
<th>Actual Population Projection</th>
<th>Growth Rate</th>
<th>Adjusted Population Projection</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>00/01</td>
<td>40,984</td>
<td>2.1%</td>
<td>40,984</td>
<td>-2.6%</td>
</tr>
<tr>
<td>01/02</td>
<td>42,155</td>
<td>2.9%</td>
<td>39,912</td>
<td>-2.6%</td>
</tr>
<tr>
<td>02/03</td>
<td>43,328</td>
<td>2.8%</td>
<td>38,868</td>
<td>-2.6%</td>
</tr>
<tr>
<td>03/04</td>
<td>43,146</td>
<td>-0.4%</td>
<td>37,852</td>
<td>-2.6%</td>
</tr>
<tr>
<td>04/05</td>
<td>43,146</td>
<td>0.0%</td>
<td>36,862</td>
<td>-2.6%</td>
</tr>
<tr>
<td>05/06</td>
<td>35,898</td>
<td>-16.8%</td>
<td>35,898</td>
<td>-2.6%</td>
</tr>
<tr>
<td>06/07</td>
<td>36,513</td>
<td>1.7%</td>
<td>36,347</td>
<td>1.3%</td>
</tr>
<tr>
<td>07/08</td>
<td>36,825</td>
<td>0.9%</td>
<td>36,801</td>
<td>1.3%</td>
</tr>
<tr>
<td>08/09</td>
<td>36,819</td>
<td>0.0%</td>
<td>37,261</td>
<td>1.3%</td>
</tr>
<tr>
<td>09/10</td>
<td>36,807</td>
<td>0.0%</td>
<td>37,727</td>
<td>1.3%</td>
</tr>
<tr>
<td>10/11</td>
<td>38,199</td>
<td>3.8%</td>
<td>38,199</td>
<td>1.3%</td>
</tr>
<tr>
<td>11/12</td>
<td>39,329</td>
<td>3.0%</td>
<td>38,864</td>
<td>1.7%</td>
</tr>
<tr>
<td>12/13</td>
<td>40,124</td>
<td>2.0%</td>
<td>39,541</td>
<td>1.7%</td>
</tr>
<tr>
<td>13/14</td>
<td>40,643</td>
<td>1.3%</td>
<td>40,230</td>
<td>1.7%</td>
</tr>
<tr>
<td>14/15</td>
<td>41,106</td>
<td>1.1%</td>
<td>40,931</td>
<td>1.7%</td>
</tr>
<tr>
<td>15/16</td>
<td>41,644</td>
<td>1.3%</td>
<td>41,644</td>
<td>1.7%</td>
</tr>
</tbody>
</table>
The population figures evolve more evenly within each five-year period, and the major changes around 2004/2005 and 2009/2010 are less abrupt. The Adjusted Projection will result in a more reasonable growth pattern for enrolment, as shown in Graph 1 below:

**Graph 1. Example Actual and Adjusted Population Projection**
ALTERNATIVE: USING EXCEL TO ADJUST THE POPULATION PROJECTION

Proceed as follows:

1: From the actual projection, take the value for four years - 2000/2001, 2005/2006, 2010/2011, 2015/2016 and enter the following:
   - in Cell C5 = B5
   - in Cell C10 = B10
   - in Cell C15 = B15
   - in Cell C20 = B20

The result obtained is shown in the Table 2 below:

Table 2. Setting Up an Adjusted Population Projection

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual Projection</td>
<td>Adjusted Projection</td>
</tr>
<tr>
<td>Years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>40,980</td>
<td>40,980</td>
</tr>
<tr>
<td>2001</td>
<td>42,160</td>
<td></td>
</tr>
<tr>
<td>2002</td>
<td>43,330</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>43,150</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>43,150</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>35,900</td>
<td>35,900</td>
</tr>
<tr>
<td>2006</td>
<td>36,510</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>36,830</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>36,820</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>36,810</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>38,200</td>
<td>38,200</td>
</tr>
<tr>
<td>2011</td>
<td>39,330</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>40,120</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>40,640</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>41,110</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>41,640</td>
<td>41,640</td>
</tr>
</tbody>
</table>
2: Now fill in the intermediate cells C6 to C9, C11 to C14, and C16 to C19 in such a way that the values correspond to a constant growth rate.

For the period 2000-2005, enter the following formulas:
- in Cell C5 =C4 * Power (C$9/C$4, 1/5)
- in Cell C6 =C5 * Power (C$9/C$4, 1/5)
- in Cell C7 =C6 * Power (C$9/C$4, 1/5)
- in Cell C8 =C7 * Power (C$9/C$4, 1/5)

For the period 2005-2010, the formula should be changed accordingly:
- in Cell C10 =C9 * Power (C$14/C$9, 1/5) and so on.

And again for the period 2010-2015:
- in Cell C15 =C14 * Power (C$19/C$14, 1/5) and so on.

The logical concept underlying this calculation is described below:

If the population is growing at a constant rate, it is possible to calculate the growth factor as follows:

\[
\frac{\text{Population 2005}}{\text{Population 2000}} = (1+r)^5
\]

Having now obtained the growth factor \((1+r)\), one can write:

\[
\frac{\text{Population 2001}}{\text{Population 2002}} = \frac{\text{Population 2000} \times (1+r)}{\text{Population 2001} \times (1+r)}
\]

And so on for the following years.
Technical Note 2: Access to Schooling

(Using the Primary Education sub-sector model as an example)

The number of pupils in Primary Education is composed of two groups: pupils already in school and new entrants (i.e. new pupils entering Grade 1). The progression of pupils through the Primary Education cycle is the combined result of two features:

Access: the number of pupils entering Grade 1 of Primary Education each year. This is the combined effect of the age-6 population (the normal age to enter Primary Education) and the access rate.

Internal efficiency: the progression of pupils from one school year to the next as driven by promotion, repetition, and drop-out rates.

The way in which the ANPRO-Model deals with access to Primary Education is described below.

Explanation of relevant variables used in Model Sheet 6: Primary Education Sub-sector (see Annex III)

TABLE 1.1 - DEMOGRAPHIC DATA: POPULATION (TOTAL)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population Age 6</th>
<th>Growth Rate</th>
<th>Age Group 6-11</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>88,205</td>
<td>2.00%</td>
<td>546,854</td>
<td>1.93%</td>
</tr>
<tr>
<td>05/06</td>
<td>89,969</td>
<td>1.93%</td>
<td>559,462</td>
<td>1.93%</td>
</tr>
<tr>
<td>06/07</td>
<td>91,706</td>
<td>1.86%</td>
<td>570,148</td>
<td>1.90%</td>
</tr>
<tr>
<td>07/08</td>
<td>93,413</td>
<td>1.80%</td>
<td>580,830</td>
<td>1.86%</td>
</tr>
<tr>
<td>08/09</td>
<td>95,096</td>
<td>1.74%</td>
<td>591,114</td>
<td>1.80%</td>
</tr>
<tr>
<td>09/10</td>
<td>96,750</td>
<td>1.68%</td>
<td>601,179</td>
<td>1.74%</td>
</tr>
<tr>
<td>10/11</td>
<td>98,376</td>
<td>1.62%</td>
<td>611,140</td>
<td>1.68%</td>
</tr>
<tr>
<td>11/12</td>
<td>99,975</td>
<td>1.65%</td>
<td>621,114</td>
<td>1.62%</td>
</tr>
<tr>
<td>12/13</td>
<td>101,546</td>
<td>1.57%</td>
<td>631,149</td>
<td>1.65%</td>
</tr>
<tr>
<td>13/14</td>
<td>103,090</td>
<td>1.52%</td>
<td>641,114</td>
<td>1.57%</td>
</tr>
<tr>
<td>14/15</td>
<td>104,606</td>
<td>1.47%</td>
<td>651,148</td>
<td>1.52%</td>
</tr>
<tr>
<td>15/16</td>
<td>106,094</td>
<td>1.42%</td>
<td>661,179</td>
<td>1.47%</td>
</tr>
</tbody>
</table>

Column Population Age 6 (Col. C): this is an independent (or decision) variable. It comes from data of the last census. Data must be entered for all the projection years as well as for past years. The population age 6 will determine the new entrants in Grade 1 of Primary Education through an access rate (Table 1.2, Col. C).

Column Growth Rate (Col. D): this shows the growth rate of population age 6 year-by-year for the whole period. It has no other purpose than to show the consistency of data entered in the Population Age 6 Column.

Column Age Group 6-11 (Col. E): this is an independent (or decision) variable (like Population Age 6) that comes from the last census. Data must be input for all the projection years as well as for previous years. The population age group 6-11 is used to calculate the Gross Enrolment Ratio (GER) in Table 1.17, Col. K.

Column Growth Rate (Col. F): this shows the growth rate for the age group 6-11 year-by-year for the whole period. It allows for checking the consistency of the projections.
TABLE 1.2 – ACCESS RATE AND ENTRANTS IN GRADE 1

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Access rate*</th>
<th>Entrants into Grade 1</th>
<th>% Entrants into</th>
<th>Growth</th>
<th>Entrants into Public Schools (percentage)</th>
<th>Entrants into Private Schools (percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>94.2%</td>
<td>83,089</td>
<td>99.8%</td>
<td>0.2%</td>
<td>82,923</td>
<td>166</td>
</tr>
<tr>
<td>05/06</td>
<td>95.2%</td>
<td>85,623</td>
<td>3.0%</td>
<td>99.7%</td>
<td>0.3%</td>
<td>85,366</td>
</tr>
<tr>
<td>06/07</td>
<td>96.1%</td>
<td>88,197</td>
<td>2.8%</td>
<td>99.5%</td>
<td>0.4%</td>
<td>88,343</td>
</tr>
<tr>
<td>07/08</td>
<td>98.1%</td>
<td>91,281</td>
<td>2.0%</td>
<td>99.3%</td>
<td>0.7%</td>
<td>91,533</td>
</tr>
<tr>
<td>08/09</td>
<td>99.0%</td>
<td>94,812</td>
<td>2.3%</td>
<td>99.1%</td>
<td>0.9%</td>
<td>94,950</td>
</tr>
<tr>
<td>09/10</td>
<td>100.0%</td>
<td>98,376</td>
<td>2.3%</td>
<td>98.9%</td>
<td>1.1%</td>
<td>98,395</td>
</tr>
<tr>
<td>10/11</td>
<td>100.0%</td>
<td>101,546</td>
<td>1.6%</td>
<td>98.4%</td>
<td>1.6%</td>
<td>98,950</td>
</tr>
<tr>
<td>11/12</td>
<td>100.0%</td>
<td>104,048</td>
<td>1.5%</td>
<td>97.7%</td>
<td>2.3%</td>
<td>100,678</td>
</tr>
<tr>
<td>12/13</td>
<td>100.0%</td>
<td>106,094</td>
<td>1.4%</td>
<td>97.3%</td>
<td>2.7%</td>
<td>100,761</td>
</tr>
<tr>
<td>13/14</td>
<td>100.0%</td>
<td>108,094</td>
<td>1.4%</td>
<td>96.9%</td>
<td>3.1%</td>
<td>102,805</td>
</tr>
</tbody>
</table>

* There are children entering Grade 1 below and over age 6. Therefore, the access rate target could be over 100%.

Column **Access Rate** (Col. C): this is a target (or independent) variable. Multiplied by the **Population Age 6** (Table 1.1, Col. C), it gives the number of entrants into Grade 1.

Column **Entrants in Grade 1** (Col. D): these are the new pupils in Grade 1 of Primary Education. It is the product of the **Population Age 6** (Table 1.1, Col. C) multiplied by the **Access Rate** (Table 1.2, Col. C). These new pupils (entrants) join the pupils already in Primary Education.

Column **Growth** (Col. E): this shows the growth rate of the number of entrants year-by-year.

Column **Entrants in Public Schools** (percentage) (Col. F): this is a target (independent or decision) variable. It is a percentage which refers to the number of entrants into Grade 1 (Col. D) that will enter public schools.

Column **Entrants in Private Schools** (percentage) (Col. G): this is a dependent (or a result) variable. It is calculated as 100 per cent less the percentage of **Entrants in Public Schools**.

The Column **Entrants in Public Schools** (number) (Col. H): this is the result of the **Population Age 6** multiplied by the percentage of **Entrants in Public Schools** (which is an independent or decision variable, same Table, Col. F).

Column **Entrants in Private Schools** (number) (Col. I): this is the result of the **Population Age 6** multiplied by the percentage of **Entrants in Private Schools** (an independent or decision variable), same Table, Col. F).
Technical Note 3: IN-MIGRATION OF SCHOOL-AGE POPULATION

Some provinces experience a strong inflow of population coming from rural provinces where the economic conditions are less favourable than in urban areas. Rural-urban migration is therefore a problem for some urban provinces. Provincial education authorities have to foresee issues of resource availability (classrooms, teachers, materials) in order to accommodate the inflowing school-age population, particularly at Primary school age. The problem is the absence of reliable, official statistical information on the size and age distribution of this in-migrating population and therefore the impossibility to make accurate population projections.

How does the ANPRO-Model deal with in-migration?

The model assumes that in-migration is mainly a problem for the Primary Education sub-sector and deals with this problem only in the Primary Education Sheet, Pupil Sub-Model, Tables 1.13 and 1.14. The Model further assumes that the cities and provinces concerned possess other useful sources of information such as research studies and surveys which are used concurrently for other purposes and programmes (e.g. health, urban development, poverty reduction, etc.). These information sources make it possible to estimate the approximate number of in-migrating youth of Primary School age. Based on this information, the provincial education authorities decide for how many of the in-migrating pupils they intend to provide Primary Education. These figures will be entered in Table 1.13 as independent variables. The resulting enrolment due to in-migration will automatically be added to Table 1.15 (Enrolment in Public Schools).

In Table 1.14, the additional new entrants from in-migration are expressed as a percentage of total enrolment in each grade. These percentages foresee the relative size and scope of the problem, if any. They allow the user to check easily whether the estimates are within reasonable range.
Technical Note 4: Number of Teachers Needed

The need for teachers is computed based on the number of classes in public Primary Education and targets that define the average number of standard and non-standard teachers per class. Based on this information, the Model calculates the number of Primary teachers required for public education.

The way in which the ANPRO-Model deals with the projection of teachers needed in Primary Education (Model Sheet 6: Primary Education) is described below.

**TABLE 2.1 - PUPIL/CLASS RATIOS**

<table>
<thead>
<tr>
<th>Column</th>
<th>Pupil/Class Ratio by grade (Cols. C to H): these are targets (independent or decision variables) that fix the number of pupils by class (groups of pupils studying together) and grade. The target figure is used to calculate the number of classes by grade.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Pupil/Class Ratio (Col. I): shows the resulting overall Pupil/class Ratio obtained by dividing the total enrolment in Primary (public schools) (Table 1.15, Col. I) by the total number of classes (Table 2.2, Col. I). Its purpose is to illustrate the effect of the Pupil/class Ratios by grade set as targets.</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 2.2 - CLASSES**

<table>
<thead>
<tr>
<th>Column</th>
<th>Classes by grade (Cols. C to H): show the result of the division of total enrolment by grade in the public sector (Table 1.15, Cols. C to H) by the Pupil/class Ratios (targets, Table 2.1, Cols. C to H).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Classes (Col. I): shows the total number of classes needed for all grades (as the sum of Columns C to H in the same Table).</td>
<td></td>
</tr>
</tbody>
</table>
TABLE 2.3 – TEACHERS PER CLASS

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Standard Teachers per Class</th>
<th>Non-Standard Teachers per Class</th>
<th>All Teachers per Class</th>
<th>Pupil/Teacher Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05/06</td>
<td>1.03</td>
<td>0.17</td>
<td>1.20</td>
<td>3.48</td>
</tr>
<tr>
<td>06/07</td>
<td>1.13</td>
<td>0.14</td>
<td>1.26</td>
<td>3.26</td>
</tr>
<tr>
<td>07/08</td>
<td>1.20</td>
<td>0.10</td>
<td>1.30</td>
<td>3.20</td>
</tr>
<tr>
<td>08/09</td>
<td>1.23</td>
<td>0.07</td>
<td>1.30</td>
<td>3.20</td>
</tr>
</tbody>
</table>

Column **Standard Teachers per Class** (Col. C): is a target (an independent or decision variable) that fixes the average number of standard teachers per class.

Column **Non-Standard Teachers per Class** (Col. D): is a target (an independent or decision variable) that fixes the average number of non-standard teachers per class (see Glossary for the term ‘non-standard teacher’).

Column **All Teachers per Class** (Col. E): is the sum of the two previous targets: standard and non-standard teachers per class (same Table, Cols. C and D).

TABLE 2.4 – SCHOOL STAFF BY FUNCTION

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Primary Teachers</th>
<th>School Staff by Function</th>
<th>Non-Teach. Staff</th>
<th>All School Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Non-Standard</td>
<td>Needed</td>
<td>Principals</td>
</tr>
<tr>
<td>04/05</td>
<td>11,267</td>
<td>2,048</td>
<td>13,315</td>
<td>1,554</td>
</tr>
<tr>
<td>05/06</td>
<td>13,176</td>
<td>2,175</td>
<td>15,351</td>
<td>1,643</td>
</tr>
<tr>
<td>06/07</td>
<td>15,239</td>
<td>1,753</td>
<td>16,992</td>
<td>1,747</td>
</tr>
<tr>
<td>07/08</td>
<td>17,090</td>
<td>1,424</td>
<td>18,514</td>
<td>1,855</td>
</tr>
</tbody>
</table>

Column **Primary Standard Teachers** (Col. C): is the product of the total number of classes in public Primary Education (Table 2.2, Col. I) and the average number of standard teachers per class (Table 2.3, Col. C).

Column **Primary Non-Standard Teachers** (Col. D): is the product of the total number of classes in public Primary (Table 2.2, Col. I) and the average number of non-standard teachers per class (Table 2.3, Col. D).

Column **Primary Teachers Needed** (Col. E): is the sum of the two previous results: Primary standard teachers and non-standard teachers (same Table, Cols. C and D). It expresses the total number of teachers needed for public Primary Education given the standards expressed in the targets (standard and non-standard teachers per class).
Technical Note 5: Universal Basic Education (UBE)

Many countries intend to adopt a system of Universal Basic Education (UBE) that covers Grades 1 to 9 corresponding to the age range 6 to 14. The nine-year Basic Education cycle includes Primary Education plus the first grades of Secondary Education. To accommodate education systems that already have UBE or will introduce it in the coming years, the ANPRO-Model shows two Gross Enrolment Rates (GER): the GER for the first three grades of Secondary (Grades 7 to 9), and the GER for the first nine grades of general education (Primary Education grades 1 to 6 plus three grades of Secondary Education).

The ANPRO-Model uses the UBE definition of the ‘International Standard Classification for Education’. UBE is reached when the Net Enrolment Rate (NER) is 95 per cent or higher. For Secondary Education, this means that all children in the 12-14 age group enter Grade 7 and complete Grade 9. The NER is not 100 per cent since there will always be a few children who do not enter Secondary Education, and since some of those who enter later drop out of school again.

In education systems where over-aged and under-aged pupils are a normal feature (due to scattered population, ethnic minority groups, etc.), the GER is taken as an indicator for UBE. In such cases, a GER of 100 per cent to 110 per cent is considered equivalent to UBE.

The ANPRO-Model deals with UBE through a combination of targets which have a direct impact on enrolment. These targets are included in Sheet 7 (Secondary Education). They are: transition rates from Primary Education in Table 1.2; promotion rates and repetition rates for public schools in Tables 1.3 and 1.4, and for private schools in Tables 1.6 and 1.7; and reintegration of drop-outs in Table 1.10. The combined effect of these targets on enrolment is shown as GER for the first three grades of Secondary and for overall basic education in Table 1.1 and Table S.1.

To project the enrolment increase which will lead to UBE, one must set the access rate to Secondary Education (an independent variable) to gradually reach 100 per cent and maintain it at that level. It is important to note that this does not mean that UBE has already been reached. To achieve UBE, two conditions must be fulfilled: (i) the access rate to Secondary Education must be 100 per cent, and (ii) universal Primary Education must have been achieved, i.e. all Primary school-age children must have completed Grade 6.
Technical Note 6: Potential Candidates for Non-Formal Education (NFE)

In the Non-Formal Education (NFE) sub-model, the potential candidates for each type of NFE programme are calculated as follows:

Primary Education Equivalent Programmes for Out-of-School Youth, ages 6-11 (Table 1.1, Col. F):

Column **Potential NFE Youth** (for Primary equivalent programmes):
Potential NFE youth =  
Primary drop-outs during the previous year  
- Primary reintegrated drop-outs the same year  
+ Potential NFE (Primary) pupils coming from outside the province.

Secondary (Grades 7 to 9) Equivalent Programmes for Out-of-School Youth, ages 11-14 (Table 1.2, Col. F):

Column **Potential NFLSE Youth** (for Secondary Grades 7 to 9 equivalent programmes):
Potential NFE youth =  
Secondary Grades 7 to 9 drop-outs during the previous year  
- Secondary Grades 7 to 9 previous drop-outs reintegrated in Lower Secondary Education (LSE) the same year  
+ Potential NFE (LSE) coming from outside the province.

Adult Literacy Programmes for persons ages 15-34 (Table 1.2, Col. K):

Participants are calculated as a percentage of total population ages 15-34.
Technical Note 7:
FUNDAMENTAL SCHOOL QUALITY LEVEL (FSQL)

A growing number of countries adopt quality standards for Primary and Secondary Education which are defined as packages of items that contribute to quality improvement of the teaching-learning process in schools. This system of quality standards is called Fundamental School Quality Level (FSQL). A typical FSQL programme contains one package per pupil (e.g. textbooks, copy books, pencils, etc.), one package per teacher (teacher guidebooks, in-service training, etc.), and one package per school (library, science and computer equipment, audio and visual materials, sports materials, toiletties, drinking water, etc.).

The contents of FSQL packages are not the same in all countries; therefore, the ANPRO-Model does not identify FSQL items as such. Instead, the Model includes quality items in the form of a range of targets and assumptions. These include, for example: Pupil/class Ratio, in-service teacher training, pupil-related expenditure per pupil, textbooks, special programmes, etc. The attainment of FSQL standards can be projected by changing the relevant targets and assumptions (i.e. independent variables).
The purpose of the ANPRO-Model is to support the development in the coming years of a modern medium-term education planning approach (covering a period of up to 10 years) and the preparation of a modern medium-term education plan at the provincial level. This explains why the expenditure categories used in the ANPRO-Model for medium-term planning are not necessarily identical to the expenditure categories presently used at the central and provincial levels for the annual budget.

In the coming years, the ongoing reform of public sector management in many countries (for example, the introduction of a three-year MTEF) will very likely lead to changes in the budget and expenditure categories. The ANPRO-Model is a step in this direction.

Presently applied provincial recurrent expenditure categories include:
- **Category 1:** salaries, allowances and related expenditure
- **Category 2:** operating expenditure such as electricity, water, energy, communication (telephone, internet, etc.)
- **Category 3:**
  - purchase and maintenance of equipment, including major repair of fixed assets (vehicles, offices, equipment, IT materials, etc.);
  - maintenance of facilities
- **Category 4:** other recurrent expenditure.

Table 3 on the following page shows how the provincial budget items are treated in the ANPRO-Model, i.e. which Model tables correspond to the different expenditure categories.
Table 3: Provincial Recurrent Expenditure Categories and the Corresponding ANPRO-Model Tables

<table>
<thead>
<tr>
<th>Provincial Expenditure Item by category</th>
<th>ANPRO-Model Tables</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Category 1</strong></td>
<td></td>
</tr>
<tr>
<td>- salaries</td>
<td>Recurrent expenditure tables:</td>
</tr>
<tr>
<td>- allowances</td>
<td>3.1: Salary Expenditure</td>
</tr>
<tr>
<td>- related personnel expenditure</td>
<td></td>
</tr>
<tr>
<td><strong>Category 2</strong></td>
<td></td>
</tr>
<tr>
<td>school operating expenditure:</td>
<td>Recurrent expenditure tables:</td>
</tr>
<tr>
<td>- electricity, water, energy, communication</td>
<td>3.2: Pupil And School-Related Expenditure</td>
</tr>
<tr>
<td>- teaching and learning materials</td>
<td>3.3: Textbooks, Teacher Guides</td>
</tr>
<tr>
<td>- in-service teacher training</td>
<td>3.4: In-service Teacher Training</td>
</tr>
<tr>
<td><strong>Category 3</strong></td>
<td></td>
</tr>
<tr>
<td>- purchase and maintenance of equipment:</td>
<td>Capital expenditure tables:</td>
</tr>
<tr>
<td>(vehicles, office equipment, IT materials)</td>
<td>4.2: Major Repair of Classrooms And Furniture</td>
</tr>
<tr>
<td>- maintenance of facilities (buildings, etc.)</td>
<td>4.3: Computer Labs</td>
</tr>
<tr>
<td></td>
<td>4.4: School Libraries</td>
</tr>
<tr>
<td><strong>Category 4</strong></td>
<td></td>
</tr>
<tr>
<td>- other recurrent expenditure</td>
<td>Recurrent expenditure table:</td>
</tr>
<tr>
<td></td>
<td>3.5: Special Programmes</td>
</tr>
</tbody>
</table>

Table 4 below shows how the expenditure tables in the Sub-sector Model Sheets and the provincial budget items are related to the Expenditure Summary Sheet (Sheet 4):

Table 4: Correspondence Between ANPRO-Model Expenditure Summary and Model Sub-sector Tables and PROVINCIAL Recurrent Expenditure Categories

<table>
<thead>
<tr>
<th>ANPRO-Model Tables</th>
<th>Tables in SUB-SECTOR MODEL SHEETS</th>
<th>PROVINCIAL Expenditure Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure Summary Sheet</td>
<td>Table ES.1 (Pre-school); ES.2 (Primary); ES.3 (Secondary)</td>
<td>Recurrent expenditure tables:</td>
</tr>
<tr>
<td>Column: Salaries and allowances</td>
<td>3.1: Salary Expenditure</td>
<td>1</td>
</tr>
<tr>
<td>Column: School operating expenditure</td>
<td>Recurrent expenditure tables:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.2: Pupil and School-Related Expenditure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.3: Textbooks &amp; Teacher Guides</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.4: In-service Teacher Training</td>
<td></td>
</tr>
<tr>
<td>Column: Special programmes and project expenditure</td>
<td>Recurrent expenditure tables:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.5: Special Programmes</td>
<td>4</td>
</tr>
<tr>
<td>Column: Capital expenditure</td>
<td>Capital expenditure tables:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.2: Major Repair of Classrooms and Furniture</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.3: Computer Labs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.4: School Libraries</td>
<td>3</td>
</tr>
<tr>
<td>Column: Capital Expenditure</td>
<td>Capital expenditure tables:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.5: Total Capital expenditure</td>
<td>- - -</td>
</tr>
</tbody>
</table>
Technical Note 9: Teacher Salaries

The projection of recurrent expenditure for each sub-sector is made in the Recurrent Expenditure Sub-Model. The projection is made at constant base year (2004/05) costs.

Teacher salaries and related costs (Expenditure Category 1 of provincial budgets) are dealt with in Table 3.1.

The average monthly salaries for the base year (2004/05) are those of the official salary scale applicable nationwide in all provinces.

Two assumptions underlie the projection of teacher salaries:

Assumption 1: independently of the official salary scale, an annual increase of teacher salaries occurs as the effect of two factors: a) an aging teacher population (i.e. the age pyramid of the stock of teachers will become broad at the top and thin at the bottom), and b) the progressive replacement of non-standard teachers by standard teachers.

Assumption 2: special payments (allowances) are paid, in addition to the salary. Such payments are like a salary, but they are not included in the base salary of the official salary scale. They may be the same every year for several years, or they may change from year to year. They may also be ‘0’ for several years. In the Model, such special allowances are treated as an independent variable (as an assumption). They are assumed to be 6 per cent of the base salary (i.e. the salary in the salary scale).

Taking these assumptions into account, the salary is calculated as follows:

the average monthly salary in a given year =
(monthly salary during the previous year)

\[ \times (100\% + \text{annual increase in the given year} + \text{special increase in the given year}) \]

In the ANPRO-Model, the figures for both assumptions can be changed for each year as they are independent variables. They can be set as a target or simply as an assumption.
Technical Note 10: Expenditure for Education Support Facilities and for Provincial Administrative Units

In the ANPRO-Model, the expenditure for education support facilities (such as teacher training centres, IT centres, etc.) and for the provincial administrative units are not broken down by education sub-sector. It is assumed that they serve all sub-sectors. They are dealt with in Model Sheet 4: Summary of Expenditure Projections.

Table ES.7 contains the recurrent expenditure and Table ES.8 the capital expenditure for support facilities. The targets that must be entered in these tables are the number of support centres and unit cost.

The recurrent expenditure of the provincial administrative unit is shown in Table ES.9. The independent variables (assumptions) for this projection are the annual growth rate of staff, salaries and non-salary expenditure.
Technical Note 11: Classrooms to be Built
(Using the Primary Education sub-sector model as an example)

The ANPRO-Model generates projections for classroom requirements in Tables 4.1 and 4.2.

The need for new classrooms

The need for new classrooms, i.e. classrooms to be built, is determined by three factors:

- the increase in enrolment, i.e. the increase in the number of pupils due to the growth of the school-age population and the increase in the enrolment rate;
- the replacement of existing classrooms (usually temporary classrooms);
- the decrease in the number of classrooms used in double-shift schooling (as a result of gradually introducing single-shift schooling in all schools and for all pupils).

The Capital Expenditure sub-model for the Primary and Secondary Education sub-sectors projects the needs for classroom construction as follows:

DOUBLE-SHIFT USE OF CLASSROOMS

Classrooms used in double-shift schooling are a target in Table 4.1, Col. D: Double-Shift Rooms (out of available rooms).

The Model then calculates in the same Table:

- the number of classes (i.e. pupil groups) in double-shift classrooms (Col. D);
- the number of classes (i.e. pupil groups) in single-shift classrooms (Col. G);
- the percentage of pupils in double-shift (Col. F).

The calculation of these variables is explained below.

CLASSROOMS NEEDED DUE TO INCREASE IN PUPIL ENROLMENT

When estimating the total need for classrooms (i.e. the total number of classrooms needed in Primary and in Secondary Education), the number of classes (i.e. pupil groups) is the starting point. The corresponding number of classrooms needed is projected as follows:

The total number of classes (pupil groups) is calculated in Table 2.2, Col. I and repeated in Table 4.1, Col. C.

The number of classes working in double-shift classrooms is calculated in Table 4.1, Col. E as a result of the target Double-Shift Classrooms (same Table, Col. D):

classes working in double-shift classrooms = double-shift classrooms x 2
The number of classes working in single-shift classrooms is calculated in Col. G as a result of the total number of classes (Col. C) less the number of classes working in double-shift classrooms:

\[
\text{Classes in single-shift classrooms} = \frac{\text{Total classes}}{2} - \text{classes in double-shift classrooms}
\]

As a result, the total need for classrooms (same table, Col. H) is equal to the number of classes working in double-shift divided by two (since two classes work in each of the double-shift classrooms), plus the number of classes working in single-shift classrooms (since each of these classes uses one classroom):

\[
\text{Need for classrooms} = \frac{\text{classes in double-shift classrooms}}{2} + \text{classes in single-shift classrooms}
\]

**Estimating the need for NEW ADDITIONAL classrooms**

In case of increases in enrolment and after using double-shift classrooms (see Point 1), new classrooms still may be needed to accommodate the increase:

Available classrooms: indicated in Table 4.1 as **Total Available Classrooms** (Col. I) are calculated as the sum of:

\[
\text{available classrooms the previous year (same Col., previous year)} + \text{classrooms built during the previous year}
\]

The projection of classrooms to be built this year for availability next year (Col. J) is calculated based on the total need for classrooms next year (Col. H, following year) less the available classrooms at the beginning of the current year (i.e. the stock of classrooms at the end of the previous year) (Col. I).

**Replacement of EXISTING classrooms**

The number of temporary classrooms to be replaced (Table 4.2, Col. C) is a target. Col. D of the same Table shows the resulting percentage of classrooms to be replaced. These classrooms are added to the total number of classrooms to be built (see below).

**How the ANPRO-Model calculates and projects the Total Number of Classrooms to be built each year**

The total number of classrooms to be built is shown in Table 4.2, Col. E. It is the sum of:

\[
\text{the number of temporary classrooms to be replaced (Target in Col. C)} + \text{the number of classrooms to be built due to the increase in pupil enrolment (result from Table 4.1, Col. J)}
\]
How to set the targets for classrooms to be built

Step 1: Target setting

Set the target **Double-Shift Classrooms** in Table 4.1, Col. D.

In Table 4.1, compare Col. H: **Need for Classrooms** and Col. I: **Total Available Classrooms**. If the number of available classrooms is higher than the number needed, you may set a lower target for the number of double-shift classrooms in Col. D since in such a case, there are sufficient unused classrooms. This should not happen in case of an increase in enrolments unless the target setting for double-shift classrooms is unrealistic.

In Table 4.2, make sure that the value of the dependent variable in Col. E: **Classrooms** (total classrooms to be built) is realistic. If the number of classrooms to be built is too high for the likely available construction capacity or for the likely available capital budget, you may have to reconsider one or more of the following:

- the use of double-shift classrooms (target in Table 4.1, Col. D); and/or
- the number of temporary classrooms to replace (target in Table 4.2, Col. C); and/or
- the Pupil/class Ratios (under Table 2.1, Cols. C to H).

NOTE: It is quite possible that new classrooms are needed even if enrolment is decreasing because of a policy to replace temporary classrooms with regular classrooms.

Step 2: Projection for the first year

The ANPRO-Model assumes that the classrooms are to be built during the school year prior to the year in which they will be used for the first time. Thus, for the first projection year (presently 2005/06), the Model uses as baseline data the number of classrooms built during the previous year.

In Table 4.1, for the first projection year, compare Col. H: **Need for Classrooms** with Col. I: **Total Available Classrooms**:

- if the available number of classrooms is greater than the need for classrooms, you must reduce the target in Col. D: **Double-Shift Classrooms** until the number of **Total Available Classrooms** (Col. I) is equal to **Need for Classrooms** (Col. H).
- if the available number of classrooms is lower than the need for classrooms, you must adjust the target of **Double-Shift Classrooms** (Col. D) for the first projection year until the number of **Total Available Classrooms** (Col. I) is equal to **Need for Classrooms** (Col. H).

If it is not possible to increase the number of double-shift classrooms (for instance, because of a policy limiting the number of classrooms used in double-shifting for that year), then the additional classrooms needed have to be rented or other rooms in the school have to be used as classrooms.
Technical Note 12: Linear Interpolation for Target Setting

Why does the Model not use linear interpolation for target setting?

The ANPRO-Model does not use linear interpolation for target setting because doing so would result in the setting of unrealistic targets. Targets are values which the decision maker decides. In reality, targets do not evolve in a linear manner.

One sets targets in order to reach results. The smooth, realistic progression from year to year of the intended result is important. Regular, smooth progression of the target itself is not important and is often unrealistic.

How to make linear interpolation for target setting

Linear interpolation may, on the other hand, be helpful in order to obtain a first approximation of the results or impact of a given target. The approximate results can then be discussed before the final targets are decided. If you want to use interpolation, you must proceed as follows:

- mark the range where you want to include the linear interpolation, including its limits (boundaries);
- Press <Ctrl> + L simultaneously.

The interpolated values will appear within the range between the two limits that define the interpolation.
Technical Note 13:
ERROR MESSAGES CONCERNING DROP-OUT PERCENTAGES

It may occur that an ERROR message appears instead of a drop-out percentage when, for a given grade and a given year, the promotion rate plus the repetition rate combined are greater than 100 per cent.

This may happen:
- in the Primary and Secondary Education Sheets, Tables 1.5 and 1.8; and
- in the same tables of the Girls Sheet.

Solution:

Check the values for the promotion and the repetition rate to make sure that their combined value is less than 100 per cent.
6 Analytical Tools

6.1 Extracting Tables for Inclusion in a Text

6.2 Checking and Analyzing Trends with Graphs

6.3 Monitoring Data with Graphs
6.1 Extracting Tables for Inclusion in a Text

The tables in the ANPRO-Model are not designed for direct use in texts such as the chapters of the medium-term education plan or any other document. They are very detailed, quite technical, and therefore difficult to read.

In order to make the model tables more suitable for inclusion in texts, the ANPRO-Model includes a specially-designed tool that allows the user to extract data from the Model into tables that have a more suitable format with more condensed information than in the complex ANPRO-Model tables.

The tables that are to be included in a text must be built in an Annex Excel File which is dynamically linked to the ANPRO-Model. Each time the ANPRO-Model is updated, these tables will be automatically updated as well. It is then possible to copy the new versions or contents of these tables into the text. The following simple example illustrates this use of the ANPRO-Model. The example concerns the preparation of a 10-Year Provincial Education Plan from 2005/06 to 2014/15 with the baseline year 2004/05.

Step 1: Definition of targets and results to be shown in text tables

This phase of the preparation of the 10-Year Plan focuses on the Gross Enrolment Rate (GER) in primary education (driven by the target Access Rate) and its financial implications. The target setting discussions among the stakeholders will focus on these particular aspects, but using the tables in the PRIMARY sub-model would be more confusing than helpful. All the stakeholders have already agreed that the ANPRO-Model is reliable and want to concentrate their discussion on the issue of increasing the GER as fast as possible in order to reach UPE. For this discussion, they need the following key data:

- the target Access Rate (taken from Table 1.2 of the PRIMARY sub-model);
- the resulting Total Enrolment (from Table 1.17 of the PRIMARY sub-model);
- the resulting Gross Enrolment Rate (from Table 1.17 of the PRIMARY model);
- the resulting Total Recurrent Expenditure (from Table 3.6 of the PRIMARY sub-model);
- the resulting Total Capital Expenditure (from Table 4.5 of the PRIMARY sub-model).

The period that will be shown in the document for discussion starts in the baseline year (2004/05) and ends in 2014/15.
Step 2: Building the appropriate table

Instead of showing the original four tables of the ANPRO-Model containing the required information in great detail, the planner will create a new Excel file which can be called ‘Extract’ that will present the information in a more condensed and useful manner. In this example, the file contains only one table with the required information as listed above. As the ‘Extract’ file is dynamically linked to the ANPRO-Model, the formulas in ‘Extract’ will refer to the information contained in the Model. Once created, the table contains the information for the base scenario included in the ANPRO-Model (Access Rate reaching 100 per cent in 2010/11). The ‘Extract’ file looks as follows:

Table 1. Extracting Tables from the ANPRO-Model: Example of Summary Table, Scenario 1

<table>
<thead>
<tr>
<th>Year</th>
<th>Access Rate</th>
<th>Total Enrolment</th>
<th>GER</th>
<th>Recurrent</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>94.2%</td>
<td>482,828</td>
<td>89.7%</td>
<td>20.3</td>
<td>11.9</td>
</tr>
<tr>
<td>05/06</td>
<td>95.2%</td>
<td>496,606</td>
<td>90.5%</td>
<td>28.7</td>
<td>12.2</td>
</tr>
<tr>
<td>06/07</td>
<td>96.1%</td>
<td>512,217</td>
<td>91.6%</td>
<td>32.4</td>
<td>12.3</td>
</tr>
<tr>
<td>07/08</td>
<td>97.1%</td>
<td>528,974</td>
<td>92.8%</td>
<td>36.2</td>
<td>12.6</td>
</tr>
<tr>
<td>08/09</td>
<td>98.1%</td>
<td>546,538</td>
<td>94.2%</td>
<td>40.9</td>
<td>13.0</td>
</tr>
<tr>
<td>09/10</td>
<td>99.0%</td>
<td>564,375</td>
<td>95.6%</td>
<td>42.3</td>
<td>13.3</td>
</tr>
<tr>
<td>10/11</td>
<td>100.0%</td>
<td>582,101</td>
<td>97.0%</td>
<td>47.7</td>
<td>11.9</td>
</tr>
<tr>
<td>11/12</td>
<td>100.0%</td>
<td>598,192</td>
<td>98.1%</td>
<td>51.3</td>
<td>9.3</td>
</tr>
<tr>
<td>12/13</td>
<td>100.0%</td>
<td>612,800</td>
<td>98.9%</td>
<td>53.5</td>
<td>9.4</td>
</tr>
<tr>
<td>13/14</td>
<td>100.0%</td>
<td>629,154</td>
<td>99.6%</td>
<td>56.5</td>
<td>9.7</td>
</tr>
<tr>
<td>14/15</td>
<td>100.0%</td>
<td>638,685</td>
<td>100.1%</td>
<td>60.2</td>
<td>10.0</td>
</tr>
</tbody>
</table>

Step 3: How to include the table in a document

The planner who is in charge of drafting the document will include this table in the new document file ‘Text’ by following this procedure:
- create a new Word document file named ‘Text’;
- switch to the Excel file ‘Extract’;
- select the table;
- mark and copy the whole table;
- switch to the Word file ‘Text’ that was just created;
- paste the table into the Word file ‘Text’.

Step 4: Managing updated information from the ANPRO-Model

When the planner uses the ANPRO-Model template for planning or other purposes, the figures in the Model will change. Such changes concern independent variables (baseline data and/or targets and/or assumptions) and the resulting changes to dependent variables. When any of these values are changed, the table in the Excel file ‘Extract’ will automatically be updated; however, the Word file ‘Text’ will not.

* Each time the ‘Extract’ file is opened, Excel will ask whether it is necessary to update it.
In order to update the Word file ‘Text’, the planner should proceed as follows:

- open the Word document ‘Text’;
- go to the table to be updated in the document;
- open the Excel file ‘Extract.xls’;
- select and copy the whole table;
- switch to the Word file ‘Text’;
- paste the table into the Word document ‘Text’.

**Note:** instead of copying the whole table, it is possible to copy only the updated figures. In this case, the table format in the Word file will not change. To do so:

- In the Excel file, select only the cells that contain the figures (NOT the whole table) and copy it;
- Switch to the Word file, select only the cells containing the figures (NOT the whole table), and paste the copied information from the Excel file over it.

### Step 5: Managing alternative projection scenarios

The planner may anticipate a discussion about the fast-growing recurrent expenditure (in constant prices) and wish to show that this is not due to the growth of the access rate. Therefore, it may be useful to produce another scenario using a constant access rate over the whole period. The planner should proceed as follows:

- open the **ANPRO-Model** and go to the **PRIMARY** model sheet;
- go to Table 1.2;
- in Col. C, change the target **Access Rate** to the initial value (94.2 per cent);
- open the ‘Extract’ file; the information in ‘Extract’ is automatically updated and the table now looks as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Access Rate</th>
<th>Total Enrolment</th>
<th>GER</th>
<th>Recurrent</th>
<th>Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>94.2%</td>
<td>482,828</td>
<td>89.7%</td>
<td>20.3</td>
<td>11.9</td>
</tr>
<tr>
<td>05/06</td>
<td>94.2%</td>
<td>495,734</td>
<td>90.3%</td>
<td>28.6</td>
<td>11.9</td>
</tr>
<tr>
<td>06/07</td>
<td>94.2%</td>
<td>509,579</td>
<td>91.1%</td>
<td>32.2</td>
<td>11.9</td>
</tr>
<tr>
<td>07/08</td>
<td>94.2%</td>
<td>523,641</td>
<td>91.9%</td>
<td>35.9</td>
<td>12.2</td>
</tr>
<tr>
<td>08/09</td>
<td>94.2%</td>
<td>537,567</td>
<td>92.7%</td>
<td>40.2</td>
<td>12.4</td>
</tr>
<tr>
<td>09/10</td>
<td>94.2%</td>
<td>550,811</td>
<td>93.3%</td>
<td>41.2</td>
<td>12.6</td>
</tr>
<tr>
<td>10/11</td>
<td>94.2%</td>
<td>562,937</td>
<td>93.8%</td>
<td>46.1</td>
<td>11.1</td>
</tr>
<tr>
<td>11/12</td>
<td>94.2%</td>
<td>573,989</td>
<td>94.1%</td>
<td>49.2</td>
<td>8.6</td>
</tr>
<tr>
<td>12/13</td>
<td>94.2%</td>
<td>584,379</td>
<td>94.3%</td>
<td>51.0</td>
<td>8.7</td>
</tr>
<tr>
<td>13/14</td>
<td>94.2%</td>
<td>594,395</td>
<td>94.5%</td>
<td>53.6</td>
<td>9.1</td>
</tr>
<tr>
<td>14/15</td>
<td>94.2%</td>
<td>604,469</td>
<td>94.7%</td>
<td>56.9</td>
<td>9.4</td>
</tr>
</tbody>
</table>

- include this new scenario in the ‘Text’ document as a new table.

Using the figures from this table, it is possible to demonstrate that the growth of the recurrent expenditure is only to a small extent due to the increase in the access rate and that other factors (mainly population growth and quality inputs) are responsible for the projected increase in the recurrent expenditure.
6.2 Checking and Analyzing Trends with Graphs

The Handbook comes with a CD-ROM that contains two EXCEL workbooks for the MONITORING OF DATA

- Population.xls features graphic presentations of the SCHOOL-AGE POPULATION
- Graphics.xls includes graphic presentations of TARGETS and RESULT VARIABLES and of EXPENDITURE PROJECTIONS.

Note: The Excel file is dynamically linked to the ANPRO-Model. If the name of the model file is changed (for example: when a new projection scenario is made and the Model is saved under a new name), the links with the Population.xls and the Graphics.xls workbooks will not work correctly anymore. Therefore, the links must be updated by inserting the new name of the Model in Excel from the “Edit” menu, option “Links”.

POPULATION GRAPHS
An efficient way to present complex series data is to transpose them into graphs. This facilitates the identification of essential features of baseline data, targets and future trends. By helping to identify possible inconsistencies and seemingly unusual developments, the graphs will incite discussion and review of targets and assumptions used in the Model and may lead to revisions of these targets and/or assumptions.

Population.xls is a workbook that allows the user to view and check the population baseline data and projections used in a provincial model adapted from the ANPRO-Model. It is dynamically linked to the Model, meaning that any change in the ANPRO-Model will be automatically reflected in the graphs. The workbook Population.xls covers the information presented in Table 3:

- The simplest way to view the graphs is to:
  - open the Excel file Population.xls;
  - select the View menu;
  - select the Full Screen option;
  - move from graph to graph using the key combination <Ct> + <PgDn>.

Table 3. Contents of the Population Graphs

<table>
<thead>
<tr>
<th>Age</th>
<th>Provincial trend compared to the national trend</th>
<th>Boys compared to girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>4</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6-11</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>12-14</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>15-17</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>15-34</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
TARGETS, RESULT VARIABLES AND EXPENDITURE PROJECTIONS

The Excel workbook Graphics.xls is dynamically linked to the ANPRO-Model; this means that any change in the Model will be automatically reflected in the graphs. The workbook Graphics.xls covers:

- Main provincial targets, comparing them with the corresponding National EFA Plan targets;
- Essential indicators concerning GER, recruitment of teachers, and classrooms to be built in existing schools;
- Recurrent and capital expenditure.

The simplest way to view the graphs is to:

- open the Excel file Graphics.xls;
- select the View menu;
- select the Full Screen option;
- move from graph to graph using the key combination <Ctrl> + <PgDn>.

6.3 Monitoring Data with Graphs

The following two examples describe how errors in baseline data or assumptions can be detected with the Population Graphics tools.

EXAMPLE 1: MONITORING POPULATION PROJECTIONS

In the following example, the provincial planner has entered the population projections for Province A’s 6-year-old boys and girls, i.e. the population of Primary Education entrance age. The graphic presentation of these population baseline data and projections shows that there is a mistake in the projections for the year 2011/2012.

Figure 1. Monitoring Data with Graphics: Example 1

Population Age-6 Girls/Boys
Observation

This mistake has an effect on the population projections for several years. The reason for this mistake could be (a) a mistake in the population projections which have been inputted into the ANPRO-Model as assumptions. This mistake would have been made by the institution which provided the population projections. Or, (b) the original population projections provided were copied incorrectly into the Model. In order to identify the nature of the mistake, the planner has to check the population tables in the ANPRO-Model.

EXAMPLE 2: MONITORING FINANCIAL RESOURCE REQUIREMENTS

In the following example, the expenditure projections for Province B (cumulative for the entire 5-year planning period of 2006-2010) show an unusual distribution of recurrent expenditure between sub-sectors. Professional Secondary Education represents 38 per cent of total expenditure whereas in all other provinces, it is no more than 10 per cent.

Figure 2. Monitoring Data with Graphics: Example 2

![Pie Chart]

**Total Recurrent Expenditure 2006-2010 (%)**

- Primary: 34%
- Secondary: 38%
- Pre-School: 3%
- NFE: 1%
- Admin. Support: 1%
- Teacher Training: 0%

Observation

In order to identify the cause for this apparent mistake, it is necessary to recheck the data inputted into the Model, i.e. the baseline data, the assumptions and the targets concerning Professional Secondary Education. In this particular case, rechecking the data revealed a mistake: the intake rate of Grade 9 Secondary graduates to Grade 1 of Professional Secondary Education was far too high. The reason for this error was either a typographical error in data entry or an unrealistic assessment of the present situation concerning the role and relative size of the Professional Secondary Education sub-sector.
Monitoring of Plan Implementation and Updating of the Education Plan

7.1 The Concept of Plan Implementation Monitoring

7.2 A Tool for Monitoring Plan Implementation

7.3 Updating the ANPRO-Model
7.1 The Concept of Plan Implementation Monitoring

Throughout the entire period of implementing an education plan, it is important to continuously monitor its progress. Monitoring activities are an indispensable source of essential information required for several purposes:

**MONITORING PURPOSE 1:**

to see whether and to what extent the targets set in the plan are being reached. If one or more targets are not being reached as foreseen in the plan, monitoring information is needed to identify the extent and causes of underachievement. Also, in case of actual developments exceeding the targets set in the plan, monitoring is necessary to identify the extent and causes of this development.

**MONITORING PURPOSE 2:**

to revise targets by updating them.

**MONITORING PURPOSE 3:**

to revise assumptions by updating them.

**MONITORING PURPOSE 4:**

to update the plan:
- by updating the baseline data;
- by making the current year the new base year; and
- by using the revised updated targets and assumptions.

The principal users of information concerning plan implementation are:

- **AT PROVINCIAL LEVEL**, the head and the various divisions of the provincial education administration. Each division needs to know what has been achieved in the education sub-sector under its responsibility and also all other sub-sectors for which the other divisions are in charge.

- **OTHER PROVINCIAL AUTHORITIES** that oversee the activities and performance of the education sector, participate in decision-making regarding education budget and the allocation of other resources (deployment of teachers, construction of classrooms, etc.), and/or those who participate in the preparation of annual budgets and MTEFs.
Within the MINISTRY OF EDUCATION, the departments in charge of planning and finance, as well as providers of nationally comparable, reliable, up-to-date statistical information for all other units of the Ministry. The Ministry needs monitoring information in order to:

- ensure that the national targets are effectively being attained through appropriately updated provincial education plans;
- advise the MINISTRY OF PLANNING and/or the MINISTRY OF FINANCE on the allocation of financial resources to the education sector in line with the national education plan goals and targets; and
- ensure that donors place and maintain their programmes within the framework of the goals set in the national and provincial education plans.

The MINISTRY OF FINANCE and the MINISTRY OF PLANNING, particularly during the period of budget preparation and allocation decisions.

EXTERNAL DEVELOPMENT PARTNERS (DONORS); particularly when they design and prepare their cooperation programmes.

Monitoring information about plan implementation should be provided at regular intervals, at least once every year, preferably soon after the end of the current school year and before the start of the following school year.

### 7.2 A Tool for Monitoring Plan Implementation

A special tool has been designed to facilitate the task of monitoring education plan implementation. The PLAN IMPLEMENTATION MONITORING TOOL (PIMT) comprises a set of the 25 main targets and six expenditure and cost indicators related to the different education sub-sectors. The targets and indicators included in this tool are those that are most often used to get an overview of the progress of plan implementation and of the overall situation of the education sector.

The PIMT addresses two main monitoring concerns:

- to check to what extent the targets set for access and quality to education are being achieved;
- to keep track of expenditure and costs, i.e. the financial feasibility of the goals and targets set forth in the plan.

The Plan Implementation Monitoring Tool (PIMT) is an Excel Workbook called ‘Monitoring Plan Implementation.xls’.

It is included on the CD-ROM that comes with the Handbook.

THERE ARE FOUR SHEETS IN THE WORKBOOK:

- Sheet 1: Pre-School
- Sheet 2: Primary Education
- Sheet 3: Secondary Education
- Sheet 4: Expenditure

**Note:** The tool is dynamically linked to the ANPRO-Model. If the name of the model is changed (for example, when a new projection scenario is made ands the Model is saved under a new name), the link with the Monitoring Plan Implementation.xls workbook will not work correctly any more. Therefore, the link must be updated by inserting the new name of the Model in Excel from the “Edict” menu, option “Links”.

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A sample application of the PIMT is given below for a target (the percentage of entrants to public Primary Education) and for an expenditure and cost indicator (the unit cost of Primary Education), respectively. The PIMT tables and graphs are dynamically linked to the ANPRO-Model. They take their data from the Model, and any change in the figures of the Model will automatically be reflected in the PIMT tables and graphs.

For each target and each expenditure and cost indicator, the monitoring information is presented in a **TABLE** and in a corresponding **GRAPH**.

In the table:

**THE FIRST COLUMN**
indicates the years concerned.

**THE SECOND COLUMN**
shows the baseline year indicator 2004/05 computed with the baseline data. From 2005/06 onwards (supposing a 5-year plan running from 2005/06 to 2009/10), it shows the targets inputted in the ANPRO-Model (and included in the plan), and cost indicators computed as projections made by the Model (and included in the plan). This second column is used as a reference; therefore, its figures must be kept unchanged.

**THE THIRD COLUMN**
indicates what actually has been implemented. The data in this column come from the updated version of the ANPRO-Model containing the real data showing the actual state of plan implementation. The third column also shows the revised projection data for future years of plan implementation based on what was projected by both the original plan and what has actually been implemented.

**THE FOURTH COLUMN**
shows the difference between what was projected and what was actually achieved. This is the **crucial monitoring information** which will be used in assessing the progress of plan implementation and in making decisions to revise the targets for the remainder of the plan period.

The table is followed by a graph based on the same data as the table but which is easier to analyze and interpret, therefore making it more convenient to use in discussion with decision makers.

**Table 1. Monitoring Tool, Example 1**

<table>
<thead>
<tr>
<th>Year</th>
<th>Plan Targets (1)</th>
<th>Actually implemented (by end of 2004/05) And Revised Targets (2005/06 - 2009/10) (2)</th>
<th>Difference (2) - (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/5</td>
<td>99.8%</td>
<td>(actually implemented) 99.8%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2005/6</td>
<td>99.5%</td>
<td>(revised projection) 99.7%</td>
<td>0.2%</td>
</tr>
<tr>
<td>2006/7</td>
<td>99.0%</td>
<td>(revised projection) 99.6%</td>
<td>0.6%</td>
</tr>
<tr>
<td>2007/8</td>
<td>98.5%</td>
<td>(revised projection) 99.5%</td>
<td>1.0%</td>
</tr>
<tr>
<td>2008/9</td>
<td>98.0%</td>
<td>(revised projection) 99.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>2009/10</td>
<td>97.5%</td>
<td>(revised projection) 99.1%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>
Observation

The planned targets predicted a faster decrease in Grade 1 entrance than what has actually been observed since beginning plan implementation; thus, the targets are revised to bring them closer to what appears feasible.

Table 2. Monitoring Tool, Example 2

<table>
<thead>
<tr>
<th>Year</th>
<th>Original Plan Indicators (1)</th>
<th>Actually Implemented (by end of 2004/05) And Revised Targets (2005/06 - 2009/10) (2)</th>
<th>Difference (2) - (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/5</td>
<td>42.06</td>
<td>(actually implemented) 42.06</td>
<td>0.00</td>
</tr>
<tr>
<td>2005/6</td>
<td>57.93</td>
<td>(revised projection) 56.93</td>
<td>-1.00</td>
</tr>
<tr>
<td>2006/7</td>
<td>63.53</td>
<td>(revised projection) 61.73</td>
<td>-1.80</td>
</tr>
<tr>
<td>2007/8</td>
<td>68.85</td>
<td>(revised projection) 66.10</td>
<td>-2.75</td>
</tr>
<tr>
<td>2008/9</td>
<td>75.23</td>
<td>(revised projection) 71.58</td>
<td>-3.65</td>
</tr>
<tr>
<td>2009/10</td>
<td>75.46</td>
<td>(revised projection) 70.46</td>
<td>-5.00</td>
</tr>
</tbody>
</table>
Observation

The originally planned projection was too high. Updating the Model by inputting the new real data has led to a new projection of unit cost which is lower than previously expected.

7.3 Updating the ANPRO-Model

The ANPRO-Model should be continuously updated, taking into account the actual plan implementation data for the already implemented years. In addition, when newer more reliable data on assumptions become available, these new assumptions should replace the previous assumptions.

To update the Model, one must **proceed in four steps**:

1. **Step 1:** Save the ANPRO-Model under a NEW NAME. NEVER work with the original Model.

2. **Step 2:** Replace projected data with actual data. For the current year (the first year of plan implementation) and for each of the four following years, replace the projected data with the actual data resulting from the implementation of the plan. This will update the baseline data and roll them over to the next year.

3. **Step 3:** Replace targets (and assumptions) with formulas. For the current year, replace the targets with the formula that allows the computation of the promotion rate, repetition rate, GER, pupil/class ratio, teacher/class ratio, etc. Do this by copying the formula of the previous year into the target of the current year. This will allow the user to compute the needed indicators using the new real baseline data that are now available.
Step 4: Revise the targets (and assumptions) for the remaining years of the plan. Taking into account the trends which have emerged in recent years of plan implementation, several targets will have to be changed. Proceed as follows:

- Identify the targets to be revised;
- Set new updated targets and document your reasons for updating them;
- Input the updated targets into the **ANPRO-Model** and let the Model compute them and produce revised projections.

All four updating steps apply only to the targets that are to be monitored.

In the case of expenditure and cost indicators, only Step 1 and Step 4 are necessary. Step 2 and Step 3 are done automatically by the ANPRO-Model on the basis of the updated data and targets.

Once the ANPRO-Model has been updated, the tables and graphs of the indicators included in the PIMT will be updated automatically.
Annex I: Situation Analysis
Annex I: SITUATION ANALYSIS

Note:
This Annex presents an example of a situation analysis from a medium-term education plan. It is based on the National EFA Action Plan 2003-2015 of Viet Nam.

Situation Analysis and Issues for the PRIMARY EDUCATION sub-sector

The primary school period is accorded particular attention within education policy in general and within EFA in particular. This is because as it represents the fundamental cycle of education and the foundation for a citizen’s future educational development and participation in wider society. Primary education is the start of formal and compulsory education and spans a five-year cycle. Primary education aims to provide all children with essential literacy and numeric skills and to enable them to become good citizens with an appreciation of nature, society, morals and ethics and art, music and literature. Primary education is considered a key vehicle for assisting the country's transition to a knowledge-based society, providing pupils with life skills and competencies that are necessary for economic growth and social development. The official entry age for primary school is 6 years with completion set for 10 years. In practice, a number of over-aged children outside the primary school age range attend primary school. The government policy is to promote primary school attendance within the right age and at the same time entitle children above 6 years to participate in primary school irrespective of age. Recent gains in enrolment have substantially reduced the gap between gross [GER] and net [NER] enrolment rates at primary level.

EFA Target Group 2 encompasses all children above the age of 6 who attend primary school. It also includes all children from 6 to 10 who are not in school.

2.1 Main achievements since 1990 and challenges for 2003-2015

ACCESS

Sustaining progress achieved towards universal primary education (UPE) requires consolidation and renewed emphasis on keeping children in school: During the 1990s, the so-called Jomtien EFA decade, the proportion of children attending primary school rose significantly, resulting in a high net enrolment rate of around 90% in 2000/1. Improvements in net enrolment rates have extended to all income groups, to all regions, to minority groups and to both genders. This shows the success of a concerted national campaign to promote UPE for all children, in all parts of the country.

Increases in net enrolment rates have gone hand-in-hand with substantial improvements in key internal efficiency indicators. These include falling repetition and drop-out rates and progress towards enrolment of the primary 6-10 year age group. Enrolment rates for girls have traditionally been high in the country. At the turn of the millennium, enrolment rates for boys and girls were almost equal at the primary level with the exception of some minority groups where girl attendance remains persistently low.

The challenge facing the country Viet Nam for the EFA decade 2003-2015 is to consolidate existing gains and expand UPE towards international standards. A priority is to raise completion rates in line
with high NERs. The doubling of the completion rate from around 35% in 1990/1 to around 75% in 1999/2000 shows a positive trend. It needs however to be considered in the context that a significant number of children are not able to access the full five-year cycle of primary education or achieve a minimum level of basic learning. For the year 2000, the out-of-school population, which comprises children of primary age who have never been to or have not completed primary school, was estimated at around 1.5 million children (around 15%) of the 6-10 year age group. Further narrowing the gap in completion rates will require special attention to ensure improved efficiency and that all children complete a full cycle of primary education.

Achieving UPE for all requires getting hardest-to-reach children into a full cycle of primary education: Recent gains in primary school enrolment have been greatest for children in remote areas and from low income groups. This results from policies aimed at extending access to groups with known education disadvantage. Under a satellite school system, whereby primary classes operate at village level attached administratively to a main school, a majority of mountaneous and isolated villages now have local primary classes. Similarly, a policy of free distribution of textbooks to children from ethnic minority groups, where the cost of textbooks is beyond the financial means of parents, has also facilitated access.

Poverty, ethnicity, geographic location and learning ability are the main constraints to access to education. Targeted action is under way to eliminate disparities in learning opportunities. Getting the remaining 15 per cent of children into a full primary cycle is an important policy priority. It requires specific actions that address the more complex learning needs of children in disadvantaged learning situations. Such actions are much more difficult to design and to carry out than those applied so far which were sufficient to address the schooling needs of the majority of children who belong to population groups living in more normal socio-economic conditions. Programs to increase the education opportunities of hard-to-reach children are the focus of a rising number of different Ministry of Education programs, several of them donor-supported. They highlight the need to reduce user costs for the poor, the value of textbooks and learning materials in communities that have limited access to written information, the importance of the language development programs (in pre-school and early primary grades) to give minority language-speaking children a better chance in starting and completing primary education. Experience shows that a flexible approach that allows for different combinations of special interventions will promote better learning outcomes than a rigid application of inputs. The final challenge lies in securing additional resources to finance the extra costs associated with raising the quality and provision of education in remote and needy areas. Making UPE affordable for all requires the containment of user costs: A key feature of the country's recent success in universalizing primary education is the strong tradition of the state, community and parents collaborating towards the common goal of providing basic schooling. The combined efforts of state-community cost sharing arrangements and in-kind community contributions have been central to the expansion of the primary school network. However the reliance on family contributions for basic education delivery does not result in reducing major disparities in the availability and quality of education. While there is no tuition fee for primary education, in practice, parents are expected to cover other costs of essential inputs such as construction, maintenance, learning materials. These costs represent a high burden for low income families and can act as a deterrent to participation in primary school. The challenge for the state is to realize its fundamental obligations to provide affordable compulsory education for all children. The Government recognizes the need to review the issue of cost recovery and ensure that adequate mechanisms are in place to exempt poor and educationally disadvantaged families from all direct payments for primary education. Further steps will be taken to gradually move towards full public financing of primary education thus guaranteeing equity of provision of quality education for all.
QUALITY AND RELEVANCE

Moving towards effective implementation of the new primary curriculum needs strengthened teacher capacity and management support services: A new curriculum is being phased in to all primary schools on an annual basis, starting with Grade 1 in 2002. The new curriculum envisages a significant increase in the number of hours of instruction per week and new teaching methods and materials to support active learning. Introduction of the new curriculum for primary education paves the way for improving the quality of teaching and learning outcomes in coming decades. It is on track to achieve initial objectives of setting comprehensive national norms and standards. In this way, it lays the basis for achieving greater equity in learning opportunities. Effective implementation of the new curriculum requires a comprehensive set of measures of teacher training, teacher support and advisory services to ensure the fundamental shift towards an active learning approach envisaged within the reform. Current constraints include a shortage of skilled trainers, lack of teaching practice for teachers to apply new skills, low teacher pay and motivation, a shortage of classrooms and a shortage of materials. Also, current levels of remuneration do not appear conducive enough to motivate teachers to abandon the tradition of rote learning and apply radically new pedagogical approaches. Introduction of these new approaches will be particularly difficult for teachers who are inexperienced or under-qualified and are most likely to be assigned to remote areas where teaching conditions are especially harsh. Close monitoring of the implementation of the new curriculum to Grade 1 will provide useful lessons. Based on this, the challenge is to strengthen support measures to ensure increasingly effective introduction of the new curriculum to subsequent grades.

Improving the standards and professionalism of teaching personnel requires a comprehensive set of measures of improved teacher career development and working conditions: During the 1990s, the teaching force increased in size and quality. At a time of competing demand from other sectors of the fast growing economy, the Ministry of Education succeeded in reducing teacher shortages, maintaining a pupil-teacher ratio conducive for effective learning, as well as improving the formal qualifications and remuneration of teachers. Almost each class now has its own teacher, with shortages confined to remote and mountainous areas. The national average pupil-teacher ratio is around 30:1 in the early primary grades, but there are significant regional variations. The ratio is substantially higher in urban areas with a high population density and lower in remote, sparsely populated areas. More than two thirds of all teachers are at the level of national standard teaching qualifications. The challenge is to further and continuously strengthen the competencies of teachers in order to enable them to take a leading role in modernizing the teaching-learning process. Moving towards output-oriented teaching-learning approaches and performance-based assessment of learning achievements signals the new orientation for the future professionalization of the teaching force. At present, teaching staff are the product of the existing system under which teacher training tends to be delivered by training institutes that lack familiarity with the working needs of primary schools and active learning methodology envisaged by the new curriculum. Moreover, low utilization of teacher time, with an average working week of around 18 hours of class contact time (compared to about 25 hours in most other educationally advanced countries) reduces the impact of curriculum reform. Key challenges for Ministry of Education and the provinces are to introduce a large-scale program of appropriate in-service training for the essentially young teaching force and to find a working mechanism to increase both teacher working hours and remuneration. Ensuring a minimum level of quality in all schools and equity of learning requires extra resources and better targeting of resources to areas where the need is greatest: The two challenges are to improve the overall quality of learning and to reduce variations in quality between urban, rural and remote areas. A priority is to increase the quantity of instruction time per pupil which is significantly lower than the international standard of 900 hours. It averages around 700 hours per year nationally and is even lower in ethnic minority and remote areas. Increasing instruction time goes hand-in-hand with the introduction of full-day schooling. A second priority is to introduce a set of measures which ensure all schools can attain a minimum level of quality. Reliance on parental contributions to ensure basic school functioning has contributed to considerable variation in the supply and quality of both...
physical facilities and learning materials. The result is a widening gap between urban and rural areas, with poorest learning conditions concentrated in remote satellite schools.

Quality improvement requires a comprehensive and adaptable set of measures that build on existing initiatives to improve learning outcomes. Above all, quality improvement requires substantial, additional public resources.

**MANAGEMENT**

Providing quality primary education for all requires increased and sustained financing: During the 1990s decade, the primary sector benefited most from increases in public funding for education. A major achievement was the doubling of the public budget for primary education to enable the drive for UPE. At the same time, the country built up good relations with donors, reflected in the growing number of donor-supported projects in the primary sector from the mid 1990s onwards. The future orientation of consolidation of quantitative gains and of quality improvement places new demands on the system. Substantial additional resources will be required in the initial years to cover the costs of completing UPE by bringing it up to international standards and to compensate for the impact of user cost reductions on resource availability in the primary sector. Competing resource demands for universal lower secondary education call for a coherent financing policy for a nine-year basic education cycle to be based on greater efficiency of resource use, revised allocation formula and better targeting, and effective use of donor funds to cover initial high investment costs.

Fully operationalizing decentralized education management requires strengthened management functions and capacity: Decentralization of primary school management functions and tasks to provinces and lower levels paves the way for more flexible and locally responsive delivery of primary education. Decentralization procedures are currently under preparation to allow new opportunities to develop locally adapted primary education development plans. This needs to be backed up by appropriate training and support mechanisms to equip managers with new skills adapted to changing tasks.

**2.2 Principle Issues for Primary Education**

The challenge for the EFA decade 2003-2015 is to build on the substantial progress already achieved towards universal primary education by transforming quantity into quality and by securing equity of access for children in disadvantaged learning situations. This requires effectively addressing eight principle issues.

**ACCESS**

1. The gains of UPE have yet to extend to all children. Low enrolment and completion rates are concentrated amongst certain groups: children in remote and mountainous areas, children from low income families and children from other disadvantaged learning situations. This contributes to uneven learning opportunities.

2. The direct costs to parents of primary education are beyond the financial means of poor families and deter participation.
QUALITY AND RELEVANCE

3. Not all children benefit from a minimum level of quality education. Reliance on community contributions to deliver primary education has lead to a widening gap in learning opportunities and learning achievement.

4. The process of curriculum reform may take time, continuous assessment and adjustments to deliver benefits in the form of improved quality and learning outcomes.

5. Teachers lack appropriate in-service and career development opportunities. Teacher time is under-utilized. Remuneration is low compared to international standards and to salary levels of other sectors of the economy.

6. The quality of learning is low, not only in remote and mountainous areas and satellite schools. This is associated with inadequate training of teachers, a shortage of basic learning materials and low pupil instruction time.

MANAGEMENT

7. Additional resources will be required to achieve quality objectives and ensure affordable and equitable provision of primary education for all.

8. Education management systems at all levels (central, provincial, district, school) are inadequate to implement education reforms. Managers lack capacity and training to effectively take up new responsibilities transferred under decentralization.
Annex II: Action Programmes
Annex II:  EFA ACTION PROGRAMMES FOR THE PRIMARY EDUCATION SUB-SECTOR

Note:
This Annex presents an example of Action Programmes in a medium-term education plan. It is based on the National EFA Action Plan 2003-2015 of Viet Nam.

ACCESS

OBJECTIVES: (1) To provide access to affordable and quality Primary Education for all children, especially from disadvantaged groups and for girls;

(2) To ensure all children complete the full cycle of all grades of Primary Education;

Action Programme 1.1: Provision of an affordable school place for all children in Primary school age

Action Programme 1.2: Programme to ensure that all children complete the full Primary cycle

Action Programme 1.3: Special programme to extend full access to Primary Education to disadvantaged children and excluded children (street children, children of migrant families, etc.)

   a) Implementation of a priority programme for selected provinces

   b) Extension of the programme to all provinces

Action Programme 1.4: Provision of full Primary Education to out-of-school youth

QUALITY & RELEVANCE

OBJECTIVE: (3) To ensure the transition from quantitative development to quality Primary Education of a high level of learning achievement, starting with a fundamental school quality level in all Primary schools;


Action Programme 1.6: Primary teacher development and training

   a) Implementation of Primary teacher development programme in selected priority provinces

   b) Extension of the Primary teacher development programme to all provinces

Action Programme 1.7: Assessment of student learning achievement
Action Programme 1.8: Improvement of the quality of the learning environment and learning outcomes

Action Programme 1.9: Continuous improvement of the Primary curriculum (2008-2015)

MANAGEMENT

OBJECTIVES: (4) To strengthen management at central, provincial, district, and school level to improve the day-to-day functioning of Primary Education;

(5) To ensure comprehensive sector development and reform, especially the decentralization of Sector management, the creation of a continuous nine-year basic education cycle, and the transition from quantity to quality;

Action Programme 1.10: Policy setting and implementation at national level

Action Programme 1.11: Capacity building for planning and decentralized management at provincial, district and school levels

Action Programme 1.12: Mechanisms and capacity building for efficient resource utilization and affordable cost sharing

Action Programme 1.13: Mechanisms and capacity building for information-based decision-making approaches at all administrative levels
The Action Programmes are composed of specific **Programme Components** as follows:

**EFA ACTION PROGRAMMES AND PROGRAMME COMPONENTS**

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<td>1.4 Provision of full Primary Education to out-of-school youth</td>
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<td>1.5.1 Preparation, testing and introduction of the new curriculum in all Grades</td>
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<td>1.5.2 Production and distribution of new textbooks and teaching and learning materials</td>
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<td>1.5.4 Development of IT component within the curriculum and related teacher training</td>
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<td>1.5.5 Provision of advisory support for the effective implementation of the new curriculum in schools</td>
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<td>(a) Implementation of Primary teacher development programme in selected priority provinces</td>
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<td>(b) Extension of the Primary teacher development programme to all provinces</td>
<td>1.6.2 Development of teacher professional standards (teacher charter)</td>
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<td>1.6.3 Establishment of a system of pedagogical support and quality assurance for school improvement</td>
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<td>1.6.4 Training of school principals in school management and in pedagogical support to teachers</td>
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<td>1.6.5 Revision of the terms of service for teachers and principals</td>
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<td>1.6.6 Promotion of teacher recruitment from disadvantaged areas (see also Programme Component 1.3.2)</td>
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| 1.7  Assessment of student learning achievement | 1.7.1 Design and piloting of a new approach to assessment of student learning achievement  
1.7.2 Design of training packages for Primary teachers to implement the new assessment approach  
1.7.3 Implementation of the new assessment approach  
1.7.4 Establishment of advisory services  
1.7.5 Monitoring and evaluation of the new student assessment system |
| 1.8  Improvement of the quality of the learning environment and learning outcomes | 1.8.1 Significant improvement of learning opportunities by increasing pupil-class hours to international levels (900 hours per year for Grades 1-3 and 1,000 hours for all other Grades)  
1.8.2 Replacement of temporary classrooms by permanent structures  
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| 1.9  Continuous improvement of the Primary curriculum (2008-2015) | 1.9.1 Preparation and implementation of continuous assessment of the curriculum  
1.9.2 Continuous adaptation of the Primary school curriculum, including responsiveness to the local context  
1.9.3 Continuous adaptation of textbooks and other pedagogical materials  
1.9.4 Continuous adaptation of teacher training and pedagogical support systems  
1.9.5 Development of IT component within the curriculum and related teacher training  
1.9.6 Preparation for a nine-year basic education cycle |
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| 1.10 Policy setting and implementation at national levels | 1.10.1 Development of information-based policy setting  
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1.10.3 Preparation and implementation of measures to decentralize management of Primary Education  
1.10.4 Preparation of a regulatory framework to support the transition from quantity to quality Primary Education  
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1.10.6 Preparation of measures for the development of private Primary schools  
1.10.7 Coordination and monitoring of implementation for special development programs and projects |
| 1.11 Capacity building for planning and decentralized management at provincial, district and school levels | 1.11.1 Development of training and support systems adapted to the specific needs at each level  
1.11.2 Design and implementation of training and capacity building programs in planning, management, administration and pedagogical support  
1.11.3 Setting up supervisory and quality control units at provincial level to assist provincial and district level education officers and schools  
1.11.4 Monitoring and evaluation of the effectiveness of decentralized management |
| 1.12 Mechanisms and capacity building for efficient resource utilization and affordable cost sharing | 1.12.1 Review and revision of cost sharing policies and mechanisms (see also Programme Components 1.1.6, 1.3.6 and 1.3.7)  
1.12.2 Improvement of budget allocation systems  
1.12.3 Improvement of personnel management systems  
1.12.4 Review and revision of education standards  
1.12.5 Setting up a management advisory unit (at the Ministry of Education) to assist provincial and district level education officers and schools |
| 1.13 Mechanisms and capacity building for information-based decision-making approaches at all administrative levels | 1.13.1 Design and implementation of comprehensive, consistent and effective national education management information systems (school-based EMIS for central, provincial, district and school management) |
Annex III: The ANPRO-Model
Annex III includes selected Sheets of the Template ANPRO-Model. They provide an overview of

(i) the kind of analysis and projections data which the ANPRO-Model produces and
(ii) the way in which these data are presented in the Model.

ANNEX III contains the following Model Sheets:

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The complete ANPRO Model is contained in the CD-ROM of the Handbook.
UNESCO
ASIA & PACIFIC REGIONAL BUREAU for EDUCATION

Implementing the National EFA Plan through Decentralized Education

ANALYSIS and PROJECTION MODEL (ANPRO-MODEL)

TEMPLATE ANPRO - Model

The filename is: FINAL Template ANPRO - Model (26May,2005).xls

For details on how to use the TEMPLATE ANPRO-Model see HANDBOOK for Decentralized Education Planning, Section 3 and Section 4

The ANPRO-Model reflects the practical experience which UNESCO has gained in working closely with many countries in the areas of education sector policy setting and implementation planning, in particular, in the preparation of EFA Plans and their implementation. The Model was conceptualized by Klaus Bahr and designed by Farid Abillama and Nyan Myint. It is based on the model contained in the EFA Planning Guide which was developed by Klaus Bahr and Nyan Myint and published by UNESCO Bangkok, 2001.
### Analysis and Projection (ANPRO) Model

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<td><strong>NON FORMAL EDUCATION Sub-sector</strong></td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Non-Formal Education - List of independent and dependent variables</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Non-Formal Education - Summary</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td>Non-Formal Education - Pupil sub-model</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>Non-Formal Education - Expenditure sub-model</td>
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<tr>
<td>11</td>
<td><strong>GENDER SCENARIO</strong></td>
<td>70</td>
</tr>
<tr>
<td></td>
<td>Girls only: Pre-School Education - Pupil sub-model</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>Girls only: Primary Education - Pupil sub-model</td>
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</tr>
<tr>
<td></td>
<td>Girls only: Secondary Education - Pupil sub-model</td>
<td>73</td>
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</table>
The purpose of this overview of targets is to facilitate discussion among stakeholders during the target setting phase of the planning process.

This Sheet provides an overview of the principal targets set for each sub-sector. The targets shown in this Sheet come from the different sub-sector models. The figures in this Sheet cannot be changed. Any change of a target figure has to be undertaken in the corresponding subsector model.
## Model Sheet 3: Summary of Principal Targets

### Pre-School (ECE)

<table>
<thead>
<tr>
<th>Item Base year 2004/05</th>
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<th>2010/11</th>
<th>2015/16</th>
</tr>
</thead>
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<tr>
<td>1.1 Age 3</td>
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<td>4.5%</td>
<td>4.5%</td>
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<tr>
<td>1.2 Age 4</td>
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<td>8.9%</td>
<td>8.9%</td>
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<tr>
<td>1.3 Age 5</td>
<td>14.8%</td>
<td>22.6%</td>
<td>61.3%</td>
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<td>2.1 Age 3</td>
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<td>9.0%</td>
<td>42.0%</td>
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<td>2.2 Age 4</td>
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<td>9.0%</td>
<td>42.0%</td>
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<tr>
<td>2.3 Age 5</td>
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<td>5.1%</td>
<td>13.4%</td>
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<td>3.3 Temporary teachers</td>
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<td>0.43</td>
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<td>1.30</td>
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### In-service Teacher Training

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<td>100.0%</td>
</tr>
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<td>5.2 Average number of training days per year</td>
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<td>30</td>
<td>30</td>
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<tr>
<td>5.3 Average training expenditure / day (US $)</td>
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### classroom Construction and other Capital expenditure

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<td>8.1 Classes per Classroom</td>
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<td>1.18</td>
<td>1.10</td>
</tr>
<tr>
<td>8.2 Classrooms to be replaced: % of total</td>
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<td>4.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>8.3 Classrooms to repair: % of total</td>
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<td>5.0%</td>
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### Classrooms to replace: % of total

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<th>2015/16</th>
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<tbody>
<tr>
<td>8.4 Outdoor equipment (000 US$)</td>
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<td>15</td>
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### Primary

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<td>1.2 % entrants into Public schools</td>
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<td>99.7%</td>
<td>98.8%</td>
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<tr>
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<td>97.5%</td>
<td>99.3%</td>
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<td>94.7%</td>
<td>98.2%</td>
</tr>
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<td>91.1%</td>
<td>97.5%</td>
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<td>90.6%</td>
<td>97.5%</td>
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<td>89.4%</td>
<td>97.5%</td>
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<td>80.3%</td>
<td>92.5%</td>
</tr>
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<td>0.5%</td>
</tr>
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<td>4.2%</td>
<td>1.0%</td>
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<tr>
<td>2.9 Grade 3</td>
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<td>1.0%</td>
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<td>2.16 Grade 4</td>
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<td>5.1%</td>
<td>30.0%</td>
</tr>
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<td>30.0%</td>
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### Principal Targets

#### 3 Pupil/Class Ratio

<table>
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<th>2015/16</th>
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</thead>
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<td>34.9</td>
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<td>2</td>
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<td>40.1</td>
<td>35.1</td>
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<td>4</td>
<td>40.3</td>
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</table>

#### 4 Teacher/Class Ratio and Non-teaching Staff per School

<table>
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<tr>
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<th>2015/16</th>
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<tr>
<td>1.1</td>
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<td>1.300</td>
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<td>1.5</td>
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#### 5 Pupil and School Related Expenditure

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<td>50.0%</td>
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<td>100.0%</td>
<td>100.0%</td>
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#### 6 In-service Teacher Training

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<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<td>30</td>
<td>30</td>
</tr>
<tr>
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<td>1.4</td>
<td>4</td>
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#### 7 Special Programmes (in '000 US$)

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<td>1.4</td>
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<td>0</td>
<td>0</td>
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<td>1.5</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>1.6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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#### 8 Classroom Construction and Other Capital Expenditure

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#### 9 Transition Rate from Primary

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<td>96.0%</td>
<td>96.0%</td>
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<td>91.7%</td>
<td>92.4%</td>
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<td>96.0%</td>
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<td>7.6</td>
<td>91.7%</td>
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#### 10 Repetition Rates (Public Schools)

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<th>2010/11</th>
<th>2015/16</th>
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<tr>
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<td>5.1%</td>
<td>2.0%</td>
<td>2.0%</td>
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<tr>
<td>7.2</td>
<td>4.4%</td>
<td>4.0%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>7.3</td>
<td>3.7%</td>
<td>3.4%</td>
<td>2.0%</td>
<td>2.0%</td>
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<td>7.4</td>
<td>4.2%</td>
<td>3.8%</td>
<td>2.0%</td>
<td>2.0%</td>
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<tr>
<td>7.5</td>
<td>3.8%</td>
<td>3.3%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>7.6</td>
<td>6.7%</td>
<td>5.9%</td>
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#### 11 Re-integration Rates to Public Schools (as percentage of previous year drop-out)

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<th>2010/11</th>
<th>2015/16</th>
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<td>5.7%</td>
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<td>50.0%</td>
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<tr>
<td>7.2</td>
<td>4.3%</td>
<td>5.2%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>7.3</td>
<td>4.7%</td>
<td>5.2%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>7.4</td>
<td>3.6%</td>
<td>5.1%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>7.5</td>
<td>3.2%</td>
<td>5.0%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>7.6</td>
<td>3.8%</td>
<td>5.0%</td>
<td>30.0%</td>
<td>50.0%</td>
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#### 12 Orientation from Grade 9 to Professional Secondary and Teacher Training

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<th>2010/11</th>
<th>2015/16</th>
</tr>
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</tr>
<tr>
<td>7.2</td>
<td>0.2%</td>
<td>0.2%</td>
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### Principal Targets

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<th>2006/07</th>
<th>2010/11</th>
<th>2015/16</th>
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<tbody>
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</tr>
<tr>
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<td>39.7</td>
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<td>30.0</td>
</tr>
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<td>3.5 Grade 11</td>
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<td>36.7</td>
<td>36.1</td>
<td>33.1</td>
<td>30.0</td>
</tr>
<tr>
<td>3.7 Grade 7</td>
<td>5.7%</td>
<td>5.1%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>3.8 Grade 8</td>
<td>4.4%</td>
<td>4.0%</td>
<td>2.0%</td>
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</tr>
<tr>
<td>3.9 Grade 9</td>
<td>4.7%</td>
<td>4.3%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>3.10 Grade 10</td>
<td>4.2%</td>
<td>3.8%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>3.11 Grade 11</td>
<td>4.8%</td>
<td>4.5%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>3.12 Grade 12</td>
<td>6.7%</td>
<td>5.9%</td>
<td>2.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td><strong>2 (C) Re-integration Rates to Public Schools (as percentage of previous year drop-out)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2.13 Grade 7</td>
<td>5.1%</td>
<td>5.7%</td>
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<td>2.14 Grade 8</td>
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<td>2.15 Grade 9</td>
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<tr>
<td>2.16 Grade 10</td>
<td>3.6%</td>
<td>5.1%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>2.17 Grade 11</td>
<td>3.2%</td>
<td>5.0%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td>2.18 Grade 12</td>
<td>3.8%</td>
<td>5.0%</td>
<td>30.0%</td>
<td>50.0%</td>
</tr>
<tr>
<td><strong>2 (D) Orientation from Grade 9 to Professional Secondary and Teacher Training</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.19 % of Grade-9 graduates oriented to Professional Secondary</td>
<td>0.2%</td>
<td>0.3%</td>
<td>0.8%</td>
<td>1.4%</td>
</tr>
<tr>
<td>2.20 % of Grade-9 graduates oriented to Teacher Training</td>
<td>0.1%</td>
<td>0.2%</td>
<td>0.2%</td>
<td>0.2%</td>
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<tr>
<td><strong>3 Pupil/Class Ratio</strong></td>
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<td>3.1 Grade 7</td>
<td>40.7</td>
<td>39.7</td>
<td>34.9</td>
<td>30.0</td>
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<tr>
<td>3.2 Grade 8</td>
<td>41.1</td>
<td>40.1</td>
<td>35.1</td>
<td>30.0</td>
</tr>
<tr>
<td>3.3 Grade 9</td>
<td>40.5</td>
<td>39.5</td>
<td>34.7</td>
<td>30.0</td>
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<tr>
<td>3.4 Grade 10</td>
<td>40.2</td>
<td>39.3</td>
<td>34.7</td>
<td>30.0</td>
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<td>3.5 Grade 11</td>
<td>38.0</td>
<td>37.3</td>
<td>33.6</td>
<td>30.0</td>
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<tr>
<td>3.6 Grade 12</td>
<td>36.7</td>
<td>36.1</td>
<td>33.1</td>
<td>30.0</td>
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<tr>
<td><strong>4 Teacher/Class Ratio and Non-Teaching Staff per School</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4.1 Total Teachers (standard &amp; non-standard) per class</td>
<td>1.82</td>
<td>1.80</td>
<td>1.80</td>
<td>1.80</td>
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<tr>
<td>4.2 Standard Teacher (qualified &amp; trained) per class</td>
<td>1.64</td>
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<td>1.80</td>
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<td>4.3 Non-standard Teachers per class</td>
<td>0.18</td>
<td>0.13</td>
<td>0.00</td>
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<td>4.4 Principals per School</td>
<td>3.32</td>
<td>3.36</td>
<td>1.58</td>
<td>1.80</td>
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<tr>
<td>4.5 Other Non-Teaching Staff per School</td>
<td>8.98</td>
<td>9.23</td>
<td>10.61</td>
<td>12.00</td>
</tr>
<tr>
<td><strong>5 Pupil and School Related Expenditure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Provision of Textbooks: % pupils receiving textbooks</td>
<td>8.0%</td>
<td>16.4%</td>
<td>58.2%</td>
<td>100.0%</td>
</tr>
<tr>
<td>5.2 Provision of Teacher’s Guide: % teachers receiving guides</td>
<td>50.0%</td>
<td>58.3%</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td>5.3 Pupil-related expenditure / pupil (US$)</td>
<td>10.00</td>
<td>10.00</td>
<td>15.00</td>
<td>15.00</td>
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<tr>
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<td>1,227.00</td>
<td>1,227.00</td>
<td>1,227.00</td>
<td>1,500.00</td>
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<tr>
<td><strong>6 In-service Teacher Training</strong></td>
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<td></td>
</tr>
<tr>
<td>6.1 % of teachers trained</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>6.2 Average number of training days per year</td>
<td>3</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>6.3 % of teachers trained</td>
<td>13.5%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
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<tr>
<td>6.4 Average number of training days per year</td>
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<td>30</td>
<td>30</td>
<td>30</td>
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<td><strong>7 Special Programmes (in ‘000 US$)</strong></td>
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<td></td>
<td></td>
<td></td>
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<td>7.1 Programme 1</td>
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<td>1,700</td>
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<td>4,800</td>
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<tr>
<td>7.3 Programme 3</td>
<td>400</td>
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<td>0</td>
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<td>7.4 Programme 4</td>
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<td>200</td>
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<td>7.5 Programme 5</td>
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<td>0</td>
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<td>7.6 Programme 6</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>7.7 Programme 7</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>7.8 Programme 8</td>
<td>0</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>7.9 Programme 9</td>
<td>0</td>
<td>0</td>
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<tr>
<td><strong>8 Classroom Construction and other Capital Expenditure</strong></td>
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<td></td>
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<tr>
<td>8.1 Classroom in double-shift</td>
<td>1,201</td>
<td>1,092</td>
<td>550</td>
<td>0</td>
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<td>8.2 Number of classrooms to replace per year</td>
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<td>250</td>
<td>250</td>
<td>0</td>
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<tr>
<td>8.3 Classrooms to repair</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
<td>10.0%</td>
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<td>Item</td>
<td>Base year 2004/05</td>
<td>2005/06</td>
<td>2010/11</td>
<td>2015/16</td>
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<td>------------------</td>
<td>---------</td>
<td>---------</td>
<td>---------</td>
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<tr>
<td><strong>8 (B) Computer Laboratories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.4 To build</td>
<td>32</td>
<td>100</td>
<td>67</td>
<td>60</td>
</tr>
<tr>
<td>8.5 To upgrade</td>
<td>32</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>8 (C) School Libraries</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.6 To build</td>
<td>24</td>
<td>84</td>
<td>67</td>
<td>60</td>
</tr>
<tr>
<td>8.7 To upgrade</td>
<td>17</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td><strong>8 (D) Science Laboratories</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.8 To build</td>
<td>11</td>
<td>80</td>
<td>67</td>
<td>60</td>
</tr>
<tr>
<td>8.9 To upgrade</td>
<td>22</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

**Professional Secondary**

1 Three-Year Courses for Grade 9 Secondary Graduates

1.1 Progression rate to year 2 | 78.2% | 81.0% | 95.0% | 99.0% |
1.2 Progression rate to year 3 | 82.7% | 84.8% | 95.0% | 99.0% |
1.3 Success at the end of year 3 | 92.9% | 95.0% | 95.0% | 99.0% |

2 Two-Year Courses for Secondary Graduates (Grade 12)

2.1 Intake into year 1 | 0.2% | 0.2% | 0.2% | 0.2% |
2.2 Progression rate to year 2 | 82.9% | 84.9% | 95.0% | 99.0% |
2.3 Success at the end of year 2 | 93.5% | 97.1% | 97.1% | 99.0% |

3 Three-Year Courses for Secondary Graduates (Grade 12)

3.1 Intake into year 1 | 1.2% | 1.2% | 1.2% | 1.2% |
3.2 Progression rate to year 2 | 93.3% | 95.6% | 95.0% | 99.0% |
3.3 Progression rate to year 3 | 97.1% | 97.1% | 97.1% | 99.0% |
3.4 Success at the end of year 3 | 92.5% | 95.6% | 95.6% | 99.0% |

4 Short Courses (less than one year)

4.1 Growth rate of intake | 2.0% | 2.0% | 2.0% |
4.2 Success rate | 79.1% | 80.3% | 95.0% | 99.0% |

**Pre-Service Teacher Training**

1 Three-Year Courses for Grade 9 Secondary Graduates

1.1 Progression rate to year 2 | 82.3% | 84.4% | 95.0% | 99.0% |
1.2 Progression rate to year 3 | 91.0% | 91.7% | 95.0% | 99.0% |
1.3 Success at the end of year 3 | 95.2% | 95.5% | 95.5% |

2 Two-Year Courses for Secondary Graduates (grade 12 level)

2.1 Intake into year 1 | 3,710 | 3,484 | 2,475 | 2,550 |
2.2 Progression rate to year 2 | 82.9% | 84.9% | 95.0% | 99.0% |
2.3 Success at the end of year 2 | 89.2% | 92.9% | 97.5% | 97.5% |

3 Three-Year Courses for Secondary Graduates (grade 12 level)

3.1 Intake into year 1 | 2,388 | 2,687 | 3,481 | 3,500 |
3.2 Progression rate to year 2 | 83.7% | 85.6% | 95.0% | 95.0% |
3.3 Progression rate to year 3 | 84.2% | 86.0% | 95.0% | 95.0% |
3.4 Success at the end of year 3 | 91.8% | 92.9% | 97.5% | 97.5% |

**Non-Formal and Continuing Education**

1 Participation Rates to NFE Programmes

1.1 Primary equivalent Programmes (normal age 6 to 11) | 7.4% | 10.0% | 30.0% | 50.0% |
1.2 Secondary (grades 7 to 10) equivalent Programmes (normal age 12 to 15) | 2.2% | 6.7% | 30.0% | 50.0% |
1.3 Adult literacy Programmes (aged 15-35) | 6.6% | 0.9% | 2.5% |

2 Producing and distributing NFE Materials

2.1 Number of districts supported per year | 3 | 5 | 2 | 2 |

3 New District Learning Centers

3.1 Number of new District Learning Centers to be set up per year | 0 | 2 | 2 | 2 |

**Overall Expenditure**

1 Education Support Facilities

1.1 Teacher Training Resource Centers to build | 0 | 2 | 2 | 0 |
1.2 IT Centers and Book Stores to build | 0 | 1 | 1 | 0 |
1.3 Sports Halls to Build | 0 | 2 | 1 | 0 |

2 Province Administrative Staff

2.1 Growth rate | 1.0% | 1.0% | 0.0% |
This Sheet contains a summary of the PUBLIC Expenditure projections for the sub-sectors:

- Pre-school (ECCE)
- Primary Education
- Secondary Education
- Professional Secondary Education
- Non-Formal Education
- Pre-service Teacher Training

This Sheet also shows the recurrent expenditure needed to manage education at decentralized level. It includes staff costs (salaries and related costs) and operating expenditure of provincial level education offices. The expenditure of the Ministry of Education is not included in the ANPRO-Model.

Note: This Expenditure Summary shows only Public (i.e. government) Expenditure. Direct contributions from parents or other non-public sources are not included.
### Summary of Expenditure Projections

#### Model Sheet 4: Summary of Expenditure Projections

**SUMMARY OF PUBLIC EXPENDITURE FOR ALL SUB-SECTOR**

Costs in this summary are expressed in million US dollars (unless otherwise specified)

All costs are in 2004 constant prices

<table>
<thead>
<tr>
<th>Recurrent Expenditure</th>
<th>Salaries and Allowances</th>
<th>School- Spec. Progr. Grants to Other Recurrent Total (Recurrent + Capital) Per Pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total Expenditure Expenditure Expenditure Expenditure Expenditure Expenditure (US$)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre-schools Expenditure Expenditure Expenditure Expenditure Expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Expenditure (2)</td>
</tr>
<tr>
<td>14,801</td>
<td>3,204</td>
<td>2,700</td>
</tr>
<tr>
<td>17,458</td>
<td>3,570</td>
<td>2,500</td>
</tr>
<tr>
<td>19,551</td>
<td>6,643</td>
<td>3,900</td>
</tr>
<tr>
<td>22,157</td>
<td>9,076</td>
<td>5,700</td>
</tr>
<tr>
<td>27,000</td>
<td>11,567</td>
<td>7,500</td>
</tr>
<tr>
<td>31,498</td>
<td>13,758</td>
<td>7,500</td>
</tr>
<tr>
<td>36,626</td>
<td>16,479</td>
<td>7,500</td>
</tr>
<tr>
<td>41,755</td>
<td>18,271</td>
<td>7,500</td>
</tr>
<tr>
<td>46,501</td>
<td>21,360</td>
<td>7,500</td>
</tr>
<tr>
<td>51,499</td>
<td>24,208</td>
<td>7,500</td>
</tr>
<tr>
<td>56,490</td>
<td>27,408</td>
<td>7,500</td>
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</table>

<table>
<thead>
<tr>
<th>Recurrent Expenditure</th>
<th>Salaries and Allowances</th>
<th>School- Operating Expenditure Expenditure Expenditure Expenditure Expenditure Expenditure (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Spec. Progr. and Project Total (Recurrent + Capital) Per Pupil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expenditure Expenditure Expenditure Expenditure Expenditure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1) Expenditure (2)</td>
</tr>
<tr>
<td>14,801</td>
<td>3,204</td>
<td>2,700</td>
</tr>
<tr>
<td>17,458</td>
<td>3,570</td>
<td>2,500</td>
</tr>
<tr>
<td>19,551</td>
<td>6,643</td>
<td>3,900</td>
</tr>
<tr>
<td>22,157</td>
<td>9,076</td>
<td>5,700</td>
</tr>
<tr>
<td>27,000</td>
<td>11,567</td>
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<td>31,498</td>
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<tr>
<td>36,626</td>
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<td>41,755</td>
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<td>7,500</td>
</tr>
<tr>
<td>46,501</td>
<td>21,360</td>
<td>7,500</td>
</tr>
<tr>
<td>51,499</td>
<td>24,208</td>
<td>7,500</td>
</tr>
<tr>
<td>56,490</td>
<td>27,408</td>
<td>7,500</td>
</tr>
</tbody>
</table>

For details, see Handbook, Chapter 5, Section 8

(1) Pupil-related (including textbooks) and school-related expenditure and teacher training

(2) Grants to the private pre-schools are not included in the per-pupil expenditure

---

**Recurrent Expenditure**

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<th>Total (Recurrent + Capital)</th>
<th>Per Pupil</th>
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<tr>
<td>38,094</td>
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<td>43,567</td>
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<tr>
<td>48,767</td>
<td>141.11</td>
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<tr>
<td>55,533</td>
<td>150.62</td>
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<tr>
<td>63,010</td>
<td>159.02</td>
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<td>71,113</td>
<td>167.20</td>
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<tr>
<td>80,527</td>
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<tr>
<td>92,468</td>
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<tr>
<td>97,767</td>
<td>189.08</td>
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<td>106,929</td>
<td>195.88</td>
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## Model Sheet 4: Summary of Expenditure Projections

### Recurrent Expenditure

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<th>Total Expenditure</th>
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<tr>
<td>0.470</td>
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</tr>
<tr>
<td>0.524</td>
<td>0.100</td>
<td>0.624</td>
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<tr>
<td>0.588</td>
<td>0.154</td>
<td>0.742</td>
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<tr>
<td>0.648</td>
<td>0.155</td>
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<tr>
<td>0.648</td>
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<tr>
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<tr>
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### Recurrent Expenditure NFE

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### Teacher Training Centers and Other Education Facilities

<table>
<thead>
<tr>
<th>Number of Centers</th>
<th>Expenditure per Center (in US$)</th>
<th>Total Expenditure (in million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>5.0</td>
<td>0.030</td>
</tr>
<tr>
<td>8</td>
<td>5.0</td>
<td>0.040</td>
</tr>
<tr>
<td>10</td>
<td>5.0</td>
<td>0.050</td>
</tr>
<tr>
<td>12</td>
<td>5.0</td>
<td>0.060</td>
</tr>
<tr>
<td>14</td>
<td>5.0</td>
<td>0.080</td>
</tr>
<tr>
<td>16</td>
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<td>18</td>
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### New Teacher Training Centers and Other Education Support Facilities

<table>
<thead>
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<th>Expenditure per Center (in US$)</th>
<th>Total Expenditure (in million $)</th>
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</thead>
<tbody>
<tr>
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<td>5.0</td>
<td>0.030</td>
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<td>5.0</td>
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<tr>
<td>10</td>
<td>5.0</td>
<td>0.050</td>
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<tr>
<td>12</td>
<td>5.0</td>
<td>0.060</td>
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<tr>
<td>14</td>
<td>5.0</td>
<td>0.080</td>
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<tr>
<td>16</td>
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### Salary of Provincial Administrative Staff and Non-Salary Recurrent Expenditure

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<tr>
<th>Staff Growth</th>
<th>Total Staff</th>
<th>Salary Growth</th>
<th>Avg. Sal. ($)*</th>
<th>Total Salary</th>
<th>Non-Salary Expenditure</th>
<th>Total Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>12.289</td>
<td>21%</td>
<td>134.74</td>
<td>4,410</td>
<td>9,140</td>
<td>8,384</td>
</tr>
<tr>
<td>10%</td>
<td>12.289</td>
<td>21%</td>
<td>134.74</td>
<td>4,410</td>
<td>9,140</td>
<td>8,384</td>
</tr>
<tr>
<td>10%</td>
<td>12.289</td>
<td>21%</td>
<td>134.74</td>
<td>4,410</td>
<td>9,140</td>
<td>8,384</td>
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</table>
### Model Sheet 4: Summary of Expenditure Projections

#### Pre-Teacher Professional Education

<table>
<thead>
<tr>
<th>Pre-School</th>
<th>Primary</th>
<th>Secondary</th>
<th>Teacher Training</th>
<th>Professional Education</th>
<th>NFE</th>
<th>Facilities*</th>
<th>Total Support</th>
<th>Total Recurrent</th>
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<tr>
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<td>1,924</td>
<td>8,129</td>
<td>57,283</td>
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<tr>
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<td>32,582</td>
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<td>1,816</td>
<td>6,328</td>
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<th>Secondary</th>
<th>Teacher Training</th>
<th>Professional Education</th>
<th>NFE</th>
<th>Facilities*</th>
<th>Capital</th>
<th>Total Growth</th>
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<td>0,000</td>
<td>25,598</td>
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<table>
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<th>Recurrent Expenditure</th>
<th>Growth Rate</th>
<th>Capital Expenditure</th>
<th>Growth Rate</th>
<th>Total Expenditure</th>
<th>Growth Rate</th>
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<td>12,885</td>
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<tr>
<td>91,961</td>
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<td>100,983</td>
<td>14.9%</td>
<td>118,324</td>
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<tr>
<td>101,840</td>
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<td>113,630</td>
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<tr>
<td>115,912</td>
<td>11,49%</td>
<td>127,351</td>
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<td>143,012</td>
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</tr>
<tr>
<td>126,246</td>
<td>9,5%</td>
<td>136,806</td>
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<td>154,256</td>
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<tr>
<td>144,654</td>
<td>10,1%</td>
<td>154,810</td>
<td>27.7%</td>
<td>172,413</td>
<td>11.4%</td>
</tr>
<tr>
<td>156,035</td>
<td>8,5%</td>
<td>174,350</td>
<td>17.3%</td>
<td>186,865</td>
<td>9.5%</td>
</tr>
<tr>
<td>165,794</td>
<td>7,0%</td>
<td>183,854</td>
<td>10.2%</td>
<td>200,148</td>
<td>7.6%</td>
</tr>
<tr>
<td>179,414</td>
<td>8,9%</td>
<td>208,328</td>
<td>25.2%</td>
<td>235,640</td>
<td>8.6%</td>
</tr>
<tr>
<td>195,663</td>
<td>8,7%</td>
<td>224,426</td>
<td>35.3%</td>
<td>260,086</td>
<td>7.8%</td>
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<tr>
<td>220,054</td>
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<td>252,508</td>
<td>23.1%</td>
<td>275,553</td>
<td>11.3%</td>
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</table>
Model Sheet - 6: Primary Education Sub-sector Model

Projection of the functioning of Primary education until 2015/16
based on the situation in 2004/05

PRIMARY EDUCATION

Underlying assumptions:
Primary Education is overwhelmingly public with a small emerging private subsector.

Objectives:
A. To continue providing the necessary resources for the proper functioning of primary education.

B. Further developing primary education with the following objectives:
   I. Access to affordable, quality primary education for all children;
   II. All children complete full 6-Grade cycle of primary education (UPE);
   III. High level of quality and of learning achievements;
   IV. Strengthened management at primary level.

Targets to be reached during the plan period in order to attain the objectives:
1. Repetition rate reduced to 0.5% for Grade 1, 1% for Grades 2 to 5 and 5% for Grade 6 by 2010/11.
2. 30% of the previous year drop-out in primary Grades reintegrated in public schools by 2010, and up to 50% by 2015.
3. Pupils per class ratios reduced to 30 by 2015/16.
4. All new teachers receive 30-day in-service training per year, starting from 2005/06. All teachers meet national standards by 2010/11.
5. All teachers receive a “teaching guide” for specific Grade-subjects every year by 2010/11.
6. All primary students have access to a full set of free textbooks by 2015/16.
7. Primary level pupil-related and school-related expenditure increased to 15 US$ per pupil and 600 US$ per school by 2015/16.
8. All temporary classrooms replaced by solid structures by 2010/11, with priority to disaster prone areas.
9. Quality private schools will be operating throughout the province.

Note:
Base year data are for 2004/2005
All expenditure figures from 2004 to 2015 are expressed in 2004 constant prices.

Principal Sources of Information:
Population projection:... Base population is obtained from the 19__ Population Census
Enrolment and other school related data come from: ......
Financial and expenditure data are provided by: ......

The following notions are used in this model:

**Baseline data** are on yellow ground

**Dependent variables** (result variables)

- Calculation results are on white ground
- Data imported from other sheet(s) are on purple ground

**Independent variables** (decision variables)

- are in red figures on white ground in a double-line box
- Decision variables include assumptions, population projections and targets
<table>
<thead>
<tr>
<th>INDEPENDENT VARIABLES</th>
<th>DEPENDENT VARIABLES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(DECISION VARIABLES)</strong></td>
<td><strong>(RESULT VARIABLES)</strong></td>
</tr>
<tr>
<td><strong>PUPILS</strong></td>
<td></td>
</tr>
<tr>
<td>- population aged 6 and 6-11</td>
<td>- number of pupils entering Grade-1 in public and private schools</td>
</tr>
<tr>
<td>- access rate to Grade 1</td>
<td>- drop-out rates</td>
</tr>
<tr>
<td>- % of new entrants going to public schools</td>
<td>- enrolment by Grade for public and private schools</td>
</tr>
<tr>
<td>- student flow rates (promotion and repetition rates) for public and private schools</td>
<td>- gross enrolment rate (GER)</td>
</tr>
<tr>
<td>- re-integration rate of drop-outs into public schools</td>
<td>- number of drop-outs</td>
</tr>
<tr>
<td>- additional new entrants due to immigration</td>
<td>- number of graduates</td>
</tr>
<tr>
<td>- net transfer growth rate between public and private schools</td>
<td></td>
</tr>
</tbody>
</table>

**TEACHERS (in public schools)**

| - pupil/class ratio (class size) by Grade | - classes (group of students), by Grade |
| - classes per school | - total number of teaching staff required, by category |
| - teacher/class ratio | - total number of non-teaching staff needed |
| - principals and other non-teaching staff per school | - teaching and non-teaching staff to be recruited |
| - attrition rates of teaching and non-teaching staff | |

**RECURRENT EXPENDITURE (public schools)**

| - average increase of average monthly salary and allowances by category of staff | - total salary expenditure for school staff |
| - in-service teacher training: - % of teachers receiving training - number of training days - cost per training day | - total expenditure for in-service training |
| - expenditure for teacher guide books: - % of teachers receiving guides - unit cost | - total expenditure on teacher guide books |
| - textbook expenditure per pupil: - % of pupils receiving textbooks - unit cost | - total expenditure on textbooks and other pupil-related expenditures |
| - non-textbook expenditures per pupil | - unit cost (per pupil expenditure) |
| - school/related expenditure per school | - composition of unit (per pupil) expenditure |
| - expenditure on special Programmes and projects | - total recurrent expenditure |

**CAPITAL EXPENDITURE (public schools)**

| - number of classrooms operating in double-shift | - total number of classes (pupil groups) in double shift |
| - number of classrooms to be replaced | - total number of classrooms to build |
| - construction cost per classroom | - total expenditure for libraries and computer labs |
| - percentage of classrooms needing major repair | - total capital expenditure |
| - average expenditure for major repair of a classroom | |
| - number of libraries and computer labs to install and upGrade | |
| - standard cost of equipping a school with library and computer labs | |
### SUMMARY of Projection Scenario for PRIMARY EDUCATION

**Base year for the projection is 2004/2005 school year**

#### ENROLMENT AND GRADUATES:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
<th>% Private</th>
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</thead>
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<tr>
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<td>928</td>
<td>482,828</td>
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<tr>
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<td>1,430</td>
<td>496,604</td>
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<td>510,199</td>
<td>2,088</td>
<td>512,287</td>
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<td>526,365</td>
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<tr>
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<tr>
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<td>576,490</td>
<td>5,568</td>
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<td>598,137</td>
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</tr>
<tr>
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<td>8,744</td>
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<td>615,373</td>
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<td>638,325</td>
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#### TEACHERS (Public Schools Only):

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<th>YEAR</th>
<th>Needed</th>
<th>Pupil/Teach.</th>
<th>Non-Teach.</th>
<th>Total</th>
<th>Teacher Recruitment</th>
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<td>07/08</td>
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<td>28.4</td>
<td>6,604</td>
<td>25,118</td>
<td>1,947</td>
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<tr>
<td>08/09</td>
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<td>12/13</td>
<td>24,103</td>
<td>25.1</td>
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<td>26,363</td>
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<td>9,036</td>
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</table>

#### EXPENDITURE (Public Schools only; million US$ for expenditure, US$ for unit costs):

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<tr>
<th>YEAR</th>
<th>Expenditure</th>
<th>Salaries</th>
<th>Expenditure</th>
<th>Unit Cost (Recurrent Expenditure Per Pupil; US$)</th>
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<tbody>
<tr>
<td>04/05</td>
<td>24.100</td>
<td>15.177</td>
<td>11.923</td>
<td>50.011</td>
</tr>
<tr>
<td>05/06</td>
<td>32.699</td>
<td>18.508</td>
<td>12.191</td>
<td>66.031</td>
</tr>
<tr>
<td>06/07</td>
<td>36.443</td>
<td>21.132</td>
<td>12.311</td>
<td>71.431</td>
</tr>
<tr>
<td>07/08</td>
<td>40.477</td>
<td>23.763</td>
<td>12.714</td>
<td>76.921</td>
</tr>
<tr>
<td>08/09</td>
<td>45.186</td>
<td>28.163</td>
<td>15.023</td>
<td>83.201</td>
</tr>
<tr>
<td>09/10</td>
<td>46.780</td>
<td>30.839</td>
<td>15.941</td>
<td>85.331</td>
</tr>
<tr>
<td>10/11</td>
<td>52.331</td>
<td>32.578</td>
<td>11.753</td>
<td>92.531</td>
</tr>
<tr>
<td>11/12</td>
<td>55.987</td>
<td>34.386</td>
<td>11.554</td>
<td>94.631</td>
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<tr>
<td>12/13</td>
<td>58.373</td>
<td>36.076</td>
<td>9.294</td>
<td>96.621</td>
</tr>
<tr>
<td>14/15</td>
<td>65.147</td>
<td>40.053</td>
<td>10.194</td>
<td>64.131</td>
</tr>
<tr>
<td>15/16</td>
<td>71.898</td>
<td>41.042</td>
<td>10.256</td>
<td>71.601</td>
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</table>

#### INTERNAL EFFICIENCY (Public Schools Only):

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Total Years of Study by the Cohort: Primary</th>
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<tbody>
<tr>
<td>04/05</td>
<td>1.018</td>
</tr>
<tr>
<td>05/06</td>
<td>1.050</td>
</tr>
<tr>
<td>06/07</td>
<td>1.070</td>
</tr>
<tr>
<td>07/08</td>
<td>1.090</td>
</tr>
<tr>
<td>08/09</td>
<td>1.110</td>
</tr>
<tr>
<td>09/10</td>
<td>1.130</td>
</tr>
<tr>
<td>10/11</td>
<td>1.150</td>
</tr>
<tr>
<td>11/12</td>
<td>1.170</td>
</tr>
<tr>
<td>12/13</td>
<td>1.190</td>
</tr>
<tr>
<td>13/14</td>
<td>1.210</td>
</tr>
<tr>
<td>14/15</td>
<td>1.230</td>
</tr>
<tr>
<td>15/16</td>
<td>1.250</td>
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### Indicators of Efficiency

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Repetition Rate for Grades 1-6</th>
<th>Survival Rate to Grade 6</th>
<th>Primary Graduates as % G-1 Intake</th>
<th>Pupil-years per Graduate</th>
<th>Coefficient of Internal Efficiency</th>
</tr>
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<tbody>
<tr>
<td>04/05</td>
<td>9.7%</td>
<td>85.1%</td>
<td>75.6%</td>
<td>7.88</td>
<td>72.5%</td>
</tr>
<tr>
<td>05/06</td>
<td>5.9%</td>
<td>85.4%</td>
<td>75.4%</td>
<td>7.92</td>
<td>75.5%</td>
</tr>
<tr>
<td>06/07</td>
<td>4.5%</td>
<td>85.4%</td>
<td>75.3%</td>
<td>7.99</td>
<td>75.1%</td>
</tr>
<tr>
<td>07/08</td>
<td>3.6%</td>
<td>85.3%</td>
<td>75.2%</td>
<td>7.97</td>
<td>75.5%</td>
</tr>
<tr>
<td>08/09</td>
<td>2.9%</td>
<td>85.4%</td>
<td>75.3%</td>
<td>7.96</td>
<td>85.7%</td>
</tr>
<tr>
<td>09/10</td>
<td>2.9%</td>
<td>86.6%</td>
<td>86.7%</td>
<td>7.52</td>
<td>89.3%</td>
</tr>
<tr>
<td>09/11</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
<tr>
<td>10/12</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
<tr>
<td>11/13</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
<tr>
<td>12/14</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
<tr>
<td>13/15</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
<tr>
<td>14/16</td>
<td>2.6%</td>
<td>86.6%</td>
<td>86.6%</td>
<td>6.48</td>
<td>92.6%</td>
</tr>
</tbody>
</table>
**Demographic Data: School-age Population**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Number</th>
<th>Growth Rate</th>
<th>Number</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>88,205</td>
<td>1.93%</td>
<td>530,308</td>
<td>2.00%</td>
</tr>
<tr>
<td>05/06</td>
<td>89,969</td>
<td>2.00%</td>
<td>548,868</td>
<td>2.00%</td>
</tr>
<tr>
<td>06/07</td>
<td>91,708</td>
<td>2.00%</td>
<td>569,462</td>
<td>2.00%</td>
</tr>
<tr>
<td>07/08</td>
<td>93,415</td>
<td>1.93%</td>
<td>580,146</td>
<td>1.93%</td>
</tr>
<tr>
<td>08/09</td>
<td>95,096</td>
<td>1.86%</td>
<td>590,820</td>
<td>1.86%</td>
</tr>
<tr>
<td>09/10</td>
<td>96,750</td>
<td>1.80%</td>
<td>601,494</td>
<td>1.80%</td>
</tr>
<tr>
<td>10/11</td>
<td>98,376</td>
<td>1.74%</td>
<td>612,168</td>
<td>1.74%</td>
</tr>
<tr>
<td>11/12</td>
<td>100,000</td>
<td>1.68%</td>
<td>622,842</td>
<td>1.68%</td>
</tr>
<tr>
<td>12/13</td>
<td>101,623</td>
<td>1.63%</td>
<td>633,516</td>
<td>1.63%</td>
</tr>
<tr>
<td>13/14</td>
<td>103,246</td>
<td>1.57%</td>
<td>644,190</td>
<td>1.57%</td>
</tr>
<tr>
<td>14/15</td>
<td>104,869</td>
<td>1.52%</td>
<td>654,864</td>
<td>1.52%</td>
</tr>
<tr>
<td>15/16</td>
<td>106,492</td>
<td>1.47%</td>
<td>665,538</td>
<td>1.47%</td>
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</table>

* There are children entering Grade 1 below and over age 6. Therefore, the access rate target could be over 100%.

**Access Rate and Entrants into Grade 1**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Access rate</th>
<th>Entrants into Grade 1</th>
<th>Public Schools</th>
<th>Private Schools</th>
<th>Public Schools</th>
<th>Private Schools</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Growth</td>
<td>Number</td>
<td>Growth</td>
<td>Number</td>
</tr>
<tr>
<td>04/05</td>
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<td>83,089</td>
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<td>82,527</td>
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</tr>
<tr>
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<td>85,623</td>
<td>5.9%</td>
<td>85,366</td>
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</tr>
<tr>
<td>06/07</td>
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<td>90,157</td>
<td>7.0%</td>
<td>89,816</td>
<td>7.1%</td>
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</tr>
<tr>
<td>07/08</td>
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<td>94,706</td>
<td>8.0%</td>
<td>94,345</td>
<td>8.1%</td>
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</tr>
<tr>
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<td>99,241</td>
<td>9.0%</td>
<td>98,866</td>
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</tr>
<tr>
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<td>103,746</td>
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</tr>
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<td>112,345</td>
<td>12.1%</td>
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</tr>
<tr>
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<td>13.0%</td>
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<tr>
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<td>125,836</td>
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<td>130,746</td>
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### Promotion Rates (Public Schools)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>97.5%</td>
<td>95.4%</td>
<td>92.4%</td>
<td>92.0%</td>
<td>91.0%</td>
<td>86.7%</td>
</tr>
<tr>
<td>05/06</td>
<td>96.2%</td>
<td>95.7%</td>
<td>94.0%</td>
<td>94.7%</td>
<td>94.4%</td>
<td>90.0%</td>
</tr>
<tr>
<td>06/07</td>
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<td>97.8%</td>
<td>96.2%</td>
<td>96.1%</td>
<td>95.9%</td>
<td>90.1%</td>
</tr>
<tr>
<td>07/08</td>
<td>96.3%</td>
<td>96.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>08/09</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>09/10</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>10/11</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>11/12</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>12/13</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>13/14</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>14/15</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
</tr>
<tr>
<td>15/16</td>
<td>95.3%</td>
<td>98.2%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>97.5%</td>
<td>92.5%</td>
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</table>

### Repetition Rates (Public Schools)

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<tr>
<th>YEAR</th>
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<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>2.3%</td>
<td>5.3%</td>
<td>7.3%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>8.0%</td>
</tr>
<tr>
<td>05/06</td>
<td>1.7%</td>
<td>5.3%</td>
<td>7.3%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>7.0%</td>
</tr>
<tr>
<td>06/07</td>
<td>1.6%</td>
<td>5.2%</td>
<td>7.2%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>6.0%</td>
</tr>
<tr>
<td>07/08</td>
<td>1.5%</td>
<td>5.1%</td>
<td>6.4%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>08/09</td>
<td>1.6%</td>
<td>5.2%</td>
<td>6.3%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>09/10</td>
<td>1.7%</td>
<td>5.3%</td>
<td>6.4%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>10/11</td>
<td>1.8%</td>
<td>5.4%</td>
<td>6.5%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>11/12</td>
<td>1.9%</td>
<td>5.5%</td>
<td>6.6%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>12/13</td>
<td>2.0%</td>
<td>5.6%</td>
<td>6.7%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>13/14</td>
<td>2.1%</td>
<td>5.7%</td>
<td>6.8%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>14/15</td>
<td>2.2%</td>
<td>5.8%</td>
<td>6.9%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
<tr>
<td>15/16</td>
<td>2.3%</td>
<td>5.9%</td>
<td>7.0%</td>
<td>0.5%</td>
<td>0.5%</td>
<td>5.0%</td>
</tr>
</tbody>
</table>

### Drop-out Rates (Public Schools)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>0.7%</td>
<td>1.2%</td>
<td>5.0%</td>
<td>5.2%</td>
<td>6.0%</td>
<td>11.2%</td>
</tr>
<tr>
<td>05/06</td>
<td>0.5%</td>
<td>1.1%</td>
<td>4.4%</td>
<td>4.6%</td>
<td>5.5%</td>
<td>9.7%</td>
</tr>
<tr>
<td>06/07</td>
<td>0.4%</td>
<td>1.1%</td>
<td>3.8%</td>
<td>3.9%</td>
<td>4.5%</td>
<td>8.3%</td>
</tr>
<tr>
<td>07/08</td>
<td>0.4%</td>
<td>1.0%</td>
<td>3.2%</td>
<td>3.3%</td>
<td>3.7%</td>
<td>6.8%</td>
</tr>
<tr>
<td>08/09</td>
<td>0.3%</td>
<td>1.0%</td>
<td>2.7%</td>
<td>2.8%</td>
<td>3.0%</td>
<td>5.4%</td>
</tr>
<tr>
<td>09/10</td>
<td>0.2%</td>
<td>0.9%</td>
<td>2.1%</td>
<td>2.1%</td>
<td>2.2%</td>
<td>3.9%</td>
</tr>
<tr>
<td>10/11</td>
<td>0.2%</td>
<td>0.9%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>2.5%</td>
</tr>
<tr>
<td>11/12</td>
<td>0.2%</td>
<td>0.9%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
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### Internal Efficiency for PRIVATE Schools

#### 1.6 Promotion Rates (Private Schools)

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<td>92.6%</td>
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<td>95.0%</td>
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<td>95.0%</td>
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#### 1.7 Repetition Rates (Private Schools)

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<td>3.4%</td>
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<td>2.7%</td>
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<tr>
<td>11/12</td>
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<td>8.0%</td>
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<td>2.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>14/15</td>
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#### 1.8 Drop-out Rates (Private Schools)

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<tr>
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<td>7.0%</td>
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## Enrolment for PUBLIC and PRIVATE Schools

### 1.9 Drop-out from Public and Private Schools

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<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total</th>
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<td>2,533</td>
<td>2,586</td>
<td>4,635</td>
<td>15,424</td>
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<tr>
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<td>107</td>
<td>1,001</td>
<td>3,307</td>
<td>3,281</td>
<td>3,576</td>
<td>6,441</td>
<td>18,152</td>
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<td>864</td>
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<td>2,533</td>
<td>2,586</td>
<td>4,635</td>
<td>15,424</td>
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<td>1,001</td>
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<td>3,281</td>
<td>3,576</td>
<td>6,441</td>
<td>18,152</td>
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### 1.10 Reintegration Rates (of Previous Year Drop-outs) into PUBLIC Schools

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### 1.11 Previous Year Drop-outs Reintegrated into PUBLIC Schools

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<td>231</td>
<td>222</td>
<td>222</td>
<td>987</td>
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1.12 Net Transfers\(^*\) from Public to Private Schools

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<th>Grade 5</th>
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<th>Rate</th>
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</tr>
<tr>
<td>09/10</td>
<td>118</td>
<td>113</td>
<td>104</td>
<td>98</td>
<td>45</td>
<td>28</td>
<td>507</td>
<td>6.0%</td>
</tr>
<tr>
<td>10/11</td>
<td>125</td>
<td>120</td>
<td>110</td>
<td>104</td>
<td>48</td>
<td>31</td>
<td>558</td>
<td>6.0%</td>
</tr>
<tr>
<td>11/12</td>
<td>133</td>
<td>127</td>
<td>117</td>
<td>110</td>
<td>53</td>
<td>33</td>
<td>571</td>
<td>6.0%</td>
</tr>
<tr>
<td>12/13</td>
<td>141</td>
<td>135</td>
<td>124</td>
<td>117</td>
<td>54</td>
<td>35</td>
<td>606</td>
<td>6.0%</td>
</tr>
<tr>
<td>13/14</td>
<td>149</td>
<td>143</td>
<td>131</td>
<td>124</td>
<td>57</td>
<td>37</td>
<td>641</td>
<td>6.0%</td>
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<tr>
<td>14/15</td>
<td>158</td>
<td>152</td>
<td>139</td>
<td>131</td>
<td>60</td>
<td>39</td>
<td>679</td>
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</table>

\(^*\) Net Transfers = (Transfers from Public Schools into Private Schools) - (Transfers from Private Schools to Public Schools).

1.13 Additional New Entrants\(^*\) into Public Schools from Population Immigrating into the Area\(^**\)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>688</td>
<td>720</td>
<td>702</td>
<td>696</td>
<td>690</td>
<td>715</td>
<td>4,211</td>
</tr>
<tr>
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<td>798</td>
<td>785</td>
<td>778</td>
<td>773</td>
<td>797</td>
<td>4,704</td>
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<td>857</td>
<td>875</td>
<td>869</td>
<td>860</td>
<td>856</td>
<td>879</td>
<td>5,196</td>
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<tr>
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<td>942</td>
<td>952</td>
<td>952</td>
<td>941</td>
<td>938</td>
<td>961</td>
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<td>1,050</td>
<td>1,050</td>
<td>1,025</td>
<td>1,021</td>
<td>1,050</td>
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<td>1,109</td>
<td>1,104</td>
<td>1,125</td>
<td>6,671</td>
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<tr>
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<td>1,218</td>
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<td>1,262</td>
<td>1,198</td>
<td>1,190</td>
<td>1,217</td>
<td>7,166</td>
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<tr>
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<td>1,240</td>
<td>1,260</td>
<td>1,260</td>
<td>1,209</td>
<td>1,209</td>
<td>1,252</td>
<td>7,052</td>
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<tr>
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<td>1,390</td>
<td>1,350</td>
<td>1,351</td>
<td>1,372</td>
<td>8,145</td>
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<tr>
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<td>1,472</td>
<td>1,454</td>
<td>1,454</td>
<td>1,474</td>
<td>8,636</td>
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<tr>
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<td>1,527</td>
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<td>1,543</td>
<td>1,563</td>
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<td>1,571</td>
<td>1,618</td>
<td>1,595</td>
<td>1,599</td>
<td>1,618</td>
<td>9,619</td>
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\(^*\) Independent variable, not calculated by the model

\(^**\) Mainly through rural-urban migration

1.14 Additional New Entrants from Immigration as % of Total Enrolment\(^*\)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>% in Gr.1</th>
<th>% in Gr.2</th>
<th>% in Gr.3</th>
<th>% in Gr.4</th>
<th>% in Gr.5</th>
<th>% in Gr.6</th>
<th>All Grades</th>
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</thead>
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<td>0.8%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>1.0%</td>
<td>0.9%</td>
</tr>
<tr>
<td>05/06</td>
<td>0.9%</td>
<td>0.9%</td>
<td>0.9%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>06/07</td>
<td>0.9%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.1%</td>
</tr>
<tr>
<td>07/08</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>08/09</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.1%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>09/10</td>
<td>1.1%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>10/11</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>11/12</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
</tr>
<tr>
<td>12/13</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.3%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>13/14</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
<td>1.4%</td>
</tr>
<tr>
<td>14/15</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
</tr>
<tr>
<td>15/16</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

\(^*\) The percentage figures express the immigrating pupils expressed as percentage of total enrolment including immigration as shown in table 1.13
## Enrolment and Graduates in Public Schools

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total</th>
<th>Index</th>
<th>Graduates</th>
<th>Grad. Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>86,012</td>
<td>88,355</td>
<td>88,692</td>
<td>89,961</td>
<td>91,383</td>
<td>91,700</td>
<td>481,900</td>
<td>103</td>
<td>55,161</td>
<td>100</td>
</tr>
<tr>
<td>05/06</td>
<td>88,071</td>
<td>88,530</td>
<td>88,870</td>
<td>89,130</td>
<td>90,490</td>
<td>90,850</td>
<td>495,174</td>
<td>103</td>
<td>59,399</td>
<td>108</td>
</tr>
<tr>
<td>06/07</td>
<td>91,060</td>
<td>91,500</td>
<td>91,740</td>
<td>91,990</td>
<td>92,340</td>
<td>92,640</td>
<td>510,550</td>
<td>106</td>
<td>63,850</td>
<td>116</td>
</tr>
<tr>
<td>07/08</td>
<td>94,050</td>
<td>94,490</td>
<td>94,730</td>
<td>94,990</td>
<td>95,240</td>
<td>95,540</td>
<td>526,560</td>
<td>109</td>
<td>68,310</td>
<td>124</td>
</tr>
<tr>
<td>08/09</td>
<td>97,040</td>
<td>97,480</td>
<td>97,720</td>
<td>97,990</td>
<td>98,240</td>
<td>98,540</td>
<td>543,260</td>
<td>109</td>
<td>72,770</td>
<td>132</td>
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</table>

## Enrolment and Graduates in Private Schools

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total</th>
<th>Index</th>
<th>Graduates</th>
<th>Grad. Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>175</td>
<td>179</td>
<td>170</td>
<td>161</td>
<td>167</td>
<td>162</td>
<td>928</td>
<td>100</td>
<td>93</td>
<td>100</td>
</tr>
<tr>
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<td>349</td>
<td>263</td>
<td>254</td>
<td>233</td>
<td>178</td>
<td>153</td>
<td>1,430</td>
<td>112</td>
<td>121</td>
<td>115</td>
</tr>
<tr>
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<td>453</td>
<td>441</td>
<td>342</td>
<td>319</td>
<td>256</td>
<td>197</td>
<td>2,008</td>
<td>115</td>
<td>158</td>
<td>124</td>
</tr>
<tr>
<td>07/08</td>
<td>562</td>
<td>354</td>
<td>259</td>
<td>200</td>
<td>153</td>
<td>96</td>
<td>1,306</td>
<td>115</td>
<td>224</td>
<td>124</td>
</tr>
<tr>
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<td>670</td>
<td>569</td>
<td>482</td>
<td>382</td>
<td>282</td>
<td>3,573</td>
<td>115</td>
<td>300</td>
<td>126</td>
</tr>
<tr>
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<td>881</td>
<td>798</td>
<td>608</td>
<td>506</td>
<td>459</td>
<td>4,386</td>
<td>115</td>
<td>385</td>
<td>124</td>
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</table>

## Enrolment by Grade and Graduates in Public and Private Schools

<table>
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<tr>
<th>YEAR</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total</th>
<th>Index</th>
<th>Graduates</th>
<th>Grad. Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>86,187</td>
<td>86,721</td>
<td>85,036</td>
<td>79,698</td>
<td>74,166</td>
<td>71,020</td>
<td>482,828</td>
<td>100</td>
<td>89.7%</td>
<td>55,254</td>
</tr>
<tr>
<td>05/06</td>
<td>88,420</td>
<td>88,616</td>
<td>86,946</td>
<td>81,814</td>
<td>76,684</td>
<td>74,124</td>
<td>496,604</td>
<td>103</td>
<td>90.5%</td>
<td>59,520</td>
</tr>
<tr>
<td>06/07</td>
<td>90,828</td>
<td>89,000</td>
<td>86,908</td>
<td>84,374</td>
<td>79,449</td>
<td>77,565</td>
<td>512,207</td>
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<td>91.8%</td>
<td>64,141</td>
</tr>
<tr>
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<td>93,262</td>
<td>91,114</td>
<td>89,180</td>
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<td>81,571</td>
<td>81,267</td>
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<td>110</td>
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<td>73,301</td>
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<td>94,940</td>
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<td>88,540</td>
<td>87,940</td>
<td>577,141</td>
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<td>80,522</td>
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<td>91,530</td>
<td>90,910</td>
<td>598,028</td>
<td>121</td>
<td>97.0%</td>
<td>90,056</td>
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<td>94,150</td>
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<td>621,875</td>
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<td>104,020</td>
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<td>96,700</td>
<td>96,080</td>
<td>649,965</td>
<td>129</td>
<td>99.6%</td>
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</tr>
<tr>
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<td>107,664</td>
<td>106,610</td>
<td>101,970</td>
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<td>100,720</td>
<td>680,223</td>
<td>133</td>
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</table>

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103
### TEACHER SUB-MODEL: PUBLIC SCHOOLS ONLY

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<thead>
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<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
<th>Grade 6</th>
<th>Total Pupil/Class Ratio</th>
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<td>39.5</td>
<td>39.3</td>
<td>39.1</td>
<td>39.6</td>
</tr>
<tr>
<td>05/06</td>
<td>38.6</td>
<td>38.6</td>
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<td>37.8</td>
<td>37.6</td>
<td>37.4</td>
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</tr>
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<td>37.1</td>
<td>36.6</td>
<td>36.5</td>
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<td>36.1</td>
</tr>
<tr>
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<td>35.5</td>
<td>35.5</td>
<td>35.5</td>
<td>35.5</td>
<td>35.5</td>
<td>35.5</td>
</tr>
<tr>
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<td>34.9</td>
<td>34.7</td>
<td>34.7</td>
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<td>35.6</td>
<td>35.1</td>
</tr>
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<td>33.9</td>
<td>33.9</td>
<td>33.9</td>
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<td>33.9</td>
<td>33.9</td>
</tr>
<tr>
<td>10/11</td>
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<td>32.3</td>
<td>32.3</td>
<td>32.3</td>
<td>32.3</td>
</tr>
<tr>
<td>11/12</td>
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<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
</tr>
<tr>
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<td>31.8</td>
<td>31.8</td>
<td>31.8</td>
</tr>
</tbody>
</table>

*Class is "a group of pupils" (not a classroom).

### Teachers per Class, Principals and Other Staff per School and Attrition Rates

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Teachers per Class</th>
<th>Principals</th>
<th>Other Non-Teaching Staff</th>
<th>Attrition rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Teachers per Class</td>
<td>Principals</td>
<td>Other Non-Teaching Staff</td>
<td></td>
</tr>
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<td>04/05</td>
<td>0.14</td>
<td>0.01</td>
<td>0.10</td>
<td>3.18</td>
</tr>
<tr>
<td>05/06</td>
<td>0.16</td>
<td>0.02</td>
<td>0.12</td>
<td>2.97</td>
</tr>
<tr>
<td>06/07</td>
<td>0.13</td>
<td>0.08</td>
<td>0.14</td>
<td>3.20</td>
</tr>
<tr>
<td>07/08</td>
<td>0.11</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>08/09</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>09/10</td>
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<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>10/11</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>11/12</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>12/13</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>13/14</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>14/15</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
<tr>
<td>15/16</td>
<td>0.13</td>
<td>0.10</td>
<td>0.12</td>
<td>2.5%</td>
</tr>
</tbody>
</table>

*Class is "a group of pupils" (not a classroom).

### School Staff by Function

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Primary Teachers</th>
<th>Needed</th>
<th>School Principals</th>
<th>All School Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>4,232</td>
<td>401</td>
<td>2,008</td>
<td>13,315</td>
</tr>
<tr>
<td>05/06</td>
<td>4,232</td>
<td>401</td>
<td>2,008</td>
<td>13,315</td>
</tr>
<tr>
<td>06/07</td>
<td>4,049</td>
<td>380</td>
<td>1,825</td>
<td>12,985</td>
</tr>
<tr>
<td>07/08</td>
<td>3,867</td>
<td>360</td>
<td>1,640</td>
<td>12,630</td>
</tr>
<tr>
<td>08/09</td>
<td>3,645</td>
<td>340</td>
<td>1,460</td>
<td>12,290</td>
</tr>
<tr>
<td>09/10</td>
<td>3,425</td>
<td>320</td>
<td>1,280</td>
<td>11,950</td>
</tr>
<tr>
<td>10/11</td>
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<td>300</td>
<td>1,100</td>
<td>11,550</td>
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<tr>
<td>11/12</td>
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<td>280</td>
<td>920</td>
<td>11,100</td>
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<tr>
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<td>260</td>
<td>740</td>
<td>10,500</td>
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<tr>
<td>13/14</td>
<td>2,091</td>
<td>240</td>
<td>560</td>
<td>9,800</td>
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<tr>
<td>14/15</td>
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<td>220</td>
<td>380</td>
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<td>15/16</td>
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### Attrition, New Posts and Recruitment at Primary Level

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<tr>
<th>YEAR</th>
<th>Attrition</th>
<th>New Posts</th>
<th>Recruitment</th>
<th>Attrition</th>
<th>New Posts</th>
<th>Recruitment</th>
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<td>04/05</td>
<td>32%</td>
<td>2,028</td>
<td>2,386</td>
<td>40%</td>
<td>32</td>
<td>49</td>
</tr>
<tr>
<td>05/06</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>06/07</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>07/08</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>08/09</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>09/10</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>10/11</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>11/12</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>12/13</td>
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<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>13/14</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>14/15</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
</tr>
<tr>
<td>15/16</td>
<td>33%</td>
<td>2,028</td>
<td>2,360</td>
<td>40%</td>
<td>34</td>
<td>49</td>
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</table>
## RECURRENT EXPENDITURE SUB-MODEL: PUBLIC PRIMARY SCHOOLS

### 3.1 Average Monthly Salary and Allowances of Staff by Function (US$)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Primary Level</th>
<th>N.Teach Staff</th>
<th>Annual</th>
<th>Special</th>
</tr>
</thead>
<tbody>
<tr>
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<td>75.00</td>
<td>60.00</td>
<td>83.00</td>
<td>40.00</td>
</tr>
<tr>
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<td>80.35</td>
<td>64.00</td>
<td>91.87</td>
<td>47.82</td>
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<tr>
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<td>66.91</td>
<td>94.84</td>
<td>44.63</td>
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<tr>
<td>07/08</td>
<td>86.61</td>
<td>69.29</td>
<td>98.18</td>
<td>46.10</td>
</tr>
<tr>
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<td>93.36</td>
<td>74.00</td>
<td>101.61</td>
<td>49.79</td>
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<tr>
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<td>77.31</td>
<td>105.52</td>
<td>51.54</td>
</tr>
<tr>
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<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
</tr>
<tr>
<td>11/12</td>
<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
</tr>
<tr>
<td>12/13</td>
<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
</tr>
<tr>
<td>13/14</td>
<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
</tr>
<tr>
<td>14/15</td>
<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
</tr>
<tr>
<td>15/16</td>
<td>100.01</td>
<td>80.01</td>
<td>113.35</td>
<td>53.34</td>
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</table>

### 3.2 Pupil-related and School-related Expenditure

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Pupil-related Expenditure</th>
<th>School-related Expenditure</th>
<th>Total Expenditure</th>
<th>Parental Contributions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pupils</td>
<td>Per pupil ($)</td>
<td>Total ('000$)</td>
<td>Schools</td>
<td>Per school ($)</td>
</tr>
<tr>
<td>04/05</td>
<td>481,900</td>
<td>5.00</td>
<td>2,410</td>
<td>1,205</td>
</tr>
<tr>
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<td>495,174</td>
<td>6.00</td>
<td>2,971</td>
<td>1,347</td>
</tr>
<tr>
<td>06/07</td>
<td>510,299</td>
<td>6.80</td>
<td>3,469</td>
<td>1,402</td>
</tr>
<tr>
<td>07/08</td>
<td>526,566</td>
<td>7.75</td>
<td>4,079</td>
<td>1,484</td>
</tr>
<tr>
<td>08/09</td>
<td>543,200</td>
<td>8.65</td>
<td>4,609</td>
<td>1,552</td>
</tr>
<tr>
<td>09/10</td>
<td>560,000</td>
<td>9.50</td>
<td>5,139</td>
<td>1,639</td>
</tr>
<tr>
<td>10/11</td>
<td>576,400</td>
<td>10.50</td>
<td>5,653</td>
<td>1,712</td>
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<tr>
<td>11/12</td>
<td>591,126</td>
<td>11.50</td>
<td>6,190</td>
<td>1,785</td>
</tr>
<tr>
<td>12/13</td>
<td>604,865</td>
<td>12.50</td>
<td>6,746</td>
<td>1,873</td>
</tr>
<tr>
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<td>615,573</td>
<td>13.50</td>
<td>7,300</td>
<td>1,959</td>
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<tr>
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<td>7,876</td>
<td>2,046</td>
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<td>635,250</td>
<td>15.50</td>
<td>8,459</td>
<td>2,139</td>
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</table>

### Salary Expenditure (1000 US$)

<table>
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<tr>
<th>Teachers and Principals</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,615</td>
<td>3,562</td>
</tr>
<tr>
<td>14,412</td>
<td>4,057</td>
</tr>
<tr>
<td>16,711</td>
<td>4,622</td>
</tr>
<tr>
<td>18,946</td>
<td>4,817</td>
</tr>
<tr>
<td>21,013</td>
<td>5,470</td>
</tr>
<tr>
<td>23,854</td>
<td>6,001</td>
</tr>
<tr>
<td>26,184</td>
<td>6,534</td>
</tr>
<tr>
<td>27,573</td>
<td>6,912</td>
</tr>
<tr>
<td>28,928</td>
<td>7,349</td>
</tr>
<tr>
<td>30,257</td>
<td>7,760</td>
</tr>
<tr>
<td>31,640</td>
<td>7,995</td>
</tr>
<tr>
<td>33,039</td>
<td>8,230</td>
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</table>

### Total Pupil and School-related Expenditure

<table>
<thead>
<tr>
<th>Total Expenditure</th>
<th>Parental Related Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,655</td>
<td>6,655</td>
</tr>
<tr>
<td>7,897</td>
<td>7,897</td>
</tr>
<tr>
<td>8,570</td>
<td>8,570</td>
</tr>
<tr>
<td>8,844</td>
<td>8,844</td>
</tr>
<tr>
<td>9,690</td>
<td>9,690</td>
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<td>10,619</td>
<td>10,619</td>
</tr>
<tr>
<td>11,474</td>
<td>11,474</td>
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<tr>
<td>12,431</td>
<td>12,431</td>
</tr>
<tr>
<td>13,285</td>
<td>13,285</td>
</tr>
<tr>
<td>14,243</td>
<td>14,243</td>
</tr>
<tr>
<td>15,100</td>
<td>15,100</td>
</tr>
<tr>
<td>16,067</td>
<td>16,067</td>
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</table>
### 3.3 Provision of Textbooks ('000 US$)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>%</th>
<th>Number</th>
<th>(US$)</th>
<th>Total Cost (US$)</th>
<th>Principals</th>
<th>% Teachers Receiving Guide</th>
<th>(US$)</th>
<th>Total Cost (US$)</th>
</tr>
</thead>
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<tr>
<td>04/05</td>
<td>14%</td>
<td>81,250</td>
<td>7.50</td>
<td>600</td>
<td>10,504</td>
<td>50%</td>
<td>217</td>
<td></td>
</tr>
<tr>
<td>05/06</td>
<td>24.7%</td>
<td>126,109</td>
<td>7.50</td>
<td>945</td>
<td>18,739</td>
<td>66.7%</td>
<td>28.00</td>
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<td>174,228</td>
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<td>1,507</td>
<td>20,906</td>
<td>72.0%</td>
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<td>41.5%</td>
<td>228,489</td>
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<td>21,944</td>
<td>83.3%</td>
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<td>49.8%</td>
<td>280,007</td>
<td>7.50</td>
<td>2,082</td>
<td>22,765</td>
<td>93.7%</td>
<td>28.00</td>
<td>588</td>
</tr>
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<td>335,517</td>
<td>7.50</td>
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<td>24,041</td>
<td>100.0%</td>
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<td>678</td>
</tr>
<tr>
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<td>66.6%</td>
<td>393,690</td>
<td>7.50</td>
<td>2,953</td>
<td>25,295</td>
<td>100.0%</td>
<td>28.00</td>
<td>708</td>
</tr>
<tr>
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<td>74.9%</td>
<td>452,445</td>
<td>7.50</td>
<td>3,393</td>
<td>26,538</td>
<td>100.0%</td>
<td>28.00</td>
<td>743</td>
</tr>
<tr>
<td>12/13</td>
<td>83.1%</td>
<td>512,606</td>
<td>7.50</td>
<td>3,845</td>
<td>27,732</td>
<td>100.0%</td>
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</tr>
<tr>
<td>13/14</td>
<td>91.6%</td>
<td>573,054</td>
<td>7.50</td>
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<td>28,973</td>
<td>100.0%</td>
<td>28.00</td>
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</tr>
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<td>4,764</td>
<td>30,255</td>
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### 3.4 In-Service Training for Primary Teaching Staff and Principals

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Persons</th>
<th>% Training</th>
<th>Days / Year</th>
<th>US$ / day</th>
<th>Total ('000$)</th>
<th>Persons</th>
<th>% Training</th>
<th>Days / Year</th>
<th>US$ / day</th>
<th>Total ('000$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>04/05</td>
<td>2,444</td>
<td>100.0%</td>
<td>4</td>
<td>15.00</td>
<td>147</td>
<td>1,111</td>
<td>50%</td>
<td>6</td>
<td>10.00</td>
<td>60</td>
</tr>
<tr>
<td>05/06</td>
<td>2,468</td>
<td>100.0%</td>
<td>30</td>
<td>15.00</td>
<td>1,111</td>
<td>1,111</td>
<td>100.0%</td>
<td>30</td>
<td>10.00</td>
<td>811</td>
</tr>
<tr>
<td>06/07</td>
<td>2,147</td>
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<td>30</td>
<td>15.00</td>
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<td>966</td>
<td>100.0%</td>
<td>30</td>
<td>10.00</td>
<td>378</td>
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<td>15.00</td>
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<td>928</td>
<td>100.0%</td>
<td>30</td>
<td>10.00</td>
<td>568</td>
</tr>
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<td>741</td>
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<td>10.00</td>
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<td>10.00</td>
<td>796</td>
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<tr>
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<td>15.00</td>
<td>711</td>
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<td>10.00</td>
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<td>15.00</td>
<td>776</td>
<td>776</td>
<td>100.0%</td>
<td>30</td>
<td>10.00</td>
<td>1,052</td>
</tr>
<tr>
<td>12/13</td>
<td>1,883</td>
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<td>30</td>
<td>15.00</td>
<td>837</td>
<td>837</td>
<td>100.0%</td>
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<td>10.00</td>
<td>1,052</td>
</tr>
<tr>
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<td>100.0%</td>
<td>30</td>
<td>15.00</td>
<td>837</td>
<td>837</td>
<td>100.0%</td>
<td>30</td>
<td>10.00</td>
<td>1,052</td>
</tr>
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### 3.5 Special Programmes for Developing Primary Education ('000 US$)

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<th>Programme 3</th>
<th>Programme 4</th>
<th>Programme 5</th>
<th>Programme 6</th>
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<tr>
<td>05/06</td>
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<td>500</td>
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<tr>
<td>06/07</td>
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<td></td>
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</tr>
<tr>
<td>08/09</td>
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<td>300</td>
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<td></td>
<td></td>
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<tr>
<td>14/15</td>
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<td>500</td>
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<td>300</td>
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<td></td>
<td></td>
<td>1,600</td>
</tr>
<tr>
<td>15/16</td>
<td>1,200</td>
<td>500</td>
<td>1,700</td>
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### 3.6 Recurrent Expenditure by Major Categories (million US$)

<table>
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<tr>
<th>YEAR</th>
<th>Teaching Staff Salary</th>
<th>Other Staff Salary</th>
<th>Textbooks</th>
<th>Guides</th>
<th>Pupil-related</th>
<th>Other Staff Salary</th>
<th>Teacher Training</th>
<th>Special Programmes</th>
<th>Other Expenditure</th>
<th>Total Recurrent</th>
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<td>0.171</td>
<td>1.600</td>
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<td></td>
<td>24.100</td>
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<td>05/06</td>
<td>14.472</td>
<td>4.037</td>
<td>0.609</td>
<td>0.277</td>
<td>7.397</td>
<td>1.307</td>
<td>4.600</td>
<td></td>
<td></td>
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<td>06/07</td>
<td>16.711</td>
<td>4.422</td>
<td>0.945</td>
<td>0.350</td>
<td>8.076</td>
<td>1.339</td>
<td>6.000</td>
<td></td>
<td></td>
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<td>18.946</td>
<td>4.817</td>
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<td>0.420</td>
<td>8.884</td>
<td>1.498</td>
<td>6.600</td>
<td></td>
<td></td>
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<td>5.470</td>
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<td>1.537</td>
<td>8.000</td>
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<td>1.830</td>
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<td>6.554</td>
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<td>2.987</td>
<td>6.000</td>
<td></td>
<td></td>
<td>52.333</td>
</tr>
<tr>
<td>11/12</td>
<td>27.573</td>
<td>6.813</td>
<td>2.953</td>
<td>0.708</td>
<td>12.419</td>
<td>3.901</td>
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<td>13.989</td>
<td>5.103</td>
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<td>61.372</td>
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### 3.7 Unit Cost (Recurrent Expenditure per Pupil) for Primary Education Level (US$)

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<th>YEAR</th>
<th>Teaching Staff Salary</th>
<th>Other Staff Salary</th>
<th>Textbooks</th>
<th>Guides</th>
<th>Pupil-related</th>
<th>Other Staff Salary</th>
<th>Teacher Training</th>
<th>Special Programmes</th>
<th>Other Expenditure</th>
<th>Unit cost per Graduate (US$)</th>
</tr>
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<td>1.231</td>
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<td>2.64</td>
<td>9.29</td>
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<td></td>
<td>66.03</td>
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<td>1.851</td>
<td>0.69</td>
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<td>2.63</td>
<td>9.02</td>
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<td>12.660</td>
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<td>1.33</td>
<td>24.98</td>
<td>14.76</td>
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<tr>
<td>15/16</td>
<td>52.018</td>
<td>12.660</td>
<td>7.502</td>
<td>1.33</td>
<td>24.98</td>
<td>14.76</td>
<td>0.00</td>
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### 3.8 Composition of Unit Cost (Public Recurrent Expenditure per Pupil) for Primary Education Level

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<th>YEAR</th>
<th>Teaching Staff Salary</th>
<th>Other Staff Salary</th>
<th>Textbooks</th>
<th>Guides</th>
<th>Pupil-related</th>
<th>Other Staff Salary</th>
<th>Teacher Training</th>
<th>Special Programmes</th>
<th>Other Expenditure</th>
<th>All except Teacher sal.</th>
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<td>48.2%</td>
<td>14.8%</td>
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<td>21.6%</td>
<td>0.9%</td>
<td>6.6%</td>
<td></td>
<td></td>
<td>51.8%</td>
</tr>
<tr>
<td>05/06</td>
<td>44.3%</td>
<td>12.1%</td>
<td>1.1%</td>
<td>0.8%</td>
<td>22.6%</td>
<td>4.0%</td>
<td>14.1%</td>
<td></td>
<td></td>
<td>55.7%</td>
</tr>
<tr>
<td>06/07</td>
<td>45.9%</td>
<td>12.4%</td>
<td>2.6%</td>
<td>1.0%</td>
<td>22.2%</td>
<td>3.7%</td>
<td>12.6%</td>
<td></td>
<td></td>
<td>54.1%</td>
</tr>
<tr>
<td>07/08</td>
<td>46.8%</td>
<td>11.9%</td>
<td>3.2%</td>
<td>1.1%</td>
<td>21.9%</td>
<td>3.7%</td>
<td>11.4%</td>
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<td></td>
<td>53.2%</td>
</tr>
<tr>
<td>08/09</td>
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<td>12.1%</td>
<td>3.7%</td>
<td>1.1%</td>
<td>21.5%</td>
<td>3.4%</td>
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<tr>
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<td>50.0%</td>
<td>12.5%</td>
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<td>1.3%</td>
<td>21.9%</td>
<td>6.4%</td>
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<td>50.0%</td>
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<tr>
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<td>12.2%</td>
<td>5.3%</td>
<td>1.3%</td>
<td>22.2%</td>
<td>7.0%</td>
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<td>5.8%</td>
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<td>12/13</td>
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<td>13/14</td>
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### 4.1 Construction of Classrooms

<table>
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<th>Construction of Classrooms</th>
<th>Major Repair of Classrooms and Furniture</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Total Rooms (cost of small room)</td>
<td>Classrooms in Single-shift Classrooms</td>
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<td>4.2</td>
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<td>05/06</td>
<td>4.8</td>
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### 4.2 Classrooms to replace

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</thead>
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<tr>
<td>04/05</td>
<td>4.2</td>
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</tr>
<tr>
<td>05/06</td>
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### 4.5 Total Capital Expenditure (million US$)

<table>
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<th>Major Repair of Classrooms and Furniture</th>
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</thead>
<tbody>
<tr>
<td>04/05</td>
<td>4.2</td>
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</tr>
<tr>
<td>05/06</td>
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<tr>
<td>07/08</td>
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</tr>
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<td>08/09</td>
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# GLOSSARY of Technical Terms used in the ANPRO-Model

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<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>ACCESS RATE</td>
<td>The number of children of school-entrance age (age 6) who enter Primary Education Grade 1, expressed as a percentage of the population of the same school-entrance age (age 6).</td>
</tr>
<tr>
<td>ADMINISTRATIVE SUPPORT (ADMINISTRATION EXPENDITURE)</td>
<td>Expenses related to the day-to-day running of the provincial level education administration, This EXPENDITURE is not linked to any specific sub-sector. It is treated as EXPENDITURE for the management of the entire provincial education sector. It is shown in Model Sheet 4: Summary of Expenditure of all Sub-Sectors, Table ES.9.</td>
</tr>
<tr>
<td>ADMISSION RATE</td>
<td>(See ACCESS RATE)</td>
</tr>
<tr>
<td>AVERAGE NUMBER OF PUPIL-YEARS PER PUPIL BY GRADE</td>
<td>Total number of PUPIL-YEARS spent by a given PUPIL COHORT in a given grade, divided by the number of pupils in the cohort. The effect of repetition and drop-out will cause this number to be greater than one.</td>
</tr>
<tr>
<td>ASSUMPTION</td>
<td>A figure (value) in the Model which relates to technical items such as base salary; construction cost per classroom; SCHOOL-AGE POPULATION during the projection period, etc. The figure (value) is always decided outside the Model and must be entered into the Model. All assumptions are INDEPENDENT VARIABLES. (see also Handbook Section 4.1)</td>
</tr>
<tr>
<td>BASELINE DATA</td>
<td>The statistical data for the year preceding the first projection year.</td>
</tr>
<tr>
<td>BASE YEAR</td>
<td>The year preceding the first projection year.</td>
</tr>
<tr>
<td>BUDGET</td>
<td>The financial allocation effectively made on an annual basis. Note: it is not the same as projected financial requirements or projected EXPENDITURE shown in the Model.</td>
</tr>
<tr>
<td>CAPITAL EXPENDITURE</td>
<td>(see COSTS)</td>
</tr>
<tr>
<td>CLASS</td>
<td>A group of pupils or children attending an educational activity at the same moment and in the same place. A CLASS (pupil group) is not a classroom.</td>
</tr>
<tr>
<td><strong>COEFFICIENT OF (INTERNAL) EFFICIENCY</strong></td>
<td>A measure of the INTERNAL EFFICIENCY of an education system obtained by dividing the ideal number of PUPIL-YEARS required for a PUPIL COHORT to complete a level or cycle of education (e.g. 6 years to complete the primary level) by the estimated total number of PUPIL-YEARS actually spent by the same PUPIL COHORT (to complete the Primary level).</td>
</tr>
<tr>
<td><strong>COSTS (EXPENDITURE)</strong></td>
<td>The COST of education is the monetary value of all inputs into the education process (teachers, buildings, materials, etc). The term ‘COSTS’ is often used as a synonym for the term ‘EXPENDITURE’. In the provincial education plan, the COSTS indicate the EXPENDITURE (BUDGET) required to achieve all TARGETS. Public COSTS of education are the costs of inputs provided by public (i.e. government) bodies (ministries, provincial departments, etc.) and financed from public (i.e. government) BUDGETS. Private COSTS (or non-public, user, or direct COSTS to parents) are the COSTS of educational inputs directly paid by the local community and by parents, i.e. not from public BUDGETS. Depending on the country, these COSTS usually include tuition fees, construction fund fees, contributions to school maintenance and learning materials, the purchase of textbooks and other direct contributions. Capital EXPENDITURE (or capital or investment COST or investment EXPENDITURE) includes all durable inputs, such as site acquisition, construction, major repairs, major equipment, etc. Recurrent EXPENDITURE (or recurrent COST) include all inputs that have to be provided regularly (usually on an annual basis), such as personnel costs (salaries and related costs) and non-personnel costs (supplies, utilities, operating costs, teaching and learning materials, laboratory materials, maintenance and small repairs, etc.).</td>
</tr>
<tr>
<td><strong>CONSTANT PRICE (CONSTANT COST)</strong></td>
<td>All financial projections in the ANPRO-MODEL are made in constant BASE YEAR price. This means that possible price increases due to inflation are not taken into account. The BASE YEAR is 2004.</td>
</tr>
<tr>
<td><strong>DEPENDENT VARIABLE</strong></td>
<td>A figure in the ANRO-MODEL which is the result of calculations made by the Model. Example: the number of Primary STANDARD TEACHERS needed in 2010 is a DEPENDENT VARIABLE. (See also Handbook Section 4.1)</td>
</tr>
<tr>
<td><strong>DIRECT PARENT CONTRIBUTIONS</strong></td>
<td>Financial contributions made by parents directly to the school (in some countries, to a district level school fund or similar) for a range of purposes, including learning materials, extracurricular activities, registration, etc.</td>
</tr>
<tr>
<td><strong>DISTRICT LEARNING CENTRE (DLC)</strong></td>
<td>A centre for NON-FORMAL EDUCATION which serves a larger geographical area. The name of such NFE facilities may change from country to country.</td>
</tr>
<tr>
<td><strong>DROP-OUT RATE</strong></td>
<td>The percentage of pupils who do not complete a given grade or level of education in a given school year, i.e. who leave the formal school system not having completed the Primary or Secondary Education cycle.</td>
</tr>
<tr>
<td><strong>ECCE (PRE-SCHOOL)</strong></td>
<td>‘Early Childhood Care and Education’ is the term used for education programmes for the 3- to 5-year age group. In the ANPRO-MODEL this is also referred to as ‘Pre-school’.</td>
</tr>
<tr>
<td>ENTRANTS</td>
<td>The number of children entering the first grade of a given level of education (a sub-sector). For example: the number of children entering Primary Grade 1 or the number of children entering Grade 7, i.e. the first grade of Secondary Education, etc.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>EQUIVALENT PROGRAMMES</td>
<td>Education programmes for school drop-outs and other out-of-school youth which are aimed at providing them with education which is equivalent to formal education. Such programmes are often part of NON-FORMAL EDUCATION.</td>
</tr>
<tr>
<td>EXPENDITURE</td>
<td>(See COSTS)</td>
</tr>
<tr>
<td>FUNDAMENTAL SCHOOL QUALITY LEVEL (FSQL)</td>
<td>A programme consisting of the minimum package of inputs into the teaching-learning process at school level necessary for providing quality education. (See also Handbook Section 5, Technical Note 7)</td>
</tr>
<tr>
<td>GENDER PARITY INDEX</td>
<td>The ratio of female to male enrolment rates which measures progress towards gender equity in enrolment in Pre-school (ECCE), Primary, Secondary and NFE programmes and the level of learning opportunities available to girls compared to those available to boys.</td>
</tr>
<tr>
<td>GRADUATES</td>
<td>Pupils who have completed the last grade of a cycle and are qualified to enter the first grade of the next higher cycle, i.e. those students who have been promoted. (GRADUATES do not include those who repeat the last grade or who have dropped out from the last grade. Therefore, the total number of GRADUATES is not the same as enrolment in the last grade).</td>
</tr>
<tr>
<td>GROSS ENROLMENT RATE (GER)</td>
<td>The total number of pupils enrolled in a given level of education (e.g. Primary Education), irrespective of age, expressed as a percentage of the total population of the corresponding (e.g. Primary) SCHOOL-AGE POPULATION range.</td>
</tr>
<tr>
<td>GROSS INTAKE RATE</td>
<td>The number of new ENTRANTS in the first grade of a given level of education, regardless of age, expressed as a percentage of the population of official school-entrance age.</td>
</tr>
<tr>
<td>INDEPENDENT VARIABLE</td>
<td>A figure (value) which is entered in the ANPRO-MODEL; the value is not calculated by the Model. All TARGETS and ASSUMPTIONS in the Model are INDEPENDENT VARIABLES. (see also Handbook Section 4.1)</td>
</tr>
<tr>
<td>INTAKE RATE</td>
<td>The number of students entering the first grade of Professional Secondary Schools expressed as a percentage of GRADUATES of General Secondary Education.</td>
</tr>
<tr>
<td>INTAKE CAPACITY (of Teacher Training Institutions)</td>
<td>The total number of students that all Teacher Training Institutions in a province can accommodate in the first year of the Pre-Service Training course.</td>
</tr>
</tbody>
</table>
| **INTERNAL EFFICIENCY** | Indicates the degree of efficiency of the flow of pupils through the cycle. It is expressed in a number of ways:
- Promotion Rates, Repetition Rates, Drop-out Rates;
- Coefficient of Internal Efficiency; and
- Retention Rate. (See also these above terms) |
<p>| <strong>NET ENROLMENT RATE (NER)</strong> | The number of pupils of the official School-Age Population enrolled in school expressed as a percentage of the total population of the same age group. |
| <strong>NEW ENTRANTS</strong> | Pupils entering the first grade of an education cycle (for instance, Primary, Secondary, etc.) for the first time. |
| <strong>NON-FORMAL EDUCATION (NFE)</strong> | Non-Formal Education (NFE) comprises organized learning activities that cater to persons who are not enrolled in formal education. In the provincial education plan, NFE comprises complementary Primary and Secondary programmes for out-of-school children and basic literacy and post-literacy programmes for out-of-school youth. |
| <strong>NON-PUBLIC SCHOOL</strong> | Schools operated under private management. |
| <strong>NON-STANDARD TEACHERS</strong> | Teachers whose qualifications do not conform to the standards set by the Ministry of Education. |
| <strong>OPERATING EXPENDITURE</strong> | EXPENDITURE needed for the day-to-day operation of a school. In the ANPRO-MODEL, this EXPENDITURE includes utilities, communication, teaching-learning materials and also Teacher In-service Training. |
| <strong>PASS RATE</strong> | The number of pupils succeeding at the end of a cycle expressed as a percentage of total enrolment at the last grade of that cycle. |
| <strong>PROFESSIONAL SECONDARY EDUCATION</strong> | All Secondary level education programmes and institutions which are not General Secondary Education. PROFESSIONAL SECONDARY EDUCATION includes technical and vocational programmes, etc. which lead to a secondary school certificate. It is not vocational training. |
| <strong>PROGRESSION RATE</strong> (in Professional Secondary and in Teacher Training) | The number of pupils moving from one grade (in a given year) to the next grade (in the following year), expressed as a percentage of total enrolment in the lower grade. |
| <strong>PROMOTION RATE</strong> | The percentage of pupils in a given grade who are promoted to the next higher grade in the following school year. |
| <strong>PROVINCIAL LEARNING CENTRE</strong> | A centre for NON-FORMAL EDUCATION which serves an entire province. The name of such NFE facilities may change from country to country. |
| <strong>PROVISION OF TEACHER GUIDES</strong> (per cent received) | Teachers having received a set of teacher guides expressed as a percentage of the total number of teachers. |</p>
<table>
<thead>
<tr>
<th>Glossary Topics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROVISION OF TEXTBOOKS (per cent of pupils received)</td>
<td>Pupils having received a set of textbooks expressed as a percentage of the total enrolment.</td>
</tr>
<tr>
<td>PUPIL CLASS CONTACT HOURS</td>
<td>The number of hours per week the pupil spends in the CLASS.</td>
</tr>
<tr>
<td>PUPIL-CLASS RATIO</td>
<td>The number of pupils per CLASS. Together with the TEACHER-CLASS RATIO, it determines the pupil-teacher ratio.</td>
</tr>
<tr>
<td>PUPIL COHORT</td>
<td>A group of pupils who enter the first grade of an education cycle in a given school year and who move through the cycle experiencing promotion, repetition, drop-out, and at the end of the cycle, completion.</td>
</tr>
<tr>
<td>PUPIL-RELATED EXPENDITURE</td>
<td>All EXPENDITURE that is directly related to the number of pupils, for example copy books, other stationery, games (in pre-schools), etc. (See ANPRO-MODEL Table 3.1: Pre-school Sub-sector Model and 3.2: Primary and Secondary Sub-sector Models)</td>
</tr>
<tr>
<td>PUPIL-YEAR</td>
<td>One school year spent in a given grade by a pupil. Alternatively, a pupil enrolled in a given school year in any grade is counted as one PUPIL-YEAR. The PUPIL-YEAR represents a convenient non-monetary way of measuring educational inputs (teachers, school buildings, classrooms, equipment, etc.). One PUPIL YEAR stands for all the resources spent to keep one pupil in school for one year. Two PUPIL-YEARS stands for all the resources spent to keep one pupil in school for two years or, alternatively, to keep two pupils in school for one year, and so on.</td>
</tr>
<tr>
<td>PUPIL-YEAR PER GRADUATE</td>
<td>The total number of PUPIL-YEARS spent in a given education cycle (level of education, e.g. Primary Education) by a PUPIL COHORT, divided by the number of GRADUATES from the same PUPIL COHORT.</td>
</tr>
<tr>
<td>RECURRENT EXPENDITURE</td>
<td>(see COSTS)</td>
</tr>
<tr>
<td>RE-INTEGRATION RATE</td>
<td>Number of pupils who dropped out during previous years and re-enter a public school at a given grade, expressed as a percentage of the drop-outs at the same grade the previous year. These re-entering pupils may have dropped out several years ago, but the estimate is based on the drop-outs of the previous year.</td>
</tr>
<tr>
<td>REPETITION RATE</td>
<td>The percentage of pupils in a given grade who remain enrolled in the same grade in the following school year, i.e. who repeat a class.</td>
</tr>
<tr>
<td>RETENTION RATE</td>
<td>The percentage of a PUPIL COHORT still enrolled in the last year of the cycle. (see also INTERNAL EFFICIENCY)</td>
</tr>
<tr>
<td>SCHOOL-AGE POPULATION</td>
<td>The total number of children in the officially defined school-age year (or range of years), whether they are enrolled in school or not.</td>
</tr>
<tr>
<td>SCHOOL-RELATED EXPENDITURE</td>
<td>EXPENDITURE directly related to the number of schools, for example blackboards, utilities, etc. (See ANPRO-MODEL Table 3.2)</td>
</tr>
</tbody>
</table>
| **SPECIAL PROGRAMMES** | SPECIAL PROGRAMMES represent a range of actions that are additional to the usual functioning and tasks of schools. Notably, they are actions considered of strategic importance to strengthen the overall functioning of education and/or to achieve national objectives. Special programmes are, for example: curriculum development; the introduction of FSQL standards, specific In-service Teacher Training programmes, etc. These programmes usually appear in specific BUDGET lines; they are not integrated or included in the normal BUDGET lines. These programmes function for a limited number of years only.

In the ANPRO-MODEL all SPECIAL PROGRAMMES are included under RECURRENT EXPENDITURE. |
| **STANDARD TEACHERS** | Teachers whose qualifications conform to the standards set by the Ministry of Education. |
| **SUPPORT FACILITIES** | Facilities that serve several education institutions in a province. They include Teacher Training Centres, resource centres, IT centres, bookstores, etc.

(See ANPRO-MODEL Sheet 4: Summary of Expenditure of All Sub-Sectors, Tables ES.7 and ES.8) |
| **SURVIVAL RATE** | The percentage of a PUPIL COHORT eventually reaching the end of the cycle, independent of the number of years spent in school. |
| **TARGET** | TARGETS translate goals and objectives (which are often only in verbal form) into figures which indicate what (how much) has to be attained and by when. National TARGETS are decided by the Ministry of Education. Provincial TARGETS are decided by provincial education authorities.

All TARGETS are INDEPENDENT VARIABLES. The TARGETS are inputted into the Model. They are not calculated by the Model.

(see also Handbook Section 4.1) |
| **TEACHER-CLASS RATIO** | (see PUPIL-CLASS RATIO) |
| **TRANSITION RATE** (from Primary to Secondary Education) | The number of students entering the first grade of Secondary Education, expressed as percentage of the GRADUATES of Primary Education. |
| **VARIABLES** | (see DEPENDENT VARIABLES and INDEPENDENT VARIABLES) |
The CD-ROM enclosed below contains the Handbook for Decentralized Education Planning and:

1) the Excel Workbook for the ANPRO-Model,
2) the Excel Workbook for the Analytical Tools (Population and Graphics),
3) the Excel Workbook for Monitoring Plan Implementation.

Examples of the ANPRO-Model Sheets are contained in Annex III of the Handbook.

For any questions or more information about this CD-ROM, please contact

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Implementing National EFA Plans

Handbook for Decentralized Education Planning

CONTENTS OF CD-ROM:
1. the Handbook (pdf file)
2. the ANPRO-Model (Excel workbook)
3. the Excel workbook for Analytical Tools (Population and Graphics)
4. the Excel workbook for Monitoring Plan Implementation
By adopting the Dakar Framework for Action at the World Education Forum (Dakar, Senegal, April 2000), all governments and the international community committed themselves to ensuring that Education for All (EFA) goals and targets are achieved by 2015. As the first step to honouring this commitment, the countries concerned have prepared national EFA plans which provide a strategic framework to guide the long-term education development process. These plans provide the principle reference for national and international efforts to jointly support the development of the education sector.

Implementation of the EFA plans is now in full progress everywhere. In many countries, this is part of the process of modernizing public sector management. Of the principle features of public sector modernization, three are directly shaping the way in which the education sector will be functioning in the future: decentralization, international commitments, and program-based resource allocation to education.

Decentralization gives education authorities below the central level significantly increased responsibilities for planning and the preparation of implementation programs. This serves to introduce efficient resource management, facilitate delivery of education services and improve the quality of the education process as a whole. Roles, functions and tasks of central level education authorities are changing accordingly.

Program-based approaches (PBA) to resource allocation to education include Medium-Term Expenditure Framework (MTEF), Targeted Budget Support (TBS), and Sector-Wide Approach (SWAp). The effectiveness of these approaches depends on modern education planning capacity at decentralized levels.

The purpose of this Handbook is to contribute to enabling education planning staff and decision makers in decentralized education administrations in Ministries of Education to develop the capacity needed to (i) actively contribute to the shaping of their new functions, and (ii) carry out new management functions and tasks in the areas of planning, program preparation and implementation monitoring. The Handbook provides technical information of an innovative kind concerning modern planning concepts and the use of modern IT-based planning tools, in particular, in the form of an analysis and projection model, the ANPRO-Model. The Handbook is also intended to be useful for staff and consultants of international funding and technical assistance agencies.

For information or to order copies of this Handbook, please contact:

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