Implementing
National EFA Plans

Handbook for Decentralized Education Planning

UNESCO Bangkok
Asia and Pacific Regional Bureau for Education

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CD-ROM:

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

Acronyms and Abbreviations

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

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.

Sheldon Shaeffer
Director, UNESCO Bangkok
Asia and Pacific Regional Bureau for Education

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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.

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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.

Introduction

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[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.

[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 MODERNIZATION OF EDUCATION SECTOR MANAGEMENT

1.1 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.

Education sector management functions and tasks are being decentralized to 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 are increasingly reflected in national education strategies and planning

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')[1], 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)[2], Primary Education, Lower Secondary Education (LSE), and Non-Formal Education (NFE).[3] 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.[4]

[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[5]:

- 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.[6] 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).

Modernization of public sector management includes new programme-based approaches for education planning

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:

[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 approch 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:

Decentralization significantly changes functions and tasks of the Ministry of Education and of provincial education authorities

- 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.

Programme-based education planning approaches require external partners to work within the national programme framework

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.

Modern management capacity is needed at central level (i) to advise the provincial education authorities in their education planning, and (ii) to ensure nationwide coherence and comparability of planning and implementation monitoring

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 education plans. It is the reference framework for provincial plans

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.

PLANNNG 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.

Target setting is the most critical step in the education planning process. It takes place in the form of a dialogue between the education sector stakeholders

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:

Provincial targets (i) must respect national policy goals and (ii) must be feasible

- 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 THE ANALYSIS AND PROJECTION MODEL (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 **ANPRO-Model** is a practical tool for data analysis and projections*

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.[1] 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.[2] 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.
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.

[2] 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.

*The **ANPRO-Model** responds to education planning needs perceived in countries at central and provincial level. The Model is based on concrete country experience*

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*

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;

SUB-SECTOR MODEL 4	Pre-service Teacher Training sub-sector;
SUB-SECTOR MODEL 5	Professional Secondary Education sub-sector; and
SUB-SECTOR MODEL 6	Non-Formal Education (NFE) sub-sector (ages 15-34).

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.

*The **ANPRO-Model** contains a specific gender component*

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:

Name of the sheet	Principal information contained in the Sheets
SHEET 1: **Title**	Cover Page
SHEET 2: **Contents**	Table of Contents of the Model (with hyperlinks to each of the sub-sector models)
SHEET 3: **Targets**	Summary of the Principal Provincial Targets
SHEET 4: **Exp Summ**	Summary of expenditures from the sub-sector models
SHEET 5: **Preschool**	Analysis and projection of the Pre-school Education sub-sector: enrolment, internal efficiency, teachers, financial resource requirements, etc.
SHEET 6: **Primary**	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.
SHEET 7: **Secondary**	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.
SHEET 8: **TT**	Projection of the Pre-Service Teacher Training sub-sector: enrolment and graduates, recurrent and capital expenditure.
SHEET 9: **In-SceTrg**	Summary of all In-Service Teacher Training projections contained in Sheets 5, 6, and 7.
SHEET 10: **Prof**	Projection of the Technical-Vocational Secondary sub-sector: enrolment and graduates, recurrent and capital expenditure.
MODEL SHEET 11: **NFE**	Projection of Non-Formal Education sub-sector activities: 1) Primary and Secondary (Grades 7 to 9 equivalency programmes; 2) literacy programmes for young adults.
SHEET 12: **Girls**	Enrolment projection of formal general education (Pre-school, Primary and Secondary) for girls.

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)

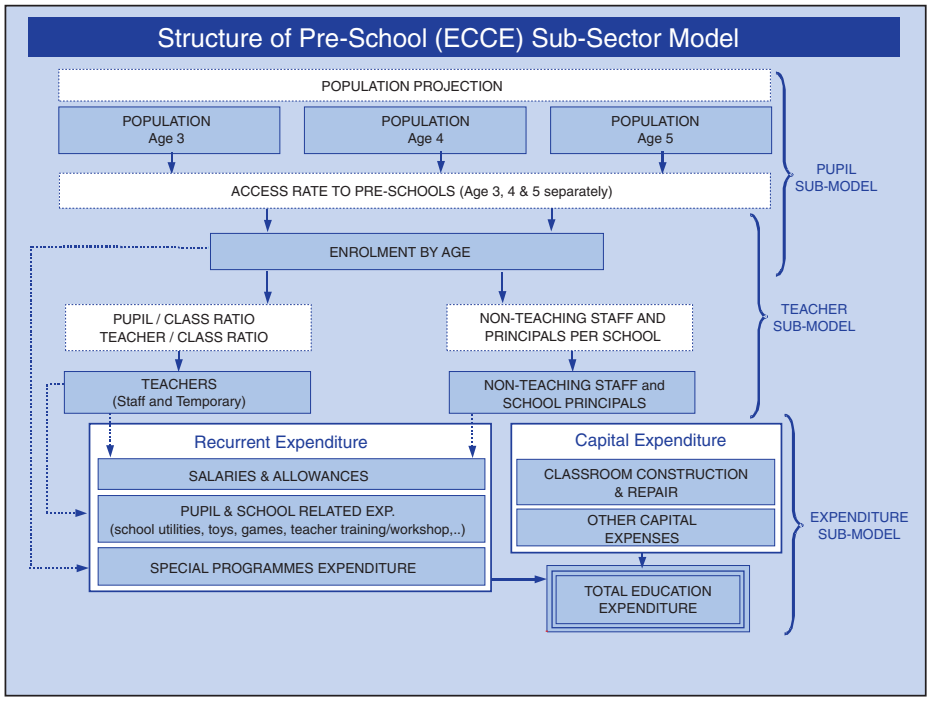


Figure 2. Sub-Sector Model 2: Primary Education

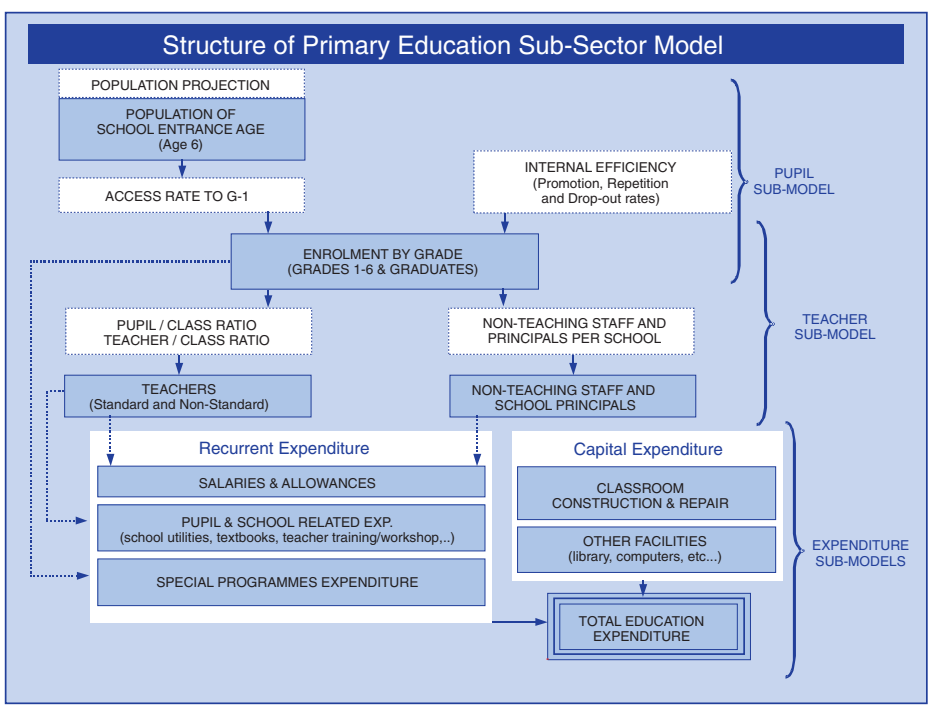


Figure 3. Sub-Sector Model 3: Secondary Education

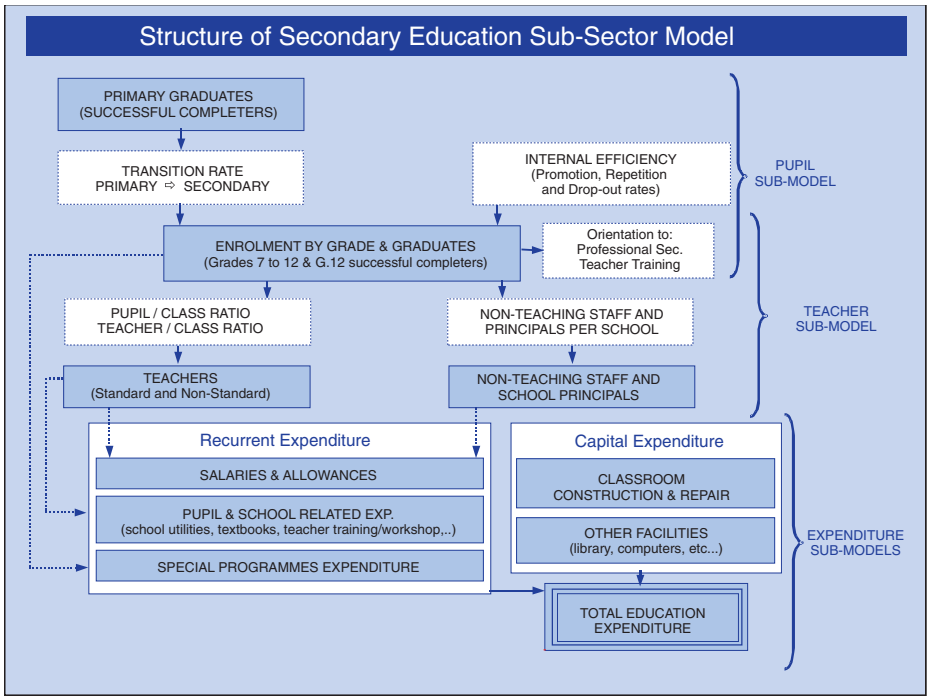


Figure 4. Sub-Sector Model 4: Teacher-Training

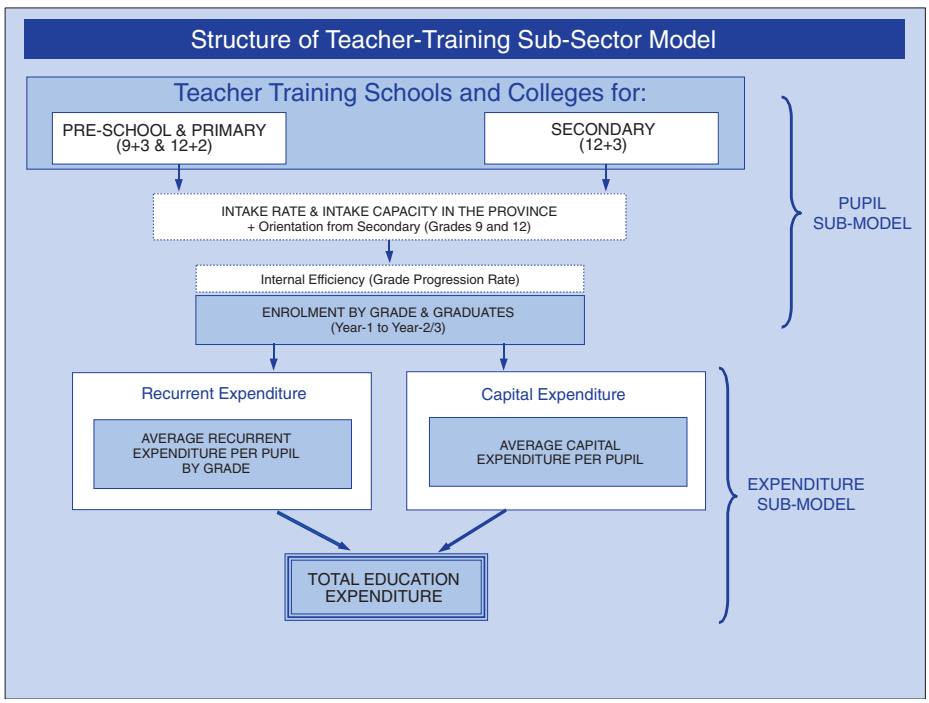


Figure 5. Sub-Sector Model 5: Professional Secondary Education

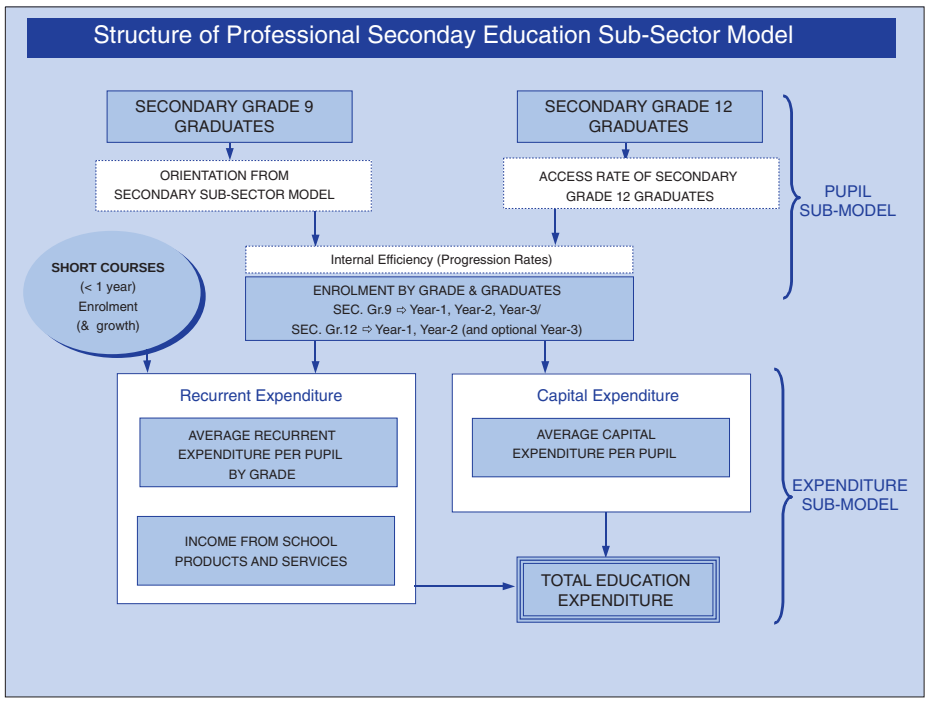
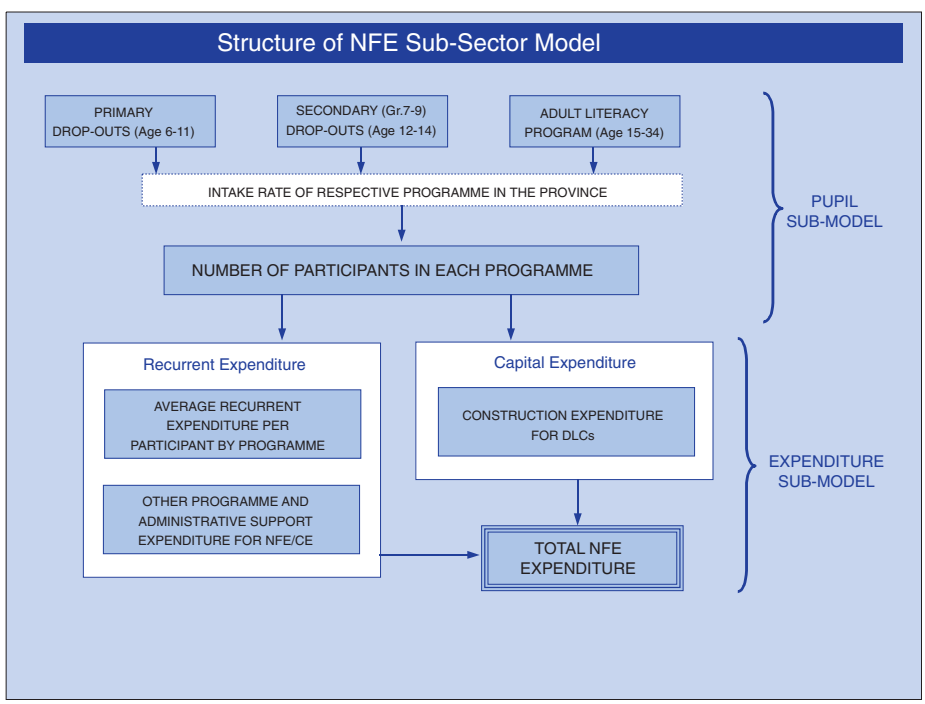


Figure 6. Sub-Sector Model 6: Non-Formal Education



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 HOW TO USE THE ANPRO-MODEL

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.

- I**NDEPENDENT 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**.

Year		Pupil / Class
2004/05	(base year)	(baseline data) 18
2005/06	(projection)	20
2006/07	(projection)	22
2007/08	(projection)	24
2008/09	(projection)	26
2009/10	(projection)	28
2010/2011	(projection)	30

Targets

☞ **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 reachthem. 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

5 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

5 TECHNICAL NOTES ON SPECIFIC FEATURES OF THE ANPRO-MODEL

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.

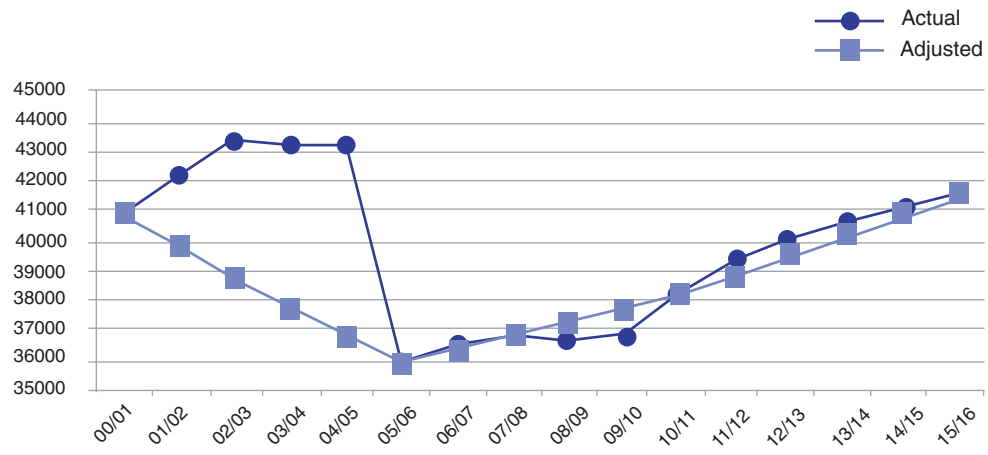
The result is shown in the Table 1 below. The uneven growth rate of Actual Projection is smoothened in the Column Adjusted Projection.

Table 1. Example Actual and Adjusted Population Projection

Year	Actual Population Projection	Growth Rate	Adjusted Population Projection	Growth Rate
00/01	40,984	2.1%	40,984	
01/02	42,155	2.9%	39,912	-2.6%
02/03	43,328	2.8%	38,868	-2.6%
03/04	43,146	-0.4%	37,852	-2.6%
04/05	43,146	0.0%	36,862	-2.6%
05/06	35,898	-16.8%	35,898	-2.6%
06/07	36,513	1.7%	36,347	1.3%
07/08	36,825	0.9%	36,801	1.3%
08/09	36,819	0.0%	37,261	1.3%
09/10	36,807	0.0%	37,727	1.3%
10/11	38,199	3.8%	38,199	1.3%
11/12	39,329	3.0%	38,864	1.7%
12/13	40,124	2.0%	39,541	1.7%
13/14	40,643	1.3%	40,230	1.7%
14/15	41,106	1.1%	40,931	1.7%
15/16	41,644	1.3%	41,644	1.7%

The population figures evolve more evenly within each five-year period, and the major changes around 2004/2005 and 2009/1010 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

Columns		
A	B	C
Years	Actual Projection	Adjusted Projection
2000	40,980	40,980
2001	42,160	
2002	43,330	
2003	43,150	
2004	43,150	
2005	35,900	35,900
2006	36,510	
2007	36,830	
2008	36,820	
2009	36,810	
2010	38,200	38,200
2011	39,330	
2012	40,120	
2013	40,640	
2014	41,110	
2015	41,640	41,640

☞ 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:

$$Population_{2005} = Population_{2000} \times (1+r)^{5}$$

$$\frac{Population_{2005}}{Population_{2000}} = (1+r)^{5}$$

$$\sqrt[5]{\frac{population\ 2005}{population\ 2005}} = (1+r)$$

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

$$Population_{2001} = Population\ 2000 \times (1+r);$$
$$Population_{2002} = Population\ 2001 \times (1+r);$$

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)

1.1	Demographic Data: School-age Population			
	Age 6		Age Group 6-11	
YEAR	Number	Growth Rate	Number	Growth Rate
04/05	88,205	538,106		
05/06	89,969	2.00%	548,868	2.00%
06/07	91,706	1.93%	559,462	1.93%
07/08	93,415	1.86%	569,888	1.86%
08/09	95,096	1.80%	580,146	1.80%
09/10	96,750	1.74%	590,235	1.74%
10/11	98,376	1.68%	600,156	1.68%
11/12	99,975	1.63%	609,910	1.63%
12/13	101,546	1.57%	619,495	1.57%
13/14	103,090	1.52%	628,911	1.52%
14/15	104,606	1.47%	638,160	1.47%
15/16	106,094	1.42%	647,241	1.42%

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

1.2	Access Rate and Entrants into Grade 1			% Entrants into:		Entrants into:	
YEAR	Access rate*	Entrants into Grade 1 Number	Growth	Public Schools	Private Schools	Public Schools	Private Schools
04/05	94.2%	83,089		99.8%	0.2%	82,923	166
05/06	95.2%	85,623	3.0%	99.7%	0.3%	85,366	257
06/07	96.1%	88,157	3.0%	99.6%	0.4%	87,804	353
07/08	97.1%	90,706	2.9%	99.5%	0.5%	90,252	454
08/09	98.1%	93,261	2.8%	99.3%	0.7%	92,608	653
09/10	99.0%	95,812	2.7%	99.1%	0.9%	94,950	862
10/11	100.0%	98,376	2.7%	98.8%	1.2%	97,195	1,181
11/12	100.0%	99,975	1.6%	98.4%	1.6%	98,395	1,580
12/13	100.0%	101,546	1.6%	98.0%	2.0%	99,556	1,990
13/14	100.0%	103,090	1.5%	97.7%	2.3%	100,678	2,412
14/15	100.0%	104,606	1.5%	97.3%	2.7%	101,761	2,845
15/16	100.0%	106,094	1.4%	96.9%	3.1%	102,805	3,289

* 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

(using the Primary Education [public] sub-sector model as an example)

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

2.1	Pupil/Class* Ratios						Total Pupil/
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Class Ratio
04/05	40.7	41.1	40.4	40.3	38.0	36.7	39.6
05/06	39.7	40.1	39.5	39.3	37.3	36.1	38.7
06/07	38.7	39.1	38.5	38.4	36.6	35.5	37.8

Columns **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.

Column **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.

TABLE 2.2 – CLASSES

2.2	Classes* Classes							/	Total
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	school	Schools
04/05	2,114	2,105	2,099	1,976	1,947	1,931	12,172	9.4	1,295
05/06	2,218	2,203	2,195	2,076	2,051	2,049	12,792	9.5	1,347
06/07	2,335	2,314	2,305	2,189	2,164	2,179	13,486	9.5	1,420
07/08	2,452	2,429	2,421	2,321	2,300	2,319	14,242	9.6	1,484
08/09	2,579	2,556	2,549	2,457	2,439	2,476	15,056	9.7	1,552
09/10	2,711	2,686	2,680	2,596	2,586	2,639	15,898	9.7	1,639
10/11	2,840	2,820	2,821	2,749	2,746	2,806	16,782	9.8	1,712

Columns **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).

Column **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).

TABLE 2.3 – TEACHERS PER CLASS

2.3	Teachers per Class, Principals and Other Staff per School and Attrition Rates								Pupil/
	Teachers per Class*			Principals	Non-Teach.	Attrition rates			Teacher
YEAR	Standard	Non-Standard	All Teachers	per School	Staff per sch.	Teach. staff	Principals	Other Staff	Ratio
04/05	0.93	0.17	1.09	1.20	3.18	2.5%	3.0%	2.0%	36.2
05/06	1.03	0.17	1.20	1.22	3.20	2.5%	3.0%	2.0%	32.3
06/07	1.13	0.13	1.26	1.23	3.20	2.5%	3.0%	2.0%	30.0
07/08	1.20	0.10	1.30	1.25	3.20	2.5%	3.0%	2.0%	28.4
08/09	1.23	0.07	1.30	1.27	3.20	2.5%	3.0%	2.0%	27.8

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

2.4	School Staff by Function					
	Primary Teachers			School	Non-Teach.	All School
YEAR	Standard	Non-Standard	Needed	Principals	Staff	Staff
04/05	11,267	2,048	13,315	1,554	4,118	18,987
05/06	13,176	2,175	15,351	1,643	4,310	21,304
06/07	15,239	1,753	16,992	1,747	4,544	23,283
07/08	17,090	1,424	18,514	1,855	4,749	25,118

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 **A**NPRO-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, toilettes, 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).

Technical Note 8:
RECURRENT AND CAPITAL EXPENDITURE

NOTE! The provincial budget categories used below are FICTITIOUS. They are used only for demonstration purposes. However, most countries have budget categories which are identical or very similar to these.

The recurrent and capital expenditure categories used in the ANPRO-Model are based on the International Standard Classification of Education Statistics and the Public Sector Finance Categories recommended by the OECD. These expenditure categories are used for education planning in the OECD countries and in all other countries that have introduced a modern public finance system.

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

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

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

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

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)

X (100 % + annual increase in the given year + 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:

Classes in single-shift classrooms =
Total classes
– *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):

Need for classrooms =
(classes in double-shift classrooms / 2)
\+ *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:

available classrooms the previous year (same Col., previous year)
\+ *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:

the number of temporary classrooms to be replaced (Target in Col. C)
\+ *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 ANALYTICAL TOOLS

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

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

☞ 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[1]; however, the Word file 'Text' will not.

[1] 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 2. Extracting Tables from the ANPRO-Model: Example of Summary Table, Scenario 2

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

- 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 <Ctr> + <PgDn>.

Table 3. Contents of the Population Graphs

Age	Provincial trend compared to the national trend	Boys compared to girls
3	x	x
4	x	x
5	x	x
6	x	x
6-11	x	x
12-14	x	x
15-17	x	x
15-34	x	x

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>.

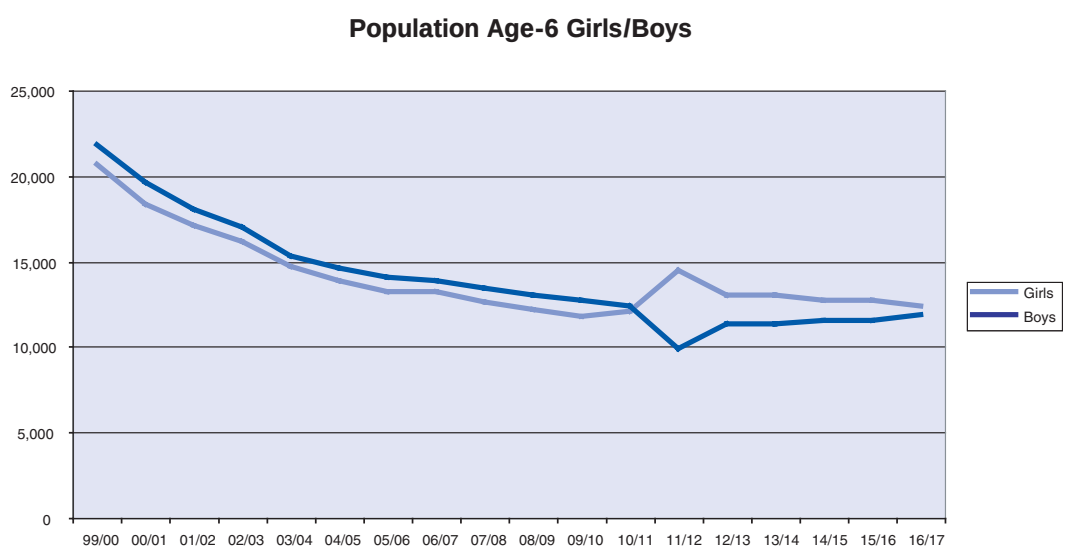
6.3 Monitoring Data with Graphs

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



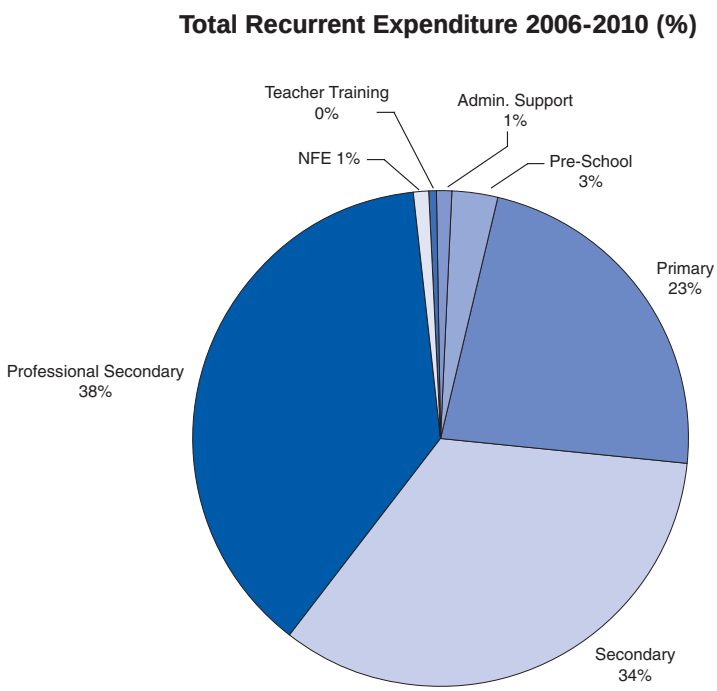
Observation

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



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.

7 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 MONITORING OF PLAN IMPLEMENTATION AND UPDATING OF THE EDUCATION PLAN

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".

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

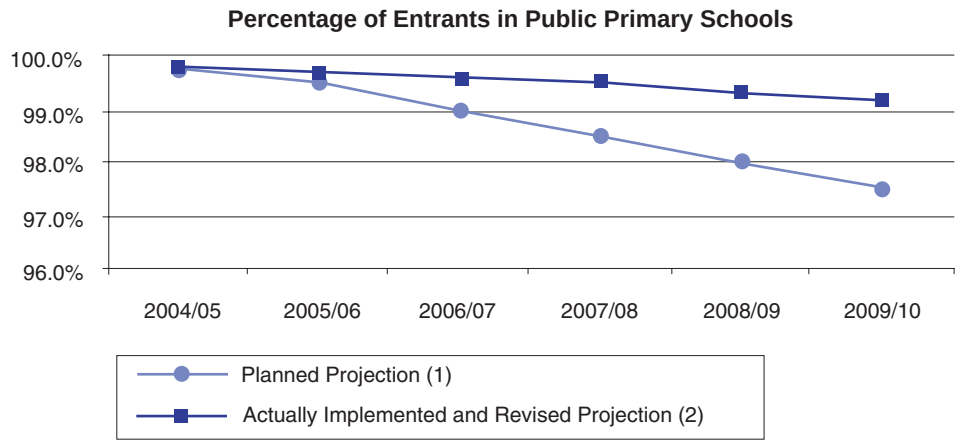
shows the difference between what was projected and what was actually achieved. This is the crucial monitoring information which will be used in assessing the progress of plan implementation and in making decisions to revise the targets for the remainder of the plan period.

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

Entrants into Public Primary Schools as % of Total Entrants into Grade 1			
Year	**Plan Targets (1)**	**Actually implemented (by end of 2004/05) And Revised Targets (2005/06 - 2009/10) (2)**	**Difference (2) - (1)**
2004/5	99.8%	(actually implemented) 99.8%	0.0%
2005/6	99.5%	(revised projection) 99.7%	0.2%
2006/7	99.0%	(revised projection) 99.6%	0.6%
2007/8	98.5%	(revised projection) 99.5%	1.0%
2008/9	98.0%	(revised projection) 99.3%	1.3%
2009/10	97.5%	(revised projection) 99.1%	1.6%

Figure 1: Monitoring Tool, Example 1



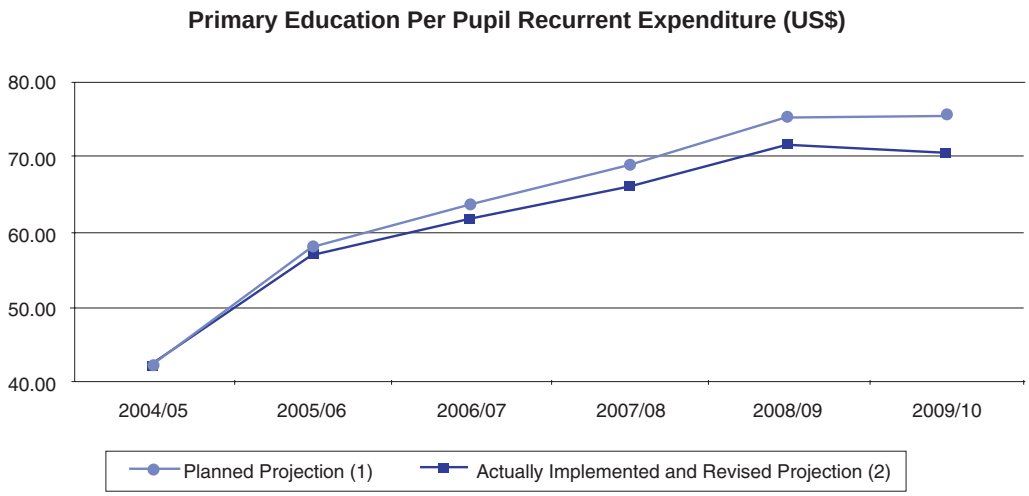
Observation

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

Primary Education Per Pupil Recurrent Expenditure (US$)			
Year	**Original Plan Indicators (1)**	**Actually Implemented (by end of 2004/05) And Revised Targets (2005/06 - 2009/10) (2)**	**Difference (2) - (1)**
2004/5	42.06	(actually implemented) 42.06	0.00
2005/6	57.93	(revised projection) 56.93	-1.00
2006/7	63.53	(revised projection) 61.73	-1.80
2007/8	68.85	(revised projection) 66.10	-2.75
2008/9	75.23	(revised projection) 71.58	-3.65
2009/10	75.46	(revised projection) 70.46	-5.00

Figure 2: Monitoring Tool, Example 2



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**:

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

☞ 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.

☞ 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 mountainous 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 1.5: Implementation of the curriculum reform (2005-2007)

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

PRIMARY EDUCATION
⇨ ACCESS

ACTION PROGRAMME	PROGRAMME COMPONENTS
1.1 Provision of an affordable school place for all children in Primary school age	1.1.1 School mapping (GIS) 1.1.2 Provision of schools (sites, construction and maintenance) 1.1.3 Provision of a minimum package of equipment and teaching-learning materials 1.1.4 Teacher recruitment and deployment 1.1.5 Provision of basic hygiene (water and sanitation) facilities in all Primary schools 1.1.6 Development of affordable cost sharing arrangements 1.1.7 Parental awareness programmes
1.2 Programme to ensure that all children complete the full Primary cycle	1.2.1 Research to identify the causes of drop-out and repetition 1.2.2 Design and trial of measures aimed at students at risk of drop-out and repetition 1.2.3 Implementation, monitoring of implementation and evaluation of results
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	1.3.1 Construction of schools, including boarding schools in sparsely populated areas for upper grades 1.3.2 Recruitment of teachers and promotion of teacher recruitment from disadvantaged areas *(see also Programme Component 1.6.6)* 1.3.3 Bilingual education and support to national language development in early Primary grades 1.3.4 Training and support to multi-grade teaching 1.3.5 Training and support to inclusive education 1.3.6 Minimum package of equipment and learning materials 1.3.7 Provision of free textbooks to children in difficult circumstances and from disadvantaged families 1.3.8 Elimination of user costs for children in difficult circumstances and from disadvantaged families 1.3.9 Community participation in school management, including capacity building of parent-teacher associations 1.3.10 Monitoring of implementation and evaluation of results

ACTION PROGRAMME	PROGRAMME COMPONENTS
1.4 Provision of full Primary Education to out-of-school youth	1.4.1 Research to identify out-of-school youth target groups and causes for non-enrolment 1.4.2 Design and trial of measures, including appropriate materials, to reintegrate out-of-school youth into the formal system 1.4.3 Implementation, monitoring of implementation and evaluation of results
1.5 Implementation of the new curriculum reform (2005-2007)	1.5.1 Preparation, testing and introduction of the new curriculum in all Grades 1.5.2 Production and distribution of new textbooks and teaching and learning materials 1.5.3 Teacher training for competent delivery of the new curriculum *(see also Action Programme 1.6)* 1.5.4 Development of IT component within the curriculum and related teacher training 1.5.5 Provision of advisory support for the effective implementation of the new curriculum in schools 1.5.6 Monitoring of implementation and evaluation of results
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	1.6.1 Strengthening of in-service and pre-service training programs for teachers and principals - Development, testing and implementation of intensive training programs; - Improvement of the delivery capacity of teacher trainers and teacher training institutions 1.6.2 Development of teacher professional standards (teacher charter) 1.6.3 Establishment of a system of pedagogical support and quality assurance for school improvement 1.6.4 Training of school principals in school management and in pedagogical support to teachers 1.6.5 Revision of the terms of service for teachers and principals 1.6.6 Promotion of teacher recruitment from disadvantaged areas *(see also Programme Component 1.3.2)*

ACTION PROGRAMME	PROGRAMME COMPONENTS
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 1.8.3 Application of minimum national quality standards (FSQL) and upgrading all Primary schools to meet the standards 1.8.4 Provision of free textbooks to all students (free distribution and loan system) 1.8.5 Establishment of school libraries and provision of basic teaching-learning materials and IT facilities
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

PRIMARY EDUCATION ⇨ MANAGEMENT	
ACTION PROGRAMME	**PROGRAMME COMPONENTS**
1.10 Policy setting and implementation at national levels	1.10.1 Development of information-based policy setting 1.10.2 Review and modernization of the system of monitoring policy implementation 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 1.10.5 Preparation and implementation of a programme for the creation of a nine-year basic education cycle 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: The ANALYSIS and PROJECTION MODEL (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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Sheet 2: Table of Contents of the Model ____ 83
Sheet 3: Summary of Principal Targets ____ 84
Sheet 4: Summary of Expenditure Projections ____ 89
Sheet 6: Primary Education Sub-sector Model ____ 93

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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Template ANPRO-Model
of 26 May, 2005

Model Sheet – 3
Summary of Principal Targets

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.

Principal Targets	FINAL Template ANPRO - Model (26 May,2005)			26-May-05
Item	Base year 2004/05	2005/06	2010/11	2015/16
Pre-School (ECCE)				
1 Enrolment Rates (Public + Private)				
1.1 Age 3	4.3%	4.5%	4.5%	4.5%
1.2 Age 4	8.9%	8.9%	8.9%	8.9%
1.3 Age 5	14.8%	22.6%	61.3%	100.0%
2 Private Pre-School Enrolment as % of Total Enrolment				
2.1 Age 3	2.4%	9.0%	42.0%	75.0%
2.2 Age 4	3.5%	9.0%	42.0%	75.0%
2.3 Age 5	3.4%	5.1%	13.4%	21.7%
3 (A) Pupil/Class Ratios				
3.1 Pupil/Class Ratios in Public Pre-Schools	15.2	14.7	13.3	13.0
3 (B) Teacher/Class Ratios in Public Pre-Schools				
3.2 Staff teachers	0.67	0.87	1.30	1.30
3.3 Temporary teachers	0.44	0.43	0.00	0.00
3 (C) Principals and Other Admin. Staff per Public Pre-school				
3.4 Principals	1.11	1.30	1.30	1.30
3.5 Other admin. staff	4.19	4.10	4.10	4.10
4 Pupil and School Related Expenditure				
4.1 Pupil-related expenditure / pupil (US $)	15.0	18.0	20.0	25.0
4.2 School-related expenditure / school (US $)	103.0	120.0	200.0	300.0
5 In-service Teacher Training				
(A) Newly Recruited Teachers and Principals				
5.1 % of teachers trained	50.0%	100.0%	100.0%	100.0%
5.2 Average number of training days per year	12	30	30	30
5.3 Average training expenditure / day (US $)	45.0	47.5	50.0	75.0
(B) All other Teachers and Principals				
5.5 % of teachers trained	10.0%	100.0%	100.0%	100.0%
5.6 Average number of training days per year	5	10	20	30
5.7 Average training expenditure / day (US $)	45.0	47.5	50.0	75.0
6 Special Programmes ('000 US$)				
6.1 Programme 1	1,500	1,583	2,000	2,000
6.2 Programme 2	500	500	500	0
6.3 Programme 3	0	0	0	0
6.4 Programme 4	0	0	0	0
6.5 Programme 5	0	0	0	0
6.6 Programme 6	0	0	0	0
6.7 Programme 7	0	0	0	0
6.8 Programme 8	0	0	0	0
6.9 Programme 9	0	0	0	0
7 Public grants to Private Pre-Schools: Per Pupil (US $)	160.00	160.00	160.00	160.00
8 Classroom Construction and other Capital expenditure				
8.1 Classes per Classroom	1.39	1.18	1.10	1.05
8.2 Classrooms to be replaced: % of total	6.0%	4.0%	0.0%	0.0%
8.3 Classrooms to repair: % of total	5.0%	5.0%	5.0%	5.0%
8.4 Outdoor equipment ('000 US$)	10	15	15	15
Primary				
1 Access Rate and Entrants into Grade 1				
1.1 Access rate	94.2%	95.2%	100.0%	100.0%
1.2 % entrants into Public schools	99.8%	99.7%	98.8%	96.9%
2 (A) Promotion Rates (Public Schools)				
2.1 Grade 1	97.0%	97.5%	99.3%	99.3%
2.2 Grade 2	94.0%	94.7%	98.2%	98.2%
2.3 Grade 3	89.8%	91.1%	97.5%	97.5%
2.4 Grade 4	89.2%	90.6%	97.5%	97.5%
2.5 Grade 5	87.8%	89.4%	97.5%	97.5%
2.6 Grade 6	77.8%	80.3%	92.5%	92.5%
2 (B) Repetition Rates (Public Schools)				
2.7 Grade 1	2.3%	2.0%	0.5%	0.5%
2.8 Grade 2	4.8%	4.2%	1.0%	1.0%
2.9 Grade 3	5.2%	4.5%	1.0%	1.0%
2.10 Grade 4	5.6%	4.8%	1.0%	1.0%
2.11 Grade 5	6.2%	5.3%	1.0%	1.0%
2.12 Grade 6	11.0%	10.0%	5.0%	5.0%
2 (C) Re-integration Rates into Public Schools (as percentage of previous year drop-out)				
2.13 Grade 1	3.4%	5.7%	30.0%	50.0%
2.14 Grade 2	3.1%	5.2%	30.0%	50.0%
2.15 Grade 3	2.8%	5.2%	30.0%	50.0%
2.16 Grade 4	3.7%	5.1%	30.0%	50.0%
2.17 Grade 5	3.4%	5.0%	30.0%	50.0%
2.18 Grade 6	3.3%	5.0%	30.0%	50.0%

Principal Targets	FINAL Template ANPRO - Model (26 May,2005)			26-May-05
Item	Base year 2004/05	2005/06	2010/11	2015/16
3 Pupil/Class Ratio				
3.1 Grade 1	40.7	39.7	34.9	30.0
3.2 Grade 2	41.1	40.1	35.1	30.0
3.3 Grade 3	40.4	39.5	34.7	30.0
3.4 Grade 4	40.3	39.3	34.7	30.0
3.5 Grade 5	38.0	37.3	33.6	30.0
3.6 Grade 6	36.7	36.1	33.1	30.0
4 Teacher/Class Ratio and Non-teaching Staff per School				
4.1 Total Teachers (standard & non-standard) per class	1.094	1.200	1.300	1.300
4.2 Standard Teachers (qualified & trained) per class	0.926	1.030	1.300	1.300
4.3 Non-standard Teachers per class	0.168	0.170	0.000	0.000
4.4 Principals per School	1.200	1.220	1.300	1.300
4.5 Other Non-Teaching Staff per School	3.180	3.200	3.200	3.200
5 Pupil and School Related Expenditure				
5.1 Provision of Textbooks: % pupil receiving textbooks	8.0%	16.4%	58.2%	100.0%
5.2 Provision of Teacher's Guide: % teachers receiving guides	50.0%	58.3%	100.0%	100.0%
5.3 Pupil-related expenditure / pupil (US$)	5.00	6.00	10.50	15.00
5.4 School-related expenditure / school (US$)	320.00	345.00	475.00	600.00
6 In-service Teacher Training				
(A) New recruitment				
6.1 % of teachers trained	100.0%	100.0%	100.0%	100.0%
6.2 Average number of training days per year	4	30	30	30
(B) All other Teachers and Principals				
6.3 % of teachers trained	5.0%	13.5%	57.0%	100.0%
6.4 Average number of training days per year	4	10	20	30
7 Special Programmes (in '000 US$)				
7.1 Programme 1	1,200	1,200	1,200	0
7.2 Programme 2	0	3,000	0	0
7.3 Programme 3	400	400	400	0
7.4 Programme 4	0	0	0	0
7.5 Programme 5	0	0	0	0
7.6 Programme 6	0	0	0	0
7.7 Programme 7	0	0	0	0
7.8 Programme 8	0	0	0	0
7.9 Programme 9	0	0	0	0
8 Classroom Construction and Other Capital Expenditure				
8 (A) Classrooms				
8.1 Classrooms in double-shift	1,648	1,468	0	0
8.2 Number of classrooms to replace per year	500	500	650	0
8.3 Percentage of classrooms to repair	10.0%	10.0%	10.0%	10.0%
8 (B) Computer Lboratories				
8.4 To build	209	150	73	80
8.5 To upgrade	100	100	100	100
8 (C) School Libraries				
8.6 To build	189	150	73	80
8.7 To upgrade	100	100	100	100
Secondary				
1 Transition Rate from Primary				
1.1 to Public Secondary	93.6%	94.0%	96.0%	98.0%
1.2 to Private Secondary	0.6%	0.8%	1.8%	2.0%
2 (A) Promotion Rates (Public Schools)				
2.1 Grade 7	88.6%	89.9%	96.0%	96.0%
2.2 Grade 8	87.3%	88.7%	96.0%	96.0%
2.3 Grade 9	92.2%	92.9%	96.0%	96.0%
2.4 Grade 10	93.2%	93.7%	96.0%	96.0%
2.5 Grade 11	92.4%	93.0%	96.0%	96.0%
2.6 Grade 12	91.7%	92.4%	96.0%	96.0%
2 (B) Repetition Rates (Public Schools)				
2.7 Grade 7	5.7%	5.1%	2.0%	2.0%
2.8 Grade 8	4.4%	4.0%	2.0%	2.0%
2.9 Grade 9	3.7%	3.4%	2.0%	2.0%
2.10 Grade 10	4.2%	3.8%	2.0%	2.0%
2.11 Grade 11	4.8%	4.3%	2.0%	2.0%
2.12 Grade 12	6.7%	5.9%	2.0%	2.0%
2 (C) Re-integration Rates to Public Schools (as percentage of previous year drop-out)				
2.13 Grade 7	5.1%	5.7%	30.0%	50.0%
2.14 Grade 8	4.3%	5.2%	30.0%	50.0%
2.15 Grade 9	4.7%	5.2%	30.0%	50.0%
2.16 Grade 10	3.6%	5.1%	30.0%	50.0%
2.17 Grade 11	3.2%	5.0%	30.0%	50.0%
2.18 Grade 12	3.8%	5.0%	30.0%	50.0%
2 (D) Orientation from Grade 9 to Professional Secondary and Teacher Training				
2.19 % of Grade-9 graduates orientated to Professional Secondary	0.2%	0.3%	0.8%	1.4%
2.20 % of Grade-9 graduates oriented to Teacher Training	0.1%	0.2%	0.2%	0.2%

Principal Targets FINAL Template ANPRO - Model (26 May,2005) 26-May-05

Item	Base year 2004/05	2005/06	2010/11	2015/16
3 Pupil/Class Ratio				
3.1 Grade 7	40.7	39.7	34.9	30.0
3.2 Grade 8	41.1	40.1	35.1	30.0
3.3 Grade 9	40.5	39.5	34.7	30.0
3.4 Grade 10	40.2	39.3	34.7	30.0
3.5 Grade 11	38.0	37.3	33.6	30.0
3.6 Grade 12	36.7	36.1	33.1	30.0
2.7 Grade 7	5.7%	5.1%	2.0%	2.0%
2.8 Grade 8	4.4%	4.0%	2.0%	2.0%
2.9 Grade 9	3.7%	3.4%	2.0%	2.0%
2.10 Grade 10	4.2%	3.8%	2.0%	2.0%
2.11 Grade 11	4.8%	4.3%	2.0%	2.0%
2.12 Grade 12	6.7%	5.9%	2.0%	2.0%
2 (C) Re-integration Rates to Public Schools (as percentage of previous year drop-out)				
2.13 Grade 7	5.1%	5.7%	30.0%	50.0%
2.14 Grade 8	4.3%	5.2%	30.0%	50.0%
2.15 Grade 9	4.7%	5.2%	30.0%	50.0%
2.16 Grade 10	3.6%	5.1%	30.0%	50.0%
2.17 Grade 11	3.2%	5.0%	30.0%	50.0%
2.18 Grade 12	3.8%	5.0%	30.0%	50.0%
2 (D) Orientation from Grade 9 to Professional Secondary and Teacher Training				
2.19 % of Grade-9 graduates orientated to Professional Secondary	0.2%	0.3%	0.8%	1.4%
2.20 % of Grade-9 graduates oriented to Teacher Training	0.1%	0.2%	0.2%	0.2%
3 Pupil/Class Ratio				
3.1 Grade 7	40.7	39.7	34.9	30.0
3.2 Grade 8	41.1	40.1	35.1	30.0
3.3 Grade 9	40.5	39.5	34.7	30.0
3.4 Grade 10	40.2	39.3	34.7	30.0
3.5 Grade 11	38.0	37.3	33.6	30.0
3.6 Grade 12	36.7	36.1	33.1	30.0
4 Teacher/Class Ratio and Non-Teaching Staff per School				
4.1 Total Teachers (standard & non-standard) per class	1.82	1.80	1.80	1.80
4.2 Standard Teacher (qualified & trained) per class	1.64	1.67	1.80	1.80
4.3 Non-standard Teachers per class	0.18	0.13	0.00	0.00
4.4 Principals per School	1.32	1.36	1.58	1.80
4.5 Other Non-Teaching Staff per School	8.98	9.23	10.61	12.00
5 Pupil and School Related Expenditure				
5.1 Provision of Textbooks: % pupils receiving textbooks	8.0%	16.4%	58.2%	100.0%
5.2 Provision of Teacher's Guide: % teachers receiving guides	50.0%	58.3%	100.0%	100.0%
5.3 Pupil-related expenditure / pupil (US$)	10.00	10.00	10.00	15.00
5.4 School-related expenditure / school (US$)	1,227.00	1,227.00	1,227.00	1,500.00
6 In-service Teacher Training				
(A) New Recruitment				
6.1 % of teachers trained	100.0%	100.0%	100.0%	100.0%
6.2 Average number of training days per year	3	30	30	30
(B) All other Teachers and Principals				
6.3 % of teachers trained	13.5%	100.0%	100.0%	100.0%
6.4 Average number of training days per year	4	30	30	30
7 Special Programmes (in '000 US$)				
7.1 Programme 1	1,700	1,700	1,700	0
7.2 Programme 2	0	4,800	4,800	0
7.3 Programme 3	800	800	800	0
7.4 Programme 4	200	200	200	200
7.5 Programme 5	0	0	0	0
7.6 Programme 6	0	0	0	0
7.7 Programme 7	0	0	0	0
7.8 Programme 8	0	0	0	0
7.9 Programme 9	0	0	0	0
8 Classroom Construction and other Capital Expenditure				
8 (A) Classrooms				
8.1 Classrooms in double-shift	1,201	1,092	550	0
8.2 Number of classrooms to replace per year	250	250	250	0
8.3 Classrooms to repair	10.0%	10.0%	10.0%	10.0%

Principal Targets	FINAL Template ANPRO - Model (26 May,2005)			26-May-05
Item	Base year 2004/05	2005/06	2010/11	2015/16
8 (B) Computer Laboratories				
8.4 To build	32	100	67	60
8.5 To upgrade	32	50	50	50
8 (C) School Libraries				
8.6 To build	24	84	67	60
8.7 To upgrade	17	50	50	50
8 (D) Science Laboratories				
8.8 To build	11	80	67	60
8.9 To upgrade	22	50	50	50
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%	93.6%	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%	95.0%
1.2 Progression rate to year 3	91.0%	91.7%	95.0%	95.0%
1.3 Success at the end of year 3	95.2%	91.4%	97.5%	97.5%
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%	95.0%
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)	0.6%	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%

ANALYSIS and PROJECTION MODEL

TEMPLATE ANPRO – Model
26 May, 2005

Model Sheet – 4
Summary of Expenditure Projections

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.

ALL Education sub-sector	FINAL ANPRO-Model 26 May 2005	26-May-05

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

Recurrent Expenditure								
Salaries and Allowances	School Operating Expend. (1)	Spec. Progr. and Project Expenditure	Grants to Private Pre-schools	Other Expenditure	Total Recurrent Expenditure	Capital Expenditure	Total (Recurrent + Capital) Expenditure	Per Pupil Recurrent Expenditure (US$) (2)
2.246	0.555	2.000	0.125	0.000	4.925	3.461	8.386	209.61
3.563	3.043	2.083	0.339	0.000	9.027	3.473	12.500	301.79
4.601	3.556	2.167	0.592	0.000	10.916	3.059	13.975	299.88
5.723	4.074	2.250	0.896	0.000	12.943	3.024	15.967	300.62
7.153	4.524	2.333	1.246	0.000	15.256	3.026	18.282	307.42
8.505	5.169	2.417	1.638	0.000	17.729	3.215	20.944	315.25
9.956	8.283	2.500	2.089	0.000	22.828	3.359	26.186	367.39
11.094	9.970	2.000	2.592	0.000	25.655	2.928	28.583	374.06
11.994	11.595	2.000	3.139	0.000	28.728	2.891	31.619	382.55
12.843	13.363	2.000	3.749	0.000	31.955	2.985	34.940	392.65
13.727	15.304	2.000	4.405	0.000	35.437	2.918	38.356	404.12
14.458	23.793	2.000	5.130	0.000	45.381	2.849	48.230	494.44

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							
Salaries and Allowances	School-Operating Expenditure	Spec. Progr. and Project Expenditure	Other Expenditure	Total Recurrent Expenditure	Capital Expenditure	Total (Recurrent + Capital) Expenditure	Per Pupil Recurrent Expenditure (US$)
15.177	3.493	1.600	0.000	20.269	11.896	32.165	42.06
18.508	5.629	4.600	0.000	28.737	12.162	40.899	58.03
21.132	6.629	4.600	0.000	32.362	12.250	44.612	63.43
23.763	7.903	4.600	0.000	36.266	12.616	48.882	68.90
27.163	9.089	4.600	0.000	40.852	13.040	53.892	75.20
29.855	10.844	1.600	0.000	42.300	13.284	55.584	75.53
32.718	13.403	1.600	0.000	47.721	11.780	59.501	82.78
34.386	15.253	1.600	0.000	51.238	9.544	60.782	86.68
36.076	17.059	0.400	0.000	53.535	9.254	62.789	88.62
37.658	18.790	0.000	0.000	56.449	9.614	66.063	91.73
39.303	20.839	0.000	0.000	60.142	10.194	70.336	96.13
41.042	25.774	0.000	0.000	66.816	10.256	77.072	105.18

Recurrent Expenditure							
Salaries and Allowances	School-Operating Expenditure	Spec. Progr. and Project Expenditure	Other Expenditure	Total Recurrent Expenditure	Capital Expenditure	Total (Recurrent + Capital) Expenditure	Per Pupil Recurrent Expenditure (US$)
14.601	3.264	2.700	0.000	20.566	4.254	24.819	89.53
17.201	7.556	7.500	0.000	32.257	8.037	40.294	131.39
19.551	8.643	7.500	0.000	35.694	8.763	44.457	136.11
22.517	9.979	7.500	0.000	39.996	9.007	49.003	141.11
27.206	11.547	7.500	0.000	46.253	9.271	55.524	150.02
31.696	13.375	7.500	0.000	52.571	10.275	62.846	156.02
37.026	15.475	7.500	0.000	60.000	11.413	71.413	162.70
41.735	18.271	2.700	0.000	62.706	10.823	73.529	155.50
46.560	21.208	1.000	0.000	68.769	11.167	79.936	157.48
51.459	24.286	0.200	0.000	75.945	11.523	87.468	162.13
56.450	27.468	0.200	0.000	84.119	11.537	95.656	168.98
61.294	30.661	0.200	0.000	92.156	11.571	103.727	175.88

Recurrent Expenditure	Capital Expenditure	Total Expenditure
1.548	0.580	2.128
1.595	0.592	2.187
1.634	0.601	2.235
1.732	0.631	2.363
1.915	0.691	2.606
2.045	0.730	2.775
2.131	0.754	2.884
2.160	0.764	2.923
2.197	0.777	2.974
2.222	0.786	3.008
2.219	0.785	3.004
2.216	0.784	2.999

ALL Education sub-sector	FINAL ANPRO-Model 26 May 2005	26-May-05

Recurrent Expenditure	Capital Expenditure	Total Expenditure
0.427	0.080	0.507
0.470	0.089	0.559
0.528	0.100	0.628
0.598	0.114	0.712
0.696	0.133	0.829
0.804	0.155	0.959
0.946	0.183	1.129
1.121	0.218	1.339
1.330	0.260	1.590
1.565	0.307	1.872
1.815	0.357	2.172
2.082	0.410	2.492

Recurrent Expenditure	Capital Expenditure	Total NFE Expenditure
0.288	0.000	0.288
0.424	0.060	0.484
0.510	0.060	0.570
0.595	0.060	0.655
0.649	0.060	0.709
0.730	0.060	0.790
0.807	0.060	0.867
0.845	0.060	0.905
0.899	0.060	0.959
0.952	0.060	1.012
1.004	0.060	1.064
1.057	0.060	1.117

Teacher Training Centers and Other Education Facilities

Teacher Training Resource Centers			IT Centers and Book Stores			Sports Halls			Total
Number of Centers	Expenditure per Center ('000 US$)	Total Expenditure (million $)	Number of Centers/ Stores	Expenditure per Center ('000 US$)	Total Expenditure (million $)	Number of Halls	Expenditure per Center ('000 US$)	Total Expenditure (million $)	Recurrent Expenditure (million $)
6	5.0	0.030	4	5.0	0.020	10	8.0	0.080	0.130
6	5.0	0.030	4	5.0	0.020	10	8.0	0.080	0.130
8	5.0	0.040	5	5.0	0.025	12	8.0	0.096	0.161
10	5.0	0.050	6	5.0	0.030	13	8.0	0.104	0.184
12	5.0	0.060	7	5.0	0.035	15	8.0	0.120	0.215
14	5.0	0.070	8	5.0	0.040	17	8.0	0.136	0.246
16	5.0	0.080	9	5.0	0.045	19	8.0	0.152	0.277
18	5.0	0.090	10	5.0	0.050	20	8.0	0.160	0.300
18	5.0	0.090	10	5.0	0.050	20	8.0	0.160	0.300
18	5.0	0.090	10	5.0	0.050	20	8.0	0.160	0.300
18	5.0	0.090	10	5.0	0.050	20	8.0	0.160	0.300
18	5.0	0.090	10	5.0	0.050	20	8.0	0.160	0.300

New Teacher Training Centers and Other Education Support Facilities

Teacher Training Resource Centers			IT Centers and Book Stores			Sports Halls			Total
Number of Centers	Expenditure per Center ('000 US$)	Capital Expenditure (million $)	Number of Centers/ Stores	Expenditure per Center ('000 US$)	Capital Expenditure (million $)	Number of Halls	Expenditure per Center ('000 US$)	Capital Expenditure (million $)	Capital Expenditure (million $)
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000
2	40.0	0.080	1	50.0	0.050	2	80.0	0.160	0.290
2	40.0	0.080	1	50.0	0.050	1	80.0	0.080	0.210
2	40.0	0.080	1	50.0	0.050	2	80.0	0.160	0.290
2	40.0	0.080	1	50.0	0.050	2	80.0	0.160	0.290
2	40.0	0.080	1	50.0	0.050	2	80.0	0.160	0.290
2	40.0	0.080	1	50.0	0.050	1	80.0	0.080	0.210
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000
0	40.0	0.000	0	50.0	0.000	0	80.0	0.000	0.000

Salary of Provincial Administrative Staff and Non-Salary Recurrent Expenditure

Number and Salaries of Administrative Staff					Non-salary Expenditure		Total
Staff Growth	Total Staff	Salary growth	Avg. Sal. ($)*	Total sal.	Ann. Growth	Total	Recurrent
	3,207		112.50	4.329		4.800	9.129
1.0%	3,239	2.0%	114.75	4.460	0.0%	4.800	9.260
1.0%	3,271	2.0%	117.05	4.594	0.0%	4.800	9.394
1.0%	3,304	2.0%	119.39	4.733	0.0%	4.800	9.533
1.0%	3,337	2.0%	121.77	4.876	0.0%	4.800	9.676
1.0%	3,370	2.0%	124.21	5.023	0.0%	4.800	9.823
1.0%	3,404	2.0%	126.69	5.175	0.0%	4.800	9.975
0.0%	3,438	0.0%	126.69	5.227	0.0%	4.800	10.027
0.0%	3,438	0.0%	126.69	5.227	0.0%	4.800	10.027
0.0%	3,438	0.0%	126.69	5.227	0.0%	4.800	10.027
0.0%	3,438	0.0%	126.69	5.227	0.0%	4.800	10.027
0.0%	3,438	0.0%	126.69	5.227	0.0%	4.800	10.027

Model Sheet 4: Summary of Expenditure Projections

ALL Education sub-sector	FINAL ANPRO-Model 26 May 2005	26-May-05

Pre-School	Primary	Secondary	Teacher Training	Professional Secondary	NFE	Education Facilities*	Admin. Support	Total Recurrent
4.925	20.269	20.566	1.548	0.427	0.288	0.130	9.129	57.283
9.027	28.737	32.257	1.595	0.470	0.424	0.130	9.260	81.901
10.916	32.362	35.694	1.634	0.528	0.510	0.161	9.394	91.199
12.943	36.266	39.996	1.732	0.598	0.595	0.184	9.533	101.846
15.256	40.852	46.253	1.915	0.696	0.649	0.215	9.676	115.512
17.729	42.300	52.571	2.045	0.804	0.730	0.246	9.823	126.246
22.828	47.721	60.000	2.131	0.946	0.807	0.277	9.975	144.684
25.655	51.238	62.706	2.160	1.121	0.845	0.300	10.027	154.053
28.728	53.535	68.769	2.197	1.330	0.899	0.300	10.027	165.784
31.955	56.449	75.945	2.222	1.565	0.952	0.300	10.027	179.414
35.437	60.142	84.119	2.219	1.815	1.004	0.300	10.027	195.063
45.381	66.816	92.156	2.216	2.082	1.057	0.300	10.027	220.034

Pre-School	Primary	Secondary	Teacher Training	Professional Secondary	NFE	Education Facilities*	Total Capital
3.461	11.896	4.254	0.580	0.080	0.000	0.000	20.271
3.473	12.162	8.037	0.592	0.089	0.060	0.290	24.703
3.059	12.250	8.763	0.601	0.100	0.060	0.210	25.043
3.024	12.616	9.007	0.631	0.114	0.060	0.290	25.742
3.026	13.040	9.271	0.691	0.133	0.060	0.290	26.511
3.215	13.284	10.275	0.730	0.155	0.060	0.290	28.009
3.359	11.780	11.413	0.754	0.183	0.060	0.210	27.759
2.928	9.544	10.823	0.764	0.218	0.060	0.000	24.337
2.891	9.254	11.167	0.777	0.260	0.060	0.000	24.409
2.985	9.614	11.523	0.786	0.307	0.060	0.000	25.275
2.918	10.194	11.537	0.785	0.357	0.060	0.000	25.851
2.849	10.256	11.571	0.784	0.410	0.060	0.000	25.930

Recurrent Expenditure	Growth Rate	Capital Expenditure	Growth Rate	Total Expenditure	Growth Rate
57.283		20.271		77.553	
81.901	43.0%	24.703	21.9%	106.603	37.5%
91.199	11.4%	25.043	1.4%	116.242	9.0%
101.846	11.7%	25.742	2.8%	127.588	9.8%
115.512	13.4%	26.511	3.0%	142.023	11.3%
126.246	9.3%	28.009	5.7%	154.256	8.6%
144.684	14.6%	27.759	-0.9%	172.443	11.8%
154.053	6.5%	24.337	-12.3%	178.390	3.4%
165.784	7.6%	24.409	0.3%	190.193	6.6%
179.414	8.2%	25.275	3.5%	204.690	7.6%
195.063	8.7%	25.851	2.3%	220.914	7.9%
220.034	12.8%	25.930	0.3%	245.964	11.3%

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
First projection year is 2005/06 and the projection period is 2005/2006 - 2015/2016.
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:

1,234	**Baseline data** are on yellow ground

Dependent variables (result variables)

1,234	Calculation results are on white ground
1,234	Data imported from other sheet(s) are on purple ground

Independent variables (decision variables)

100.0%	are in red figures on white ground in a double-line box Decision variables include assumptions, population projections and targets

INDEPENDENT VARIABLES (DECISION VARIABLES)		DEPENDENT VARIABLES (RESULT VARIABLES)
PUPILS		
- population aged 6 and 6-11		- number of pupils entering Grade-1 in public and private schools
- access rate to Grade 1		- drop-out rates
- % of new entrants going to public schools		- enrolment by Grade for public and private schools
- student flow rates (promotion and repetition rates) for public and private schools		- gross enrolment rate (GER)
		- number of drop-outs
- re-integration rate of drop-outs into public schools		- number of graduates
- additional new entrants due to immigration		
- net transfer growth rate between public and private schools		
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	- total expenditure for in-service training
	- number of training days	- total expenditure on teacher guide books
	- cost per training day	- total expenditure on textbooks and other pupil- related expenditures
- expenditure for teacher guide books:	- % of teachers receiving guides	- unit cost (per pupil expenditure)
	- unit cost	- composition of unit (per pupil) expenditure
- textbook expenditure per pupil:	- % of pupils receiving textbooks	- total recurrent expenditure
	- unit cost	
- non-textbook expenditures per pupil		
- school/related expenditure per school		
- expenditure on special Programmes and projects		
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 (replacement and additional new rooms)
- construction cost per classroom		
- percentage of classrooms needing major repair		- total expenditure for libraries and computer labs
- average expenditure for major repair of a classroom		- total capital expenditure
- number of libraries and computer labs to install and upGrade		
- standard cost of equipping a school with library and computer labs		

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SUMMARY of Projection Scenario for PRIMARY EDUCATION

Base year for the projection is 2004/2005 school year

- ENROLMENT AND GRADUATES:

S.1	Enrolment in Primary Education (Grades 1-6)					Primary Graduates (Grade 6)			
YEAR	Public	Private	Total	GER	% Private	Public	Private	**Total**	% Private
04/05	481,900	928	482,828	89.7%	0.2%	55,161	93	55,254	0.2%
05/06	495,174	1,430	496,604	90.5%	0.3%	59,399	121	59,520	0.2%
06/07	510,199	2,008	512,207	91.6%	0.4%	63,983	158	64,141	0.2%
07/08	526,368	2,660	529,028	92.8%	0.5%	68,954	224	69,178	0.3%
08/09	543,265	3,452	546,717	94.2%	0.6%	74,387	300	74,687	0.4%
09/10	560,055	4,386	564,441	95.6%	0.8%	80,137	385	80,522	0.5%
10/11	576,490	5,568	582,058	97.0%	1.0%	85,907	535	86,442	0.6%
11/12	591,126	7,011	598,137	98.1%	1.2%	89,401	655	90,056	0.7%
12/13	604,065	8,744	612,809	98.9%	1.4%	92,826	768	93,594	0.8%
13/14	615,373	10,781	626,154	99.6%	1.7%	95,701	944	96,645	1.0%
14/15	625,605	13,060	638,665	100.1%	2.0%	98,079	1,138	99,217	1.1%
15/16	635,250	15,566	650,816	100.6%	2.4%	100,415	1,412	101,827	1.4%

- TEACHERS (Public Schools Only):

S.2	Teachers and Recruitment				
YEAR	Teachers Needed	Pupil/Teach. Ratio	Non-Teach. Staff	Total Staff	Teacher Recruitment
04/05	13,315	36.2	5,672	18,987	2,342
05/06	15,351	32.3	5,953	21,304	2,369
06/07	16,992	30.0	6,291	23,283	2,025
07/08	18,514	28.4	6,604	25,118	1,947
08/09	19,573	27.8	6,937	26,510	1,522
09/10	20,667	27.1	7,343	28,010	1,583
10/11	21,817	26.4	7,704	29,521	1,667
11/12	22,974	25.7	8,033	31,007	1,702
12/13	24,103	25.1	8,429	32,532	1,703
13/14	25,211	24.4	8,726	33,937	1,711
14/15	26,363	23.7	9,036	35,399	1,782
15/16	27,529	23.1	9,436	36,965	1,825

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

S.3	Total Recurrent	Of which:	Capital	**Total**	Unit Cost (Recurrent Expenditure Per Pupil; US$)			
YEAR	Expenditure	Salaries	Expenditure	**Expenditure**	Exp./Pupil	Index	Exp./Grad.	Index
04/05	24.100	15.177	11.896	35.996	50.01	**100**	436.91	**100**
05/06	32.699	18.508	12.162	44.861	66.03	132	550.49	126
06/07	36.443	21.132	12.250	48.693	71.43	143	569.58	130
07/08	40.477	23.763	12.616	53.093	76.90	154	587.02	134
08/09	45.198	27.163	13.040	58.238	83.20	166	607.60	139
09/10	46.780	29.855	13.284	60.064	83.53	167	583.75	134
10/11	52.333	32.718	11.780	64.113	90.78	182	609.18	139
11/12	55.967	34.386	9.544	65.511	94.68	189	626.03	143
12/13	58.367	36.076	9.254	67.621	96.62	193	628.78	144
13/14	61.372	37.658	9.614	70.986	99.73	199	641.28	147
14/15	65.147	39.303	10.194	75.341	104.13	208	664.23	152
15/16	71.898	41.042	10.256	82.154	113.18	226	716.01	164

- INTERNAL EFFICIENCY (Public Schools Only)

S.4	Total Years of Study by the Cohort: Primary					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	1,024	1,043	1,034	984	936	923
05/06	1,020	1,039	1,030	985	943	937
06/07	1,017	1,031	1,022	985	949	949
07/08	1,014	1,026	1,017	986	955	962
08/09	1,011	1,020	1,012	985	959	972
09/10	1,008	1,014	1,006	985	965	985
10/11	1,005	1,008	1,000	985	970	995
11/12	1,005	1,008	1,000	985	970	995
12/13	1,005	1,008	1,000	985	970	995
13/14	1,005	1,008	1,000	985	970	995
14/15	1,005	1,008	1,000	985	970	995
15/16	1,005	1,008	1,000	985	970	995

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S.5	Promotion of the Cohort: Primary					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	1,000	993	980	929	878	821
05/06	1,000	995	983	938	893	843
06/07	1,000	995	984	945	906	864
07/08	1,000	996	986	953	921	885
08/09	1,000	997	988	960	933	904
09/10	1,000	998	989	968	947	926
10/11	1,000	998	990	975	960	946
11/12	1,000	998	990	975	960	946
12/13	1,000	998	990	975	960	946
13/14	1,000	998	990	975	960	946
14/15	1,000	998	990	975	960	946
15/16	1,000	998	990	975	960	946

S.6	Average Number of Years Spent Per Pupil by Grade					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	1.02	1.05	1.05	1.06	1.07	1.12
05/06	1.02	1.04	1.05	1.05	1.06	1.11
06/07	1.02	1.04	1.04	1.04	1.05	1.10
07/08	1.01	1.03	1.03	1.03	1.04	1.09
08/09	1.01	1.02	1.02	1.03	1.03	1.08
09/10	1.01	1.02	1.02	1.02	1.02	1.06
10/11	1.01	1.01	1.01	1.01	1.01	1.05
11/12	1.01	1.01	1.01	1.01	1.01	1.05
12/13	1.01	1.01	1.01	1.01	1.01	1.05
13/14	1.01	1.01	1.01	1.01	1.01	1.05
14/15	1.01	1.01	1.01	1.01	1.01	1.05
15/16	1.01	1.01	1.01	1.01	1.01	1.05

S.7	Indicators of Efficiency				
YEAR	Repetition Rate for Grades 1-6	Survival Rate to Grade 6	Primary Graduates as % G-1 Intake	Pupil-years per Graduate	Coefficient of Internal Efficiency
04/05	5.7%	82.1%	71.8%	8.28	72.5%
05/06	5.0%	84.3%	75.2%	7.92	75.8%
06/07	4.3%	86.4%	78.5%	7.59	79.1%
07/08	3.6%	88.5%	82.0%	7.27	82.5%
08/09	2.9%	90.4%	85.2%	7.00	85.7%
09/10	2.3%	92.6%	88.7%	6.72	89.3%
10/11	1.6%	94.6%	92.1%	6.48	92.6%
11/12	1.6%	94.6%	92.1%	6.48	92.6%
12/13	1.6%	94.6%	92.1%	6.48	92.6%
13/14	1.6%	94.6%	92.1%	6.48	92.6%
14/15	1.6%	94.6%	92.1%	6.48	92.6%
15/16	1.6%	94.6%	92.1%	6.48	92.6%

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PUPIL SUB-MODEL

1.1	Demographic Data: School-age Population			
	Age 6		Age Group 6-11	
YEAR	Number	Growth Rate	Number	Growth Rate
04/05	88,205	538,106		
05/06	89,969	2.00%	548,868	2.00%
06/07	91,706	1.93%	559,462	1.93%
07/08	93,415	1.86%	569,888	1.86%
08/09	95,096	1.80%	580,146	1.80%
09/10	96,750	1.74%	590,235	1.74%
10/11	98,376	1.68%	600,156	1.68%
11/12	99,975	1.63%	609,910	1.63%
12/13	101,546	1.57%	619,495	1.57%
13/14	103,090	1.52%	628,911	1.52%
14/15	104,606	1.47%	638,160	1.47%
15/16	106,094	1.42%	647,241	1.42%

1.2	Access Rate and Entrants into Grade 1			% Entrants into:		Entrants into:	
	Access	Entrants into Grade 1		Public	Private	Public	Private
YEAR	rate*	Number	Growth	Schools	Schools	Schools	Schools
04/05	94.2%	83,089		99.8%	0.2%	82,923	166
05/06	95.2%	85,623	3.0%	99.7%	0.3%	85,366	257
06/07	96.1%	88,157	3.0%	99.6%	0.4%	87,804	353
07/08	97.1%	90,706	2.9%	99.5%	0.5%	90,252	454
08/09	98.1%	93,261	2.8%	99.3%	0.7%	92,608	653
09/10	99.0%	95,812	2.7%	99.1%	0.9%	94,950	862
10/11	100.0%	98,376	2.7%	98.8%	1.2%	97,195	1,181
11/12	100.0%	99,975	1.6%	98.4%	1.6%	98,395	1,580
12/13	100.0%	101,546	1.6%	98.0%	2.0%	99,556	1,990
13/14	100.0%	103,090	1.5%	97.7%	2.3%	100,678	2,412
14/15	100.0%	104,606	1.5%	97.3%	2.7%	101,761	2,845
15/16	100.0%	106,094	1.4%	96.9%	3.1%	102,805	3,289

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

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Internal Efficiency for PUBLIC Schools

1.3	Promotion Rates (Public Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	97.0%	94.0%	89.8%	89.2%	87.8%	77.8%
05/06	97.5%	94.7%	91.1%	90.6%	89.4%	80.3%
06/07	97.8%	95.4%	92.4%	92.0%	91.0%	82.7%
07/08	98.2%	96.1%	93.7%	93.4%	92.7%	85.2%
08/09	98.6%	96.8%	94.9%	94.7%	94.3%	87.6%
09/10	99.0%	97.5%	96.2%	96.1%	95.9%	90.1%
10/11	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%
11/12	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%
12/13	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%
13/14	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%
14/15	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%
15/16	99.3%	98.2%	97.5%	97.5%	97.5%	92.5%

1.4	Repetition Rates (Public Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	2.3%	4.8%	5.2%	5.6%	6.2%	11.0%
05/06	2.0%	4.2%	4.5%	4.8%	5.3%	10.0%
06/07	1.7%	3.5%	3.8%	4.1%	4.5%	9.0%
07/08	1.4%	2.9%	3.1%	3.3%	3.6%	8.0%
08/09	1.1%	2.3%	2.4%	2.5%	2.7%	7.0%
09/10	0.8%	1.6%	1.7%	1.8%	1.9%	6.0%
10/11	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%
11/12	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%
12/13	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%
13/14	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%
14/15	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%
15/16	0.5%	1.0%	1.0%	1.0%	1.0%	5.0%

1.5	Drop-out Rates (Public Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	0.7%	1.2%	5.0%	5.2%	6.0%	11.2%
05/06	0.5%	1.1%	4.4%	4.6%	5.3%	9.7%
06/07	0.5%	1.1%	3.8%	3.9%	4.5%	8.3%
07/08	0.4%	1.0%	3.2%	3.3%	3.7%	6.8%
08/09	0.3%	0.9%	2.7%	2.8%	3.0%	5.4%
09/10	0.2%	0.9%	2.1%	2.1%	2.2%	3.9%
10/11	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%
11/12	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%
12/13	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%
13/14	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%
14/15	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%
15/16	0.2%	0.8%	1.5%	1.5%	1.5%	2.5%

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Internal Efficiency for PRIVATE Schools

1.6	Promotion Rates (Private Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	97.0%	94.0%	89.8%	89.2%	87.8%	77.8%
05/06	97.3%	94.4%	90.7%	90.2%	89.0%	79.0%
06/07	97.6%	94.8%	91.5%	91.1%	90.2%	80.2%
07/08	97.9%	95.2%	92.4%	92.1%	91.4%	81.4%
08/09	98.2%	95.6%	93.3%	93.1%	92.6%	82.6%
09/10	98.5%	96.0%	94.1%	94.0%	93.8%	83.8%
10/11	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%
11/12	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%
12/13	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%
13/14	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%
14/15	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%
15/16	98.8%	96.4%	95.0%	95.0%	95.0%	85.0%

1.7	Repetition Rates (Private Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	2.3%	4.8%	5.2%	5.6%	6.2%	11.0%
05/06	2.1%	4.3%	4.7%	5.0%	5.5%	10.5%
06/07	1.9%	3.9%	4.1%	4.4%	4.8%	10.0%
07/08	1.7%	3.4%	3.6%	3.8%	4.1%	9.5%
08/09	1.4%	2.9%	3.1%	3.2%	3.4%	9.0%
09/10	1.2%	2.5%	2.5%	2.6%	2.7%	8.5%
10/11	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%
11/12	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%
12/13	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%
13/14	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%
14/15	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%
15/16	1.0%	2.0%	2.0%	2.0%	2.0%	8.0%

1.8	Drop-out Rates (Private Schools)					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	0.7%	1.2%	5.0%	5.2%	6.0%	11.2%
05/06	0.6%	1.3%	4.6%	4.8%	5.5%	10.5%
06/07	0.5%	1.3%	4.4%	4.5%	5.0%	9.8%
07/08	0.4%	1.4%	4.0%	4.1%	4.5%	9.1%
08/09	0.4%	1.5%	3.6%	3.7%	4.0%	8.4%
09/10	0.3%	1.5%	3.4%	3.4%	3.5%	7.7%
10/11	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%
11/12	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%
12/13	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%
13/14	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%
14/15	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%
15/16	0.2%	1.6%	3.0%	3.0%	3.0%	7.0%

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Enrolment for PUBLIC and PRIVATE Schools

1.9	Drop-out from Public and Private Schools						
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total
04/05	595	1,041	4,252	4,144	4,450	7,954	22,436
05/06	442	975	3,826	3,764	4,065	7,191	20,263
06/07	454	1,001	3,387	3,293	3,576	6,441	18,152
07/08	373	933	2,934	2,881	3,062	5,528	15,711
08/09	288	864	2,542	2,533	2,586	4,616	13,429
09/10	197	886	2,035	1,965	1,978	3,504	10,565
10/11	201	810	1,497	1,456	1,406	2,366	7,736
11/12	204	830	1,534	1,502	1,460	2,470	8,000
12/13	207	845	1,573	1,540	1,508	2,572	8,245
13/14	210	863	1,605	1,582	1,548	2,664	8,472
14/15	214	881	1,641	1,615	1,591	2,745	8,687
15/16	217	899	1,676	1,653	1,627	2,830	8,902

1.10	Reintegration Rates (of Pevious Year Drop-outs) into PUBLIC Schools*					
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6
04/05	3.4%	3.1%	2.8%	3.7%	3.4%	3.3%
05/06	5.7%	5.2%	5.2%	5.1%	5.0%	5.0%
06/07	10.6%	10.2%	10.1%	10.1%	10.0%	10.0%
07/08	15.4%	15.0%	15.0%	15.0%	15.0%	15.0%
08/09	20.3%	20.0%	20.0%	20.0%	20.0%	20.0%
09/10	25.1%	25.0%	25.0%	25.0%	25.0%	25.0%
10/11	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
11/12	34.0%	34.0%	34.0%	34.0%	34.0%	34.0%
12/13	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
13/14	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%
14/15	46.0%	46.0%	46.0%	46.0%	46.0%	46.0%
15/16	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%

1.11	Previous Year Drop-outs Reintegrated into PUBLIC Schools						
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total
04/05	20	32	118	152	151	259	732
05/06	33	54	221	211	222	397	1,138
06/07	46	99	386	380	406	719	2,036
07/08	69	150	508	493	536	966	2,722
08/09	75	186	586	576	612	1,105	3,140
09/10	72	216	635	633	646	1,154	3,356
10/11	59	265	610	589	593	1,051	3,167
11/12	68	275	508	495	478	804	2,628
12/13	77	315	582	570	554	938	3,036
13/14	86	354	660	646	633	1,080	3,459
14/15	96	396	738	727	712	1,225	3,894
15/16	107	440	820	807	795	1,372	4,341

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1.12	Net Transfers* from Public to Private Schools							Growth
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	Rate
04/05	83	80	73	69	32	21	358	
05/06	88	85	77	73	34	22	379	6.0%
06/07	93	90	82	77	36	23	401	6.0%
07/08	99	95	87	82	38	24	425	6.0%
08/09	105	101	92	87	40	25	450	6.0%
09/10	111	107	98	92	42	27	477	6.0%
10/11	118	113	104	98	45	29	507	6.0%
11/12	125	120	110	104	48	31	538	6.0%
12/13	133	127	117	110	51	33	571	6.0%
13/14	141	135	124	117	54	35	606	6.0%
14/15	149	143	131	124	57	37	641	6.0%
15/16	158	152	139	131	60	39	679	6.0%

* 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**						
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total
04/05	688	720	702	696	690	715	4,211
05/06	773	798	785	778	773	797	4,704
06/07	857	875	869	860	856	879	5,196
07/08	942	952	952	941	938	961	5,686
08/09	1,026	1,029	1,035	1,023	1,021	1,043	6,177
09/10	1,111	1,107	1,119	1,105	1,104	1,125	6,671
10/11	1,195	1,184	1,202	1,186	1,186	1,207	7,160
11/12	1,280	1,261	1,285	1,268	1,269	1,289	7,652
12/13	1,364	1,339	1,369	1,350	1,351	1,372	8,145
13/14	1,449	1,416	1,452	1,431	1,434	1,454	8,636
14/15	1,533	1,493	1,535	1,513	1,517	1,536	9,127
15/16	1,618	1,571	1,618	1,595	1,599	1,618	9,619

* Independent variable, not calculated by the model

** Mainly through rural-urban migration

1.14	Additional New Entrants from Immigration as % of Total Enrolment*						
YEAR	% in Gr.1	% in Gr.2	% in Gr.3	% in Gr.4	% in Gr.5	% in Gr.6	All Grades
04/05	0.8%	0.8%	0.8%	0.9%	0.9%	1.0%	0.9%
05/06	0.9%	0.9%	0.9%	1.0%	1.0%	1.1%	0.9%
06/07	0.9%	1.0%	1.0%	1.0%	1.1%	1.1%	1.0%
07/08	1.0%	1.0%	1.0%	1.1%	1.1%	1.2%	1.1%
08/09	1.1%	1.1%	1.1%	1.1%	1.2%	1.2%	1.1%
09/10	1.1%	1.1%	1.2%	1.2%	1.2%	1.3%	1.2%
10/11	1.2%	1.2%	1.2%	1.2%	1.3%	1.3%	1.2%
11/12	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
12/13	1.3%	1.3%	1.3%	1.3%	1.4%	1.4%	1.3%
13/14	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%	1.4%
14/15	1.5%	1.4%	1.5%	1.5%	1.5%	1.4%	1.5%
15/16	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%	1.5%

* The percentage figures express the immigrating pupils expressed as percentage of total enrolment including immigration as shown in table 1.13

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1.15	Enrolment and Graduates in Public Schools									
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	Index	Graduates	Grad. Index
04/05	86,012	86,542	84,867	79,546	74,032	70,901	481,900	**100**	55,161	**100**
05/06	88,071	88,353	86,692	81,581	76,506	73,971	495,174	103	59,399	108
06/07	90,375	90,464	88,744	84,055	79,193	77,368	510,199	106	63,983	116
07/08	92,700	92,560	91,048	86,798	82,330	80,932	526,368	109	68,954	125
08/09	94,902	94,830	93,302	89,688	85,626	84,917	543,265	113	74,387	135
09/10	97,066	96,970	95,691	92,432	88,954	88,942	560,055	116	80,137	145
10/11	99,108	98,983	97,880	95,396	92,251	92,872	576,490	120	85,907	156
11/12	100,114	100,820	99,863	98,046	95,633	96,650	591,126	123	89,401	162
12/13	101,365	101,948	101,838	100,157	98,405	100,352	604,065	125	92,826	168
13/14	102,579	103,310	103,119	102,254	100,650	103,461	615,373	128	95,701	173
14/15	103,754	104,640	104,624	103,680	102,876	106,031	625,605	130	98,079	178
15/16	104,891	105,933	106,102	105,316	104,451	108,557	635,250	132	100,415	182

1.16	Enrolment and Graduates in Private Schools									
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	Index	Graduates	Grad. Index
04/05	175	179	169	152	134	119	928	**100**	93	**100**
05/06	349	263	254	233	178	153	1,430	154	121	130
06/07	453	441	342	319	256	197	2,008	216	158	170
07/08	562	554	519	409	341	275	2,660	287	224	241
08/09	768	670	638	582	431	363	3,452	372	300	323
09/10	984	881	758	706	598	459	4,386	473	385	414
10/11	1,311	1,104	969	830	725	629	5,568	600	535	575
11/12	1,718	1,437	1,194	1,041	851	770	7,011	755	655	704
12/13	2,140	1,853	1,526	1,265	1,057	903	8,744	942	768	826
13/14	2,574	2,286	1,941	1,592	1,277	1,111	10,781	1,162	944	1,015
14/15	3,020	2,732	2,374	2,000	1,595	1,339	13,060	1,407	1,138	1,224
15/16	3,477	3,190	2,820	2,426	1,992	1,661	15,566	1,677	1,412	1,518

1.17	Enrolment by Grade and Graduates in Public and Private Schools									
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	Index	GER	Graduates
04/05	86,187	86,721	85,036	79,698	74,166	71,020	482,828	**100**	89.7%	55,254
05/06	88,420	88,616	86,946	81,814	76,684	74,124	496,604	103	90.5%	59,520
06/07	90,828	90,905	89,086	84,374	79,449	77,565	512,207	106	91.6%	64,141
07/08	93,262	93,114	91,567	87,207	82,671	81,207	529,028	110	92.8%	69,178
08/09	95,670	95,500	93,940	90,270	86,057	85,280	546,717	113	94.2%	74,687
09/10	98,050	97,851	96,449	93,138	89,552	89,401	564,441	117	95.6%	80,522
10/11	100,419	100,087	98,849	96,226	92,976	93,501	582,058	121	97.0%	86,442
11/12	101,832	102,257	101,057	99,087	96,484	97,420	598,137	124	98.1%	90,056
12/13	103,505	103,801	103,364	101,422	99,462	101,255	612,809	127	98.9%	93,594
13/14	105,153	105,596	105,060	103,846	101,927	104,572	626,154	130	99.6%	96,645
14/15	106,774	107,372	106,998	105,680	104,471	107,370	638,665	132	100.1%	99,217
15/16	108,368	109,123	108,922	107,742	106,443	110,218	650,816	135	100.6%	101,827

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TEACHER SUB-MODEL: PUBLIC SCHOOLS ONLY

2.1	Pupil/Class* Ratios						Total Pupil/
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Class Ratio
04/05	40.7	41.1	40.4	40.3	38.0	36.7	39.6
05/06	39.7	40.1	39.5	39.3	37.3	36.1	38.7
06/07	38.7	39.1	38.5	38.4	36.6	35.5	37.8
07/08	37.8	38.1	37.6	37.4	35.8	34.9	37.0
08/09	36.8	37.1	36.6	36.5	35.1	34.3	36.1
09/10	35.8	36.1	35.7	35.6	34.4	33.7	35.2
10/11	34.9	35.1	34.7	34.7	33.6	33.1	34.4
11/12	33.9	34.0	33.8	33.7	32.9	32.4	33.4
12/13	32.9	33.0	32.8	32.8	32.2	31.8	32.6
13/14	31.9	32.0	31.9	31.9	31.5	31.2	31.7
14/15	31.0	31.0	30.9	30.9	30.7	30.6	30.8
15/16	30.0	30.0	30.0	30.0	30.0	30.0	30.0

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

2.2	Classes* Classes							/	Total
YEAR	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Total	school	Schools
04/05	2,114	2,105	2,099	1,976	1,947	1,931	12,172	9.4	1,295
05/06	2,218	2,203	2,195	2,076	2,051	2,049	12,792	9.5	1,347
06/07	2,335	2,314	2,305	2,189	2,164	2,179	13,486	9.5	1,420
07/08	2,452	2,429	2,421	2,321	2,300	2,319	14,242	9.6	1,484
08/09	2,579	2,556	2,549	2,457	2,439	2,476	15,056	9.7	1,552
09/10	2,711	2,686	2,680	2,596	2,586	2,639	15,898	9.7	1,639
10/11	2,840	2,820	2,821	2,749	2,746	2,806	16,782	9.8	1,712
11/12	2,953	2,965	2,955	2,909	2,907	2,983	17,672	9.9	1,785
12/13	3,081	3,089	3,105	3,054	3,056	3,156	18,541	9.9	1,873
13/14	3,216	3,228	3,233	3,205	3,195	3,316	19,393	10.0	1,939
14/15	3,347	3,375	3,386	3,355	3,351	3,465	20,279	10.1	2,008
15/16	3,496	3,531	3,537	3,511	3,482	3,619	21,176	10.1	2,097

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

2.3	Teachers per Class, Principals and Other Staff per School and Attrition Rates								Pupil/
	Teachers per Class*			Principals	Non-Teach.	Attrition rates			Teacher
YEAR	Standard	Non-Standard	All Teachers	per School	Staff per sch.	Teach. staff	Principals	Other Staff	Ratio
04/05	0.93	0.17	1.09	1.20	3.18	2.5%	3.0%	2.0%	36.2
05/06	1.03	0.17	1.20	1.22	3.20	2.5%	3.0%	2.0%	32.3
06/07	1.13	0.13	1.26	1.23	3.20	2.5%	3.0%	2.0%	30.0
07/08	1.20	0.10	1.30	1.25	3.20	2.5%	3.0%	2.0%	28.4
08/09	1.23	0.07	1.30	1.27	3.20	2.5%	3.0%	2.0%	27.8
09/10	1.27	0.03	1.30	1.28	3.20	2.5%	3.0%	2.0%	27.1
10/11	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	26.4
11/12	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	25.7
12/13	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	25.1
13/14	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	24.4
14/15	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	23.7
15/16	1.30	0.00	1.30	1.30	3.20	2.5%	3.0%	2.0%	23.1

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

2.4	School Staff by Function					
	Primary Teachers			School	Non-Teach.	All School
YEAR	Standard	Non-Standard	Needed	Principals	Staff	Staff
04/05	11,267	2,048	13,315	1,554	4,118	18,987
05/06	13,176	2,175	15,351	1,643	4,310	21,304
06/07	15,239	1,753	16,992	1,747	4,544	23,283
07/08	17,090	1,424	18,514	1,855	4,749	25,118
08/09	18,519	1,054	19,573	1,971	4,966	26,510
09/10	20,190	477	20,667	2,098	5,245	28,010
10/11	21,817	0	21,817	2,226	5,478	29,521
11/12	22,974	0	22,974	2,321	5,712	31,007
12/13	24,103	0	24,103	2,435	5,994	32,532
13/14	25,211	0	25,211	2,521	6,205	33,937
14/15	26,363	0	26,363	2,610	6,426	35,399
15/16	27,529	0	27,529	2,726	6,710	36,965

2.5	Attrition, New Posts and Recruitment at Primary Level								
	Teachers			Principals			Other Non-Teaching Staff		
YEAR	Attrition	New Posts*	Recruitment	Attrition	New Posts*	Recruitment	Attrition	New Posts*	Recruitmt.
04/05	333		2,342	47		102	82		302
05/06	384	2,036	2,369	49	52	99	86	192	274
06/07	425	1,641	2,025	52	73	122	91	234	320
07/08	463	1,522	1,947	56	64	116	95	205	296
08/09	489	1,059	1,522	59	68	124	99	217	312
09/10	517	1,094	1,583	63	87	146	105	279	378
10/11	545	1,150	1,667	67	73	136	110	233	338
11/12	574	1,157	1,702	70	73	140	114	234	344
12/13	603	1,129	1,703	73	88	158	120	282	396
13/14	630	1,108	1,711	76	66	139	124	211	331
14/15	659	1,152	1,782	78	69	145	129	221	345
15/16	688	1,166	1,825	82	89	167	134	284	413

*In case the number of staff exceeds the needs, the value of "New posts" can be less than 0

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RECURRENT EXPENDITURE SUB-MODEL: PUBLIC PRIMARY SCHOOLS

3.1	Average Monthly Salary and Allowances of Staff by Function (US$)						Salary Expenditure ('000 US$)		
	Primary Level				Average Increase			N.T. Staff	
YEAR	Standard	Non-Standard	Principals	N.Teach Staff	Annual	Special	Teachers	and principals	Total
04/05	75.00	60.00	85.00	40.00	0.5%	0.0%	11,615	3,562	15,177
05/06	80.85	64.68	91.63	43.12	3.5%	4.3%	14,472	4,037	18,508
06/07	83.68	66.94	94.84	44.63	3.5%	0.0%	16,711	4,422	21,132
07/08	86.61	69.29	98.16	46.19	3.5%	0.0%	18,946	4,817	23,763
08/09	93.36	74.69	105.81	49.79	3.5%	4.3%	21,693	5,470	27,163
09/10	96.63	77.31	109.52	51.54	3.5%	0.0%	23,854	6,001	29,855
10/11	100.01	80.01	113.35	53.34	3.5%	0.0%	26,184	6,534	32,718
11/12	100.01	80.01	113.35	53.34	0.0%	0.0%	27,573	6,813	34,386
12/13	100.01	80.01	113.35	53.34	0.0%	0.0%	28,928	7,149	36,076
13/14	100.01	80.01	113.35	53.34	0.0%	0.0%	30,257	7,401	37,658
14/15	100.01	80.01	113.35	53.34	0.0%	0.0%	31,640	7,663	39,303
15/16	100.01	80.01	113.35	53.34	0.0%	0.0%	33,039	8,003	41,042

3.2	Pupil-related and School-related Expenditure						Direct Parent Contributions to School		Total Pupil +Sch. Related
	Pupil-related Expenditure			School-related Expenditure					
YEAR	Pupils	Per pupil ($)	Total ('000$)	Schools	Per school ($)	Total ('000$)	Per pupil ($)	Tot. ('000 $)	('000 US$)
04/05	481,900	5.00	2,410	1,295	320.00	414	7.95	3,831	6,655
05/06	495,174	6.00	2,971	1,347	345.00	465	8.00	3,961	7,397
06/07	510,199	6.80	3,469	1,420	370.00	525	8.00	4,082	8,076
07/08	526,368	7.75	4,079	1,484	400.00	594	8.00	4,211	8,884
08/09	543,265	8.65	4,699	1,552	425.00	660	8.00	4,346	9,705
09/10	560,055	10.00	5,601	1,639	450.00	738	8.00	4,480	10,819
10/11	576,490	10.50	6,053	1,712	475.00	813	8.00	4,612	11,478
11/12	591,126	11.50	6,798	1,785	500.00	893	8.00	4,729	12,419
12/13	604,065	12.25	7,400	1,873	525.00	983	8.00	4,833	13,216
13/14	615,373	13.00	8,000	1,939	550.00	1,066	8.00	4,923	13,989
14/15	625,605	14.00	8,758	2,008	575.00	1,155	8.00	5,005	14,918
15/16	635,250	15.00	9,529	2,097	600.00	1,258	8.00	5,082	15,869

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3.3	Provision of Textbooks ('000 US$)				Provision of Teacher Guides ('000 US$)			
	Pupils Receiving Textbooks		Unit Cost	Total Cost	Principals	% Teachers	Unit Cost	Total Cost
YEAR	%	Number	(US$)	('000 US$)	+Teachers	Receiving Guide	(US$)	('000 US$)
04/05	8.0%	38,552	7.50	289	14,869	50.0%	28.00	208
05/06	16.4%	81,209	7.50	609	16,994	58.3%	28.00	277
06/07	24.7%	126,019	7.50	945	18,739	66.7%	28.00	350
07/08	33.1%	174,228	7.50	1,307	20,369	75.0%	28.00	428
08/09	41.5%	225,455	7.50	1,691	21,544	83.3%	28.00	502
09/10	49.8%	278,907	7.50	2,092	22,765	91.7%	28.00	585
10/11	58.2%	335,517	7.50	2,516	24,043	100.0%	28.00	673
11/12	66.6%	393,690	7.50	2,953	25,295	100.0%	28.00	708
12/13	74.9%	452,445	7.50	3,393	26,538	100.0%	28.00	743
13/14	83.3%	512,606	7.50	3,845	27,732	100.0%	28.00	776
14/15	91.6%	573,054	7.50	4,298	28,973	100.0%	28.00	811
15/16	100.0%	635,250	7.50	4,764	30,255	100.0%	28.00	847

3.4	In-Service Training for Primary Teaching Staff and Principals									
	New Recruitment					All Other Primary Teachers and Principals				
YEAR	Persons	% Training	Days / Year	US$ / day	Total ('000$)	Persons	% Training	Days / Year	US$ / day	Total ('000$)
04/05	2,444	100.0%	4	15.00	147	12,425	5.0%	4	10.00	25
05/06	2,468	100.0%	30	15.00	1,111	14,526	13.5%	10	10.00	196
06/07	2,147	100.0%	30	15.00	966	16,592	22.5%	10	10.00	373
07/08	2,063	100.0%	30	15.00	928	18,306	31.0%	10	10.00	568
08/09	1,646	100.0%	30	15.00	741	19,898	40.0%	10	10.00	796
09/10	1,729	100.0%	30	15.00	778	21,036	50.0%	10	10.00	1,052
10/11	1,803	100.0%	30	15.00	811	22,240	57.0%	20	10.00	2,535
11/12	1,842	100.0%	30	15.00	829	23,453	65.5%	20	10.00	3,072
12/13	1,861	100.0%	30	15.00	837	24,677	75.0%	20	10.00	3,702
13/14	1,850	100.0%	30	15.00	833	25,882	82.5%	20	10.00	4,271
14/15	1,927	100.0%	30	15.00	867	27,046	91.5%	20	10.00	4,949
15/16	1,992	100.0%	30	15.00	896	28,263	100.0%	30	10.00	8,479

3.5	Special Programmemes for Developing Primary Education ('000 US$)									
YEAR	Programme 1	Programme 2	Programme 3	Programme 4	Programme 5	Programme 6	Programme 7	Programme 8	Programme 9	Total Expenditure
04/05	1,200	0	400	0	0	0	0	0	0	1,600
05/06	1,200	3,000	400	-	-	-	-	-	-	4,600
06/07	1,200	3,000	400	-	-	-	-	-	-	4,600
07/08	1,200	3,000	400	-	-	-	-	-	-	4,600
08/09	1,200	3,000	400	-	-	-	-	-	-	4,600
09/10	1,200	-	400	-	-	-	-	-	-	1,600
10/11	1,200	-	400	-	-	-	-	-	-	1,600
11/12	1,200	-	400	-	-	-	-	-	-	1,600
12/13	-	-	400	-	-	-	-	-	-	400
13/14	-	-	-	-	-	-	-	-	-	0
14/15	-	-	-	-	-	-	-	-	-	0
15/16	-	-	-	-	-	-	-	-	-	0

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3.6 **Recurrent Expenditure by Major Categories (million US$)**

YEAR	Teaching Staff Salary	Other Staff Salary	Textbooks	Teacher Guides	Pupil+school related	Teacher Training	Special Programmes	Other Expenditure	**Total Recurrent**
04/05	11.615	3.562	0.289	0.208	6.655	0.171	1.600	0.000	24.100
05/06	14.472	4.037	0.609	0.277	7.397	1.307	4.600	0.000	32.699
06/07	16.711	4.422	0.945	0.350	8.076	1.339	4.600	0.000	36.443
07/08	18.946	4.817	1.307	0.428	8.884	1.496	4.600	0.000	40.477
08/09	21.693	5.470	1.691	0.502	9.705	1.537	4.600	0.000	45.198
09/10	23.854	6.001	2.092	0.585	10.819	1.830	1.600	0.000	46.780
10/11	26.184	6.534	2.516	0.673	11.478	3.347	1.600	0.000	52.333
11/12	27.573	6.813	2.953	0.708	12.419	3.901	1.600	0.000	55.967
12/13	28.928	7.149	3.393	0.743	13.216	4.539	0.400	0.000	58.367
13/14	30.257	7.401	3.845	0.776	13.989	5.103	0.000	0.000	61.372
14/15	31.640	7.663	4.298	0.811	14.918	5.817	0.000	0.000	65.147
15/16	33.039	8.003	4.764	0.847	15.869	9.375	0.000	0.000	71.898

3.7 **Unit Cost (Recurrent Expenditure per Pupil) for Primary Education Level (US$)**

YEAR	Teaching Staff Slary	Other Staff Salary	Textbooks	Teacher Guides	Pupil+school related	Teacher Training	Special Programmes	Other Expenditure	Unit cost (US$)	Expend. per Gradu-ate (US$)
04/05	24.10	7.39	0.60	0.43	13.81	0.36	3.32	0.00	50.01	436.91
05/06	29.23	8.15	1.23	0.56	14.94	2.64	9.29	0.00	66.03	550.49
06/07	32.75	8.67	1.85	0.69	15.83	2.63	9.02	0.00	71.43	569.58
07/08	35.99	9.15	2.48	0.81	16.88	2.84	8.74	0.00	76.90	587.02
08/09	39.93	10.07	3.11	0.92	17.86	2.83	8.47	0.00	83.20	607.60
09/10	42.59	10.71	3.73	1.04	19.32	3.27	2.86	0.00	83.53	583.75
10/11	45.42	11.33	4.36	1.17	19.91	5.81	2.78	0.00	90.78	609.18
11/12	46.64	11.53	5.00	1.20	21.01	6.60	2.71	0.00	94.68	626.03
12/13	47.89	11.83	5.62	1.23	21.88	7.51	0.66	0.00	96.62	628.78
13/14	49.17	12.03	6.25	1.26	22.73	8.29	0.00	0.00	99.73	641.28
14/15	50.58	12.25	6.87	1.30	23.85	9.30	0.00	0.00	104.13	664.23
15/16	52.01	12.60	7.50	1.33	24.98	14.76	0.00	0.00	113.18	716.01

3.8 **Composition of Unit Cost (Public Recurrent Expenditure per Pupil) for Primary Education Level**

YEAR	Teaching Staff Salary	Other Saff Salary	Textbooks	Teacher Gides	Pupil+school related	Teacher Training	Special Programmes	Other Expenditure	All except Teacher sal.
04/05	48.2%	14.8%	1.2%	0.9%	27.6%	0.7%	6.6%	0.0%	51.8%
05/06	44.3%	12.3%	1.9%	0.8%	22.6%	4.0%	14.1%	0.0%	55.7%
06/07	45.9%	12.1%	2.6%	1.0%	22.2%	3.7%	12.6%	0.0%	54.1%
07/08	46.8%	11.9%	3.2%	1.1%	21.9%	3.7%	11.4%	0.0%	53.2%
08/09	48.0%	12.1%	3.7%	1.1%	21.5%	3.4%	10.2%	0.0%	52.0%
09/10	51.0%	12.8%	4.5%	1.2%	23.1%	3.9%	3.4%	0.0%	49.0%
10/11	50.0%	12.5%	4.8%	1.3%	21.9%	6.4%	3.1%	0.0%	50.0%
11/12	49.3%	12.2%	5.3%	1.3%	22.2%	7.0%	2.9%	0.0%	50.7%
12/13	49.6%	12.2%	5.8%	1.3%	22.6%	7.8%	0.7%	0.0%	50.4%
13/14	49.3%	12.1%	6.3%	1.3%	22.8%	8.3%	0.0%	0.0%	50.7%
14/15	48.6%	11.8%	6.6%	1.2%	22.9%	8.9%	0.0%	0.0%	51.4%
15/16	46.0%	11.1%	6.6%	1.2%	22.1%	13.0%	0.0%	0.0%	54.0%

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CAPITAL EXPENDITURE SUB-MODEL: PUBLIC PRIMARY SCHOOLS

4.1	Construction of Classrooms							
YEAR	Primary Classes (1)	Double-shift Rooms (out of avail. rooms)(2)	Classes in Double-shift Classrooms	% Pupils in double-shift	Classes in single-shift classrooms	Need for Classrooms (3)	Total Available Classrooms	New Classrooms to build (2)
04/05	12,172	1,648	3,296	27.1%	8,876	10,524	10,524	800
05/06	12,792	1,468	2,936	23.0%	9,856	11,324	11,324	1,062
06/07	13,486	1,100	2,200	16.3%	11,286	12,386	12,386	1,031
07/08	14,242	825	1,650	11.6%	12,592	13,417	13,417	1,089
08/09	15,056	550	1,100	7.3%	13,956	14,506	14,506	1,117
09/10	15,898	275	550	3.5%	15,348	15,623	15,623	1,159
10/11	16,782	0	0	0.0%	16,782	16,782	16,782	890
11/12	17,672	0	0	0.0%	17,672	17,672	17,672	869
12/13	18,541	0	0	0.0%	18,541	18,541	18,541	852
13/14	19,393	0	0	0.0%	19,393	19,393	19,393	886
14/15	20,279	0	0	0.0%	20,279	20,279	20,279	897
15/16	21,176	0	0	0.0%	21,176	21,176	21,176	908

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

(2) See Handbook, Chapter 5, Section 11 "Classrooms to be built"

(3) Classrooms needed due to changes in pupil enrolment (which in turn are due to changes in school age population)

4.2	Classrooms to replace		Construction of Classrooms (1)			Major Repair of Classrooms and Furniture			
	Temp.classrooms to replace			Expend. (2)/	Total	% to		Expenditure/	Total
YEAR	Number	% of Total	Classrooms	classr. ('000$)	('000 US$)	Repair	Classrooms	classr. ('000$)	('000 US$)
04/05	500	4.8%	1,300	4.0	5,200	10.0%	1,052	2.0	2,104
05/06	500	4.4%	1,562	4.0	6,248	10.0%	1,132	2.0	2,264
06/07	500	4.0%	1,531	4.0	6,124	10.0%	1,238	2.0	2,476
07/08	500	3.7%	1,589	4.0	6,356	10.0%	1,341	2.0	2,682
08/09	600	4.1%	1,717	4.0	6,868	10.0%	1,450	2.0	2,900
09/10	650	4.2%	1,809	4.0	7,236	10.0%	1,562	2.0	3,124
10/11	650	3.9%	1,540	4.0	6,160	10.0%	1,678	2.0	3,356
11/12	0	0.0%	869	4.0	3,476	10.0%	1,767	2.0	3,534
12/13	0	0.0%	852	4.0	3,408	10.0%	1,854	2.0	3,708
13/14	0	0.0%	886	4.0	3,544	10.0%	1,939	2.0	3,878
14/15	0	0.0%	897	4.0	3,588	10.0%	2,027	2.0	4,054
15/16	0	0.0%	908	4.0	3,632	10.0%	2,117	2.0	4,234

(1) Replacement of temporary classsrooms + classrooms needed for reducing double-shift
+ classrooms needed due to the increase of pupil enrolment

(2) Construction cost/classroom include contruction + furniture + equipment.
It also includes the cost of construction + equipment of other rooms such as rooms for principals, teachers, school administration etc.

4.3	Computer Laboratories in Schools ('000 US$)							
	Schools w/o	New Comp. labs: constr.+equipt			UpGrade of computer labs			Expend. For
YEAR	Comp Lab.	Laboratories	Unit cost	Total	Laboratories	Unit cost	Total	Comp. labs
04/05	520	209	12.0	2,508	100	8.0	800	3,308
05/06	363	150	12.0	1,800	100	8.0	800	2,600
06/07	286	150	12.0	1,800	100	8.0	800	2,600
07/08	200	150	12.0	1,800	100	8.0	800	2,600
08/09	118	150	12.0	1,800	100	8.0	800	2,600
09/10	55	128	12.0	1,536	100	8.0	800	2,336
10/11	0	73	12.0	876	100	8.0	800	1,676
11/12	0	88	12.0	1,056	100	8.0	800	1,856
12/13	0	66	12.0	792	100	8.0	800	1,592
13/14	0	69	12.0	828	100	8.0	800	1,628
14/15	0	89	12.0	1,068	100	8.0	800	1,868
15/16	0	80	12.0	960	100	8.0	800	1,760

4.4	School Libraries ('000 US$)							
	Schools w/o	Schools to install new libraries			Sch. to upGrade libraries (books etc.)			Expenditure
YEAR	Library	Schools	Unit cost	Total	UpGrade Lib	Unit cost	Total	for Libraries
04/05	370	189	6.0	1,134	100	1.5	150	1,284
05/06	233	150	6.0	900	100	1.5	150	1,050
06/07	156	150	6.0	900	100	1.5	150	1,050
07/08	70	138	6.0	828	100	1.5	150	978
08/09	0	87	6.0	522	100	1.5	150	672
09/10	0	73	6.0	438	100	1.5	150	588
10/11	0	73	6.0	438	100	1.5	150	588
11/12	0	88	6.0	528	100	1.5	150	678
12/13	0	66	6.0	396	100	1.5	150	546
13/14	0	69	6.0	414	100	1.5	150	564
14/15	0	89	6.0	534	100	1.5	150	684
15/16	0	80	6.0	480	100	1.5	150	630

4.5	Total Capital Expenditure (million US$)				of which:
	Classrooms		Other	Total capital	Parent contrib
YEAR	Building	Repair	Facilities	Expenditure	(million $)*
04/05	5.200	2.104	4.592	11.896	0.000
05/06	6.248	2.264	3.650	12.162	0.000
06/07	6.124	2.476	3.650	12.250	0.000
07/08	6.356	2.682	3.578	12.616	0.000
08/09	6.868	2.900	3.272	13.040	0.000
09/10	7.236	3.124	2.924	13.284	0.000
10/11	6.160	3.356	2.264	11.780	0.000
11/12	3.476	3.534	2.534	9.544	0.000
12/13	3.408	3.708	2.138	9.254	0.000
13/14	3.544	3.878	2.192	9.614	0.000
14/15	3.588	4.054	2.552	10.194	0.000
15/16	3.632	4.234	2.390	10.256	0.000

* Direct Parent Contribution to the capital expenditure

Glossary

GLOSSARY of Technical Terms used in the ANPRO-Model

ACCESS RATE	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).
ADMINISTRATIVE SUPPORT (ADMINISTRATION EXPENDITURE)	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.
ADMISSION RATE	(See ACCESS RATE)
ANPRO-MODEL	The Analysis and Projection Model presented in the Handbook.
AVERAGE NUMBER OF PUPIL-YEARS PER PUPIL BY GRADE	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.
ASSUMPTION	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)*
BASELINE DATA	The statistical data for the year preceding the first projection year.
BASE YEAR	The year preceding the first projection year.
BUDGET	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.
CAPITAL EXPENDITURE	(see COSTS)
CLASS	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.

COEFFICIENT OF (INTERNAL) EFFICIENCY	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).
COSTS (EXPENDITURE)	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.).
CONSTANT PRICE (CONSTANT COST)	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.
DEPENDENT VARIABLE	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)*
DIRECT PARENT CONTRIBUTIONS	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.
DISTRICT LEARNING CENTRE (DLC)	A centre for NON-FORMAL EDUCATION which serves a larger geographical area. The name of such NFE facilities may change from country to country.
DROP-OUT RATE	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.
ECCE (PRE-SCHOOL)	'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'.

ENTRANTS	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.
EQUIVALENT PROGRAMMES	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.
EXPENDITURE	(See COSTS)
FUNDAMENTAL SCHOOL QUALITY LEVEL (FSQL)	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)*
GENDER PARITY INDEX	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.
GRADUATES	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).
GROSS ENROLMENT RATE (GER)	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.
GROSS INTAKE RATE	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.
INDEPENDENT VARIABLE	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)*
INTAKE RATE	The number of students entering the first grade of Professional Secondary Schools expressed as a percentage of GRADUATES of General Secondary Education.
INTAKE CAPACITY (of Teacher Training Institutions)	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.

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)*
NET ENROLMENT RATE (NER)	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.
NEW ENTRANTS	Pupils entering the first grade of an education cycle (for instance, Primary, Secondary, etc.) for the first time.
NON-FORMAL EDUCATION (NFE)	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.
NON-PUBLIC SCHOOL	Schools operated under private management.
NON-STANDARD TEACHERS	Teachers whose qualifications do not conform to the standards set by the Ministry of Education.
OPERATING EXPENDITURE	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.
PASS RATE	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.
PROFESSIONAL SECONDARY EDUCATION	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.
PROGRESSION RATE (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.
PROMOTION RATE	The percentage of pupils in a given grade who are promoted to the next higher grade in the following school year.
PROVINCIAL LEARNING CENTRE	A centre for NON-FORMAL EDUCATION which serves an entire province. The name of such NFE facilities may change from country to country.
PROVISION OF TEACHER GUIDES (per cent received)	Teachers having received a set of teacher guides expressed as a percentage of the total number of teachers.

PROVISION OF TEXTBOOKS (per cent of pupils received)	Pupils having received a set of textbooks expressed as a percentage of the total enrolment.
PUPIL CLASS CONTACT HOURS	The number of hours per week the pupil spends in the CLASS.
PUPIL-CLASS RATIO	The number of pupils per CLASS. Together with the TEACHER-CLASS RATIO, it determines the pupil-teacher ratio.
PUPIL COHORT	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.
PUPIL-RELATED EXPENDITURE	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)*
PUPIL-YEAR	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.
PUPIL-YEAR PER GRADUATE	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.
RECURRENT EXPENDITURE	(see COSTS)
RE-INTEGRATION RATE	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.
REPETITION RATE	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.
RETENTION RATE	The percentage of a PUPIL COHORT still enrolled in the last year of the cycle. *(see also INTERNAL EFFICIENCY)*
SCHOOL-AGE POPULATION	The total number of children in the officially defined school-age year (or range of years), whether they are enrolled in school or not.
SCHOOL-RELATED EXPENDITURE	EXPENDITURE directly related to the number of schools, for example blackboards, utilities, etc. *(See ANPRO-MODEL Table 3.2)*

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

Education Policy and Reform Unit (EPR)
UNESCO Asia and Pacific Regional Bureau for Education
920 Sukhumvit Road, Prakanong
Bangkok 10110, Thailand
Tel: (66) 2-391-0577, 2-391-0703
Fax: (66) 2-391-0866
Email: epr@unescobkk.org

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

Education for All

UNESCO Bangkok
Asia and Pacific Regional Bureau for Education

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:

Education Policy and Reform Unit (EPR)
UNESCO Asia and Pacific Regional Bereau for Education
920 Sukhumvit Road, Prakanong
Bangkok 10110, Thailand
Tel: (66) 2-391-0577, 2-391-0703
Fax: (66) 2-391-0866
E-mail: epr@unescobkk.org