

**Palestinian Authority
Ministry of Education and Higher Education
World Bank Project
PHRD Japanese Grant**

**Higher Education
Budget Trade-Off Model**
Final Report

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February 2005

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Preface

The purpose of this work is to contribute to strengthen the planning, policy-making and budgeting process in Palestinian higher education sector through the design of a Budget Trade-Off Model (BTM). The BTM will help both the Ministry of Education and Higher Education (MOEHE) and Higher Education Institutions (HEI) in assessing the effects of alternative options concerning admissions, real resources allocation, priority areas and financial schemes. For this purpose, the model developed in 2001 has been reviewed and updated into a Global Budget Trade-Off Model (GBTM) and an Institutional Model (IBTM) was designed.

The main characteristics of the software delivered to the MOEHE as well as the main results of the set of simulations performed to test the models are presented in this paper. Other outputs of this work comprise User's manuals and specifications of the database to be designed to produce the data required for running the model.

Although based on the framework designed in 2001, the GBTM was improved and updated to make it more relevant to the existing situation of the sub-sector. The software interface was designed to be more users friendly and able to be linked to the higher education database developed by the Development & Scientific Research Department at the MOEHE. The IBTM was designed to both meet the institutions' planning needs and provide the GBTM with accurate data.

This work was funded by a PHRD Japanese grant in preparation of the World Bank project to support Higher Education sector in West Bank and Gaza. It was achieved thanks to the assistance and advices of Claude Tibi who was the designer of the 2001 financing strategy model. Special thanks go to Hisham Kuhail, Gaby Baramki, Fahoum Al-Shalabi, Frosse Dabit, Ramzi Rihan and all MOEHE officials and Higher Education institutions representatives for their hospitality, availability and commitment to the project.

ABBREVIATIONS & ACRONYMS

AQS	ADMISSION AND QUALITY CONTROL SCENARIO
BSM	BASE SUB-MODEL
BTM	BUDGET TRADE-OFF MODEL
BTM	INSTITUTIONAL EXPENDITURES SUB-MODEL
CF	CAPITAL FUND
ESM	EXPENDITURE SUB-MODEL
FSM	FINANCING SUB-MODEL
FSS	FINANCING STRATEGY SCENARIO
GBTM	GLOBAL BUDGET TRADE-OFF MODEL
GBTM	INSTITUTIONAL FINANCING SUB-MODEL
HE	HIGHER EDUCATION
HEI	HIGHER EDUCATION INSTITUTIONS
IBSM	INSTITUTIONAL BASE SUB-MODEL
IBTM	INSTITUTIONAL BUDGET TRADE-OFF MODEL
IRSM	INSTITUTIONAL REAL RESOURCES SUB-MODEL
MOEHE	MINISTRY OF EDUCATION AND HIGHER EDUCATION
PNA	PALESTINIAN NATIONAL AUTHORITY
QIF	QUALITY IMPROVEMENT FUND
RF	RESEARCH FUND
RSM	REAL RESOURCES SUB-MODEL
SRLF	STUDENT REVOLVING LOAN FUND
TRS	TREND SCENARIO
TW	TAWJIHI
TWH	TAWJIHI IN HUMANITIES
TWS	TAWJIHI IN SCIENCES
TWV	TAWJIHI VOCATIONAL

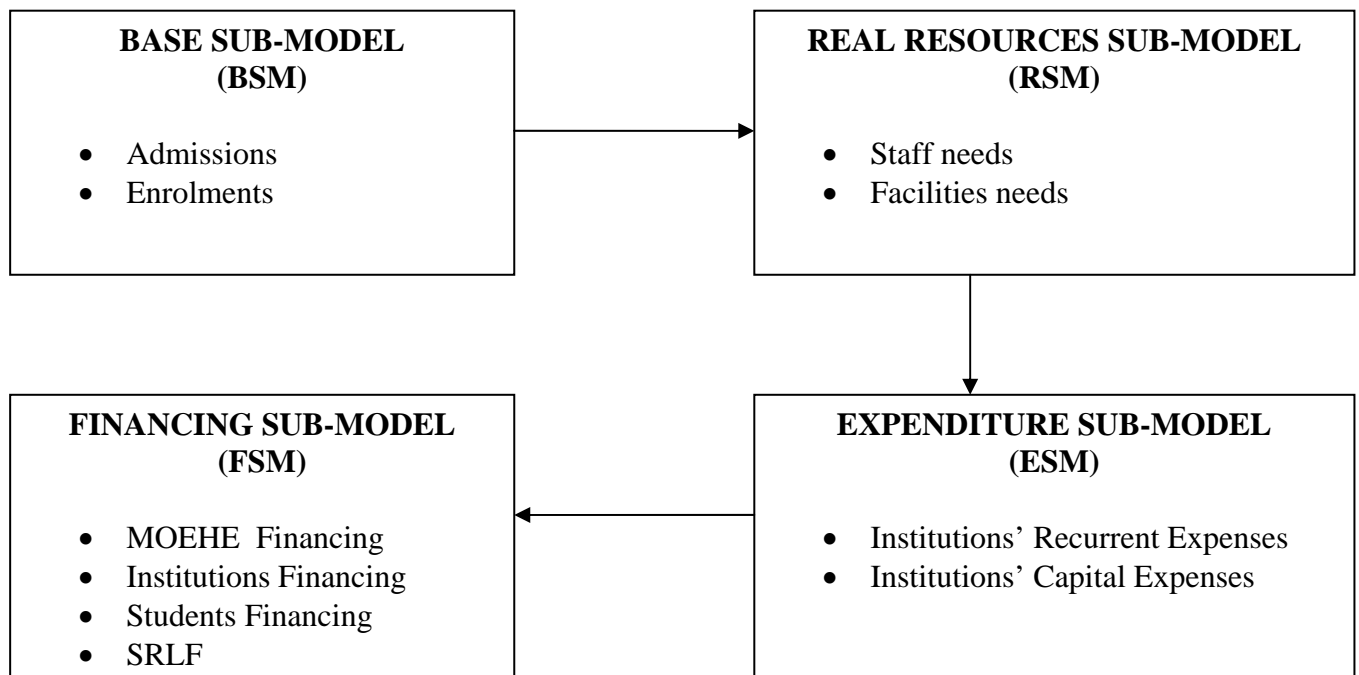
Chapter 1. The Global Budget Trade-Off Model

The Global Budget Trade-Off Model is a tool for assessing the effects of different Higher Education (HE) policy aspects. It was initially an integrated part of the Financing Strategy developed in 2000/2002 and meant to specify and operationalize the strategy. It has been designed to estimate especially the impact of the following policy elements:

- What would be HE resource needs in the medium-long range (5 to 10 years), under alternative scenarios concerning admissions and enrollments and alternative assumptions about quality, efficiency, capacity expansion, external efficiency, and improved HE sub-sector and institution management?
- How might admissions vary by type and status of institution, and field of study, under alternative fee levels and alternative mechanisms for financing students' fees and what would be the financing requirements and funding sources for students' assistance, under the alternative schemes?
- What would be the contributions from the various sources (PNA, donors, and students) and the financing mechanisms that would respond to the needs and contribute best to achieving the objectives of the sub-sector?

1.1. Designing the Global Budget Trade-Off Model

In order to assess the issues above, the GBTM is composed of four sub-models related as follow:



The **BSM** uses high school graduates expectations to project admissions and then enrolments, given predetermined HE internal efficiency hypothesis. Outputs from the BSM are used to project the staff and buildings needs, given student/staff ratios and normative space per student, through the **RSM**. Through the **ESM**, HEI recurrent and capital expenses are estimated using both the RSM outputs and unit costs based on salary scale, per-student non-salary expenses as well as building and equipment normative costs. Having the institutions' financial resource requirements through the ESM, the **FSM** allows simulating various scenarios regarding student financing; and Institutions and PNA budgets.

The typology of HEI and fields of study used for the GBTM is the following:

- HEI are categorized in:
 - Public Non Profit universities
 - PNA universities (Al Quds Open and Other PNA)
 - Private universities
 - Colleges
- Fields of studies are categorized in:
 - Education
 - Humanities
 - Social Sciences
 - Commerce and Economics
 - Law
 - Information Technology
 - Engineering
 - Medicine
 - Medical Professions
 - Science

1.1.1 The Base Sub-Model

The BSM is designed for projecting admissions and enrolments in HE. Admissions projections are performed using expected Tawjihi (TW) graduates and target admission rates:

$$A_{ij}^n = a_{ij}^n (C_s^{n-1}t_s^{n-1} + C_h^{n-1}t_h^{n-1} + C_v^{n-1}t_v^{n-1} + C_s^{n-2}t_s^{n-2} + C_h^{n-2}t_h^{n-2} + C_v^{n-2}t_v^{n-2}), \text{ Where:}$$

- A_{ij}^n is the projection of students admitted, for academic year n , in institutions of type i and attending field of studies j
- a_{ij}^n is the target percentage of students admitted, for academic year n , in institutions of type i to attend programs of field j
- C_s^n is the number of candidates to the TW in sciences (TWS) at the end of academic year n and t_s^n is the corresponding target graduation rate
- C_h^n is the number of candidates to the TW in humanities (TWH) at the end of academic year n and t_h^n is the corresponding target graduation rate

- C_v^n is the number of candidates to the vocational TW (TWV) at the end of academic year n and t_v^n is the corresponding target graduation rate

Enrollments are projected using a stock model:

$$E_{ij}^n = E_{ij}^{n-1} + A_{ij}^n - E_{ij}^{n-1} g_{ij}^{n-1} - E_{ij}^{n-1} d_{ij}^{n-1}, \text{ Where:}$$

- E_{ij}^n is the projection of students enrolled, for academic year n , in institutions of type i and attending field of studies j
- g_{ij}^n is the target percentage of students graduated, for academic year n , in institutions of type i and field of study j
- d_{ij}^n is the target percentage of dropping out students, for academic year n , in institutions of type i and field of study j

1.1.2. The Real Resources Sub-Model

The RSM projects Staff and building needs given expected enrolment levels as determined by the BSM. HEI staff is categorized in: teaching, administrative and service staff. Buildings areas are categorized in teaching/administrative space.

Categories of staff needs are projected using target student/staff ratios:

$$S_{ij}^{cn} = E_{ij}^n / sr_{ij}^{cn}, \text{ Where:}$$

- S_{ij}^{cn} is the category of staff c need, for academic year n , in institutions of type i and programs of field j
- sr_{ij}^{cn} is the target student/category of staff c ratio, for academic year n , in institutions of type i and programs of field j

Building needs are projected using target student/space ratios:

$$B_{ij}^{cn} = (E_{ij}^n - E_{ij}^{n-1}) br_{ij}^{cn}, \text{ Where:}$$

- B_{ij}^{cn} is the additional space of category c need, for academic year n , in institutions of type i and programs of field j
- br_{ij}^{cn} is the target per student category of space c ratio, for academic year n , in institutions of type i and programs of field j

The model allows the use of different assumptions regarding changes in student/staff ratios and space per student. Those changes might include lower student-teacher ratios in fields of study where they are considered too high or increased teaching space per student, to assess the impact of quality improvement; as well as higher student-staff ratios, when they are

considered too low, or decreased teaching space per student to assess the impact of efficiency improvement.

1.1.3. The Expenditure Sub-Model

The ESM is used for projecting institutions' financial resource requirements and normative costs per student. **Recurrent expenses** are projected as the sum of teachers and non-teaching staff salaries and non-salary recurrent expenses. Salaries derive from staff numbers estimated through RSM and average salaries.

$$W_{ij}^n = S_{ij}^{tn} w^{tn} + S_{ij}^{an} w^{an} + S_{ij}^{sn} w^{sn}, \text{ Where:}$$

- w^{cn} is the average salary for staff category c ratio ($c=t$ for teaching staff, $c=a$ for administrative staff and $c=s$ for service staff)

Average salaries are computed based on the distribution of staff by category/qualification and corresponding salary scale. This distribution is one component among the set of options for raising quality.

Non-salary recurrent expenses are projected on a per-student basis, with increases accounting for quality improvement.

Capital expenses are assessed as the sum of building and capital expenses. Building expenditures are projected taking into account additional space required for teaching and other purposes, as needed by increased enrollments (BSM) and building costs per square meter. Equipment expenses are assessed on a per student basis and projected according to the increase in enrollments.

Normative Costs are defined as the sum of per student recurrent expenses (by type of institution and field of study) and annualized capital cost per place. Both recurrent and capital costs are assessed using the scenario options regarding student-staff ratios, space, and equipment cost per student for the year considered.

1.1.4. The Financing Sub-Model

The FSM assesses sub-sector financing scheme considering the three major players: Students, HEI and the MOEHE.

- Student Financing

The model considers only fees financing, subsistence expenses are not taken into account but could be in an improved version of the model. Fees are financed through four main sources: waivers; loans; scholarships (PNA and institutions); and students/family contribution. Waivers are partial fee exemption funded by the PNA and provided by institutions to students

registered in specific fields of study. PNA scholarships are given to few students with high achievements in some priority fields. It is assumed that loans are granted to low-income students with good achievement, whatever is their field of study: Each year, a given percentage of newly admitted students are granted loans covering a maximum share of the fee (50% in the Trend Scenario).

- Student Revolving Loan Fund

The model takes into consideration loans already granted since 2001 as well as new loans expected to be granted during the next 10 years based on both a target percentage of new students granted a loan and an average loan as a share of fee amount. New and total loans are assessed and annual repayments are estimated given loan scheme parameters (interest rate, default rate, repayment period, etc) in order to evaluate the extent to which additional funds are required to finance new loans.

- HEI budgets

Funding of recurrent expenses (ESM) comes from the following sources: Fees; PNA budget support; Waivers & scholarships; Quality Fund; sales of services; and other recurrent income (grants, etc.). Fees assessment comes from Student financing scheme; PNA budget support and specific funds resources are estimated through PNA financing scheme (see below); and other resources (sales of services, grants, etc.) are supposed to follow the same trend as the PNA resources. Capital expenses are covered by both PNA Capital Fund and other grants.

- The MOEHE budget

PNA contribution to the sub-sector through the MOEHE is composed of four components: salaries paid to PNA colleges and Al Aqsa University staff; budget support to PNP universities and Al Quds Open University; Waivers and scholarships aimed to finance fees; and specific funds. Salaries are assessed through the ESM. Budget support to PNP universities is supposed to increase at the rate of MOEHE budget in the case where no alternative financing strategy is implemented. In the alternative scenario (financing strategy), PNA provides support to PNP universities through waivers, scholarships and specific funds. The MOEHE resources for the base year (\$ 20M) as well as their growth rate (3%) are taken as assumptions in the model.

1.2. Using the Global Budget Trade-Off Model

The GBTM performs projections over a ten year period starting from a base year. In order to run the model, detailed data regarding students; HEI staff, facilities and budgets; MOEHE budget; and SRLF for base year **b** and, in some cases, for **b-1** are required. Data regarding students' admissions and enrolments as well as HEI staff are already available

through MOEHE database. The later does not include, however, neither financial data nor information on space availability in HEI. The information collected through a specific survey on HEI staff, buildings and budgets was completed by administrative data provided by the MOEHE. Moreover, student and staff data format as designed in MOEHE database have been adapted to the GBTM data requirements.

The GBTM may be used for simulating scenarios and assessing the impact of various HE policies and more specifically:

- Admission and enrolment policy;
- Quality standards such as student-staff ratios and distribution of staff by qualification
- Financing strategy (fees, waivers and scholarships levels; SRLF scheme; PNA and HEI contributions)

Three basic scenarios, among the multiple potential ones, were simulated to test the model.

1.2.1. The Trend Scenario

The main assumption behind the Trend Scenario (TRS) is that the sub-sector would be led by the same policy meaning:

- **No students’ admission control**; admission rates by type of institution and field of study would keep they trend values summarized as follow:

**Admissions rates (% of total admissions to HE)
Trend Scenario**

	OPEN UNIVERSITY	OTHER UNIVERSITIES	COLLEGES	TOTAL
EDUCATION & HUMANITIES	16.9 %	45.8 %	3.3 %	67.0 %
SOCIAL SCIENCES, LAW & ECONOMICS	14.9 %	2.9 %	4.2 %	22.0 %
SCIENCE & TECHNOLOGY	2.6 %	3.6 %	4.7 %	11.0 %
TOTAL	34.4 %	53.3 %	12.2 %	100.0 %

- **No quality improvement**: Average student-staff ratios and per-student space will keep their base year values
- **No financing strategy**: No fees increase (as % of actual costs); PNA contribution will continue through budget support; a 30% expected repayment rate for SRLF with no interest.

1.2.2. The Admission and Quality control Scenario

It is assumed, in the Admission and Quality Control Scenario (AQS) that actions are taken in order to increase the relevance and the quality of the sub-sector:

- **Admission control:** admission rates by type of institution and field of study would change in order to both increase enrolment in colleges and in science and technology fields and to limit the expansion of enrolment in the Open University:

Admissions rates (% of total admissions to HE) Admission and Quality Control Scenario

	OPEN UNIVERSITY	OTHER UNIVERSITIES	COLLEGES	TOTAL
EDUCATION & HUMANITIES	16.9 %	45.8 %	3.3 %	67.0 %
SOCIAL SCIENCES, LAW & ECONOMICS	14.9 %	2.9 %	4.2 %	22.0 %
SCIENCE & TECHNOLOGY	2.6 %	3.6 %	4.7 %	11.0 %
TOTAL	34.4 %	53.3 %	12.2 %	100.0 %

- **Quality improvement:** Average student-staff ratios and per-student space will be improved in order to be comparable to international standards; as a result, internal efficiency of the sub-sector is assumed to be improved (by 30% for universities and 20% for colleges over the ten year period);
- **No financing strategy:** No fees increase (as % of actual costs); PNA contribution will continue through budget support.

1.2.3. The Financing Strategy Scenario

In addition to admission and quality control hypothesis assumed in the previous scenario, actions aiming to ensure the financial sustainability of the sub-sector would be taken in the Financing Strategy Scenario (FSS). The decisions to be taken would include:

- Increasing fees to reach 70% of normative cost in priority fields and 100% in other fields of study;
- PNA support to HEI is to be provided through an incentive waivers' system which covers the remaining 30% of normative cost for priority fields;
- Additional support is provided to HEI through specific funds:
 - A **Capital Fund** (CF) to support the investment effort of HEI and assumed to represent a given share of MOEHE budget (10-20%);

- A **Quality Improvement Fund** (QIF) to contribute to staff training and teaching material cost and assumed to represent a given share of MOEHE budget (10%);
 - A **Research Fund** (RF) to be funded separately from instruction
- A better repayment rate for SRLF (50%) with a 1.5% interest rate for covering administrative costs.

Some assumptions are shared by the three scenarios:

- The demand for higher education, based on TW graduation rates;
- Staff salary scales, assumed to keep their base year values;
- Unit building and equipments costs set to their normative values;
- Scholarships awarded by HEI.

The main outputs of the three performed scenarios are presented in Annex A and some results for the year 2014 are summarized in the following table:

GBTM SCENARIOS OUTPUTS

	2004	2014 (TRS)	2014 (AQS)	2014 (FSS)
Enrolment				
Total Enrolments	116, 745	246, 921	228, 171	228, 171
<i>% in Colleges</i>	<i>11.3%</i>	<i>9.2%</i>	<i>13.5%</i>	<i>13.5%</i>
<i>% in Open University</i>	<i>34.1%</i>	<i>40.6%</i>	<i>27.1%</i>	<i>27.1%</i>
<i>% in Education & Humanities</i>	<i>46.2%</i>	<i>58.6%</i>	<i>45.9%</i>	<i>45.9%</i>
<i>% in Social Sciences</i>	<i>30.3%</i>	<i>26.5%</i>	<i>27.6%</i>	<i>27.6%</i>
<i>% in Science & Technology</i>	<i>23.5%</i>	<i>14.9%</i>	<i>26.5%</i>	<i>26.5%</i>
Financial Balance (US\$ Million)				
HEI	- 33.8	- 44.3	- 84.7	+ 1.1
MOEHE	- 10.8	- 17.7	- 26.8	+ 6.6
SRLF	- 11.0	- 22.9	- 26.4	- 41.1
Student Funding				
Average Fee (US\$)	666	557	721	1269
<i>Students contribution</i>	<i>78.6%</i>	<i>75.0%</i>	<i>76.5%</i>	<i>78.3%</i>
<i>Scholarships</i>	<i>7.3%</i>	<i>5.5%</i>	<i>4.6%</i>	<i>2.6%</i>
<i>Loans</i>	<i>14.1%</i>	<i>19.5%</i>	<i>18.9%</i>	<i>19.1%</i>

The following conclusions may be drawn from these figures:

- With no students admission control policy, the global enrolments in HE will more than double, having more than 40% enrolled in the Open University and less than 10% in colleges; the sub-sector relevance would deteriorate since the share of education and humanities fields of studies would increase (from 46 to 59%) while the share of science and technology would decrease (from 24 to 15%); the total resources needed to finance the sub-sector are estimated to \$ 300 M in 2014.
- The admission control policy would slow down the total enrolment through a larger part of colleges enrolment (13.5%) and the sub-sector relevance would be improved with a larger share of students enrolled in Science & Technology; Despite a lower total enrolment, the AQS would increase the financing need of the sector which would reach \$ 380 M in 2014; with no change in the financial scheme, this policy would worsen the financial gap of the sub-sector (\$138 M instead of \$85 M in the TRS);
- The Financial Strategy would allow the HEI and the MOEHE to balance their financial accounts; however average fee would have to be almost doubled (from 666\$ to 1269\$); and, to maintain the loans contribution to 19% of fees, additional funds for the SRLF would also double to reach \$ 41 M in 2014.

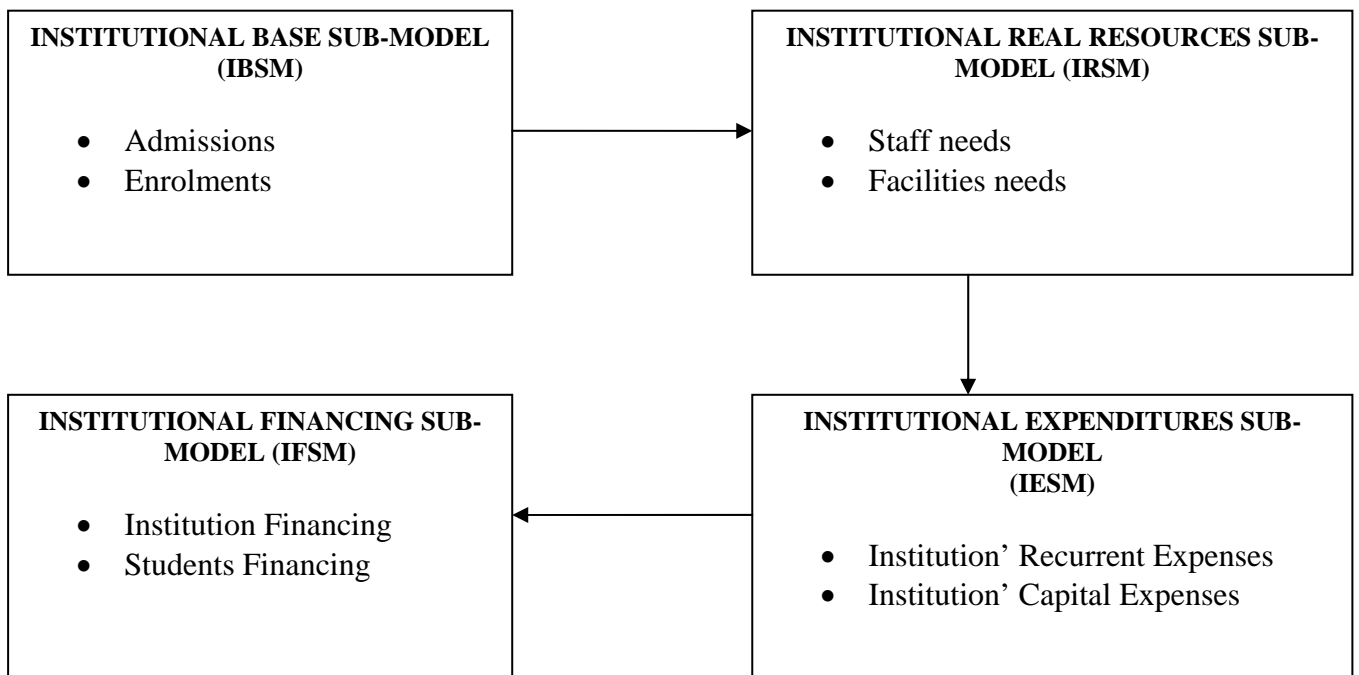
Chapter 2. The Institutional Budget Trade-Off Model

The Institutional Budget Trade-Off Model (IBTM) is a tool for assessing the effects of each Higher Education Institution strategy in the general framework of the sub-sector policy. Derived from the GBTM, it is designed to assess the impact of the following strategy elements:

- What would be the HEI resource needs in the medium-long range (5 to 10 years), under alternative scenarios concerning admissions and enrollments and alternative assumptions about quality, efficiency, capacity expansion, external efficiency, and improved institution management?
- How might admissions vary by type and field of program, under alternative fee levels and alternative mechanisms for financing students' fees and what would be the financing requirements and funding sources for students' assistance, under the alternative schemes?
- What would be the contributions from the various sources (PNA, donors, and students) and the financing mechanisms that would respond to the needs and contribute best to achieving the objectives of the institution?

2.1. Designing the Institutional Budget Trade-Off Model

The four sub-models - used for the GBTM- have been adapted to the institutions needs and to the type of data available at the institution level.



The **IBSM** uses admissions expectations to project enrolments given predetermined internal efficiency assumptions. Outputs from the IBSM are used to project the staff and buildings needs, giving student/staff ratios and normative space per student, through the **IRSM**. The **IESM** estimates institution' recurrent and capital expenses, based on IRSM outputs and unit costs. Having the institution' financial resource requirements through the IESM, the **IFSM** allows to simulate various scenarios regarding student financing and institution budget.

The typology of programs and fields of study used for the IBTM is the following:

- Programs are categorized in:
 - Diploma and undergraduate certificates
 - Bachelor and equivalent programs
 - Graduate programs
- Fields of studies categorization is to be set by each institution; the model allows up to thirteen fields.

2.1.1. The Institutional Base Sub-Model

The IBSM is designed for projecting admissions and enrolments. Admissions per program and field could be either predefined for target years (base+5 and base+10) or estimated based on a given annual growth rate. Enrollments are projected using a stock model:

$$E_{ij}^n = E_{ij}^{n-1} + A_{ij}^n - E_{ij}^{n-1} g_{ij}^{n-1} - E_{ij}^{n-1} d_{ij}^{n-1}, \text{ Where:}$$

- E_{ij}^n is the projection of students enrolled, for academic year n , in programs of type i and attending field of studies j
- A_{ij}^n is the projection of students admitted, for academic year n , in program of type i and field of studies j
- g_{ij}^n is the target percentage of students graduated, for academic year n , in program of type i and field of study j
- d_{ij}^n is the target percentage of dropping out students, for academic year n , in program of type i and field of study j

2.1.2. The Institutional Real Resources Sub-Model

The IRSM projects Staff and building needs giving expected enrolment levels as determined by the IBSM. Institution staff is categorized in: teaching, administrative and service staff. Buildings areas are categorized into teaching/administrative space.

Staff needs are projected using target student/staff ratios:

$$S_{ij}^{cn} = E_{ij}^n / sr_{ij}^{cn}, \text{ Where:}$$

- S_{ij}^{cn} is the category of staff c need, for academic year n , to deliver instruction for program of type i and field of study j
- sr_{ij}^{cn} is the target student/category of staff c ratio, for academic year n , for programs of type i and field j

Building needs are projected using target student/space ratios:

$$B_{ij}^{cn} = (E_{ij}^n - E_{ij}^{n-1}) br_{ij}^{cn}, \text{ Where:}$$

- B_{ij}^{cn} is the additional space of category c need, for academic year n , for programs of type i and field j
- br_{ij}^{cn} is the target per student category of space c ratio, for academic year n , in institutions of type i to attend programs of field j

The model allows the use of different assumptions regarding changes in student/staff ratios and space per student. Those changes might include lower student-teacher ratios in fields of study where they are considered too high, to assess the impact of quality improvement; as well as higher student-staff ratios, when they are considered too low, to assess the impact of efficiency improvement.

2.1.3. The Institutional Expenditure Sub-Model

The IESM is used for projecting an institution's financial resource requirements and normative costs per student. **Recurrent expenses** are projected as the sum of teachers and non-teaching staff salaries and non-salary recurrent expenses. Salaries derive from staff numbers estimated through IRSM and average salaries.

$$W_{ij}^n = S_{ij}^{tn}w^{tn} + S_{ij}^{an}w^{an} + S_{ij}^{sn}w^{sn}), \text{ Where:}$$

- w^{cn} is the average salary for staff category c ratio ($c = t$ for teaching staff, $c = a$ for administrative staff and $c = s$ for service staff)

Average salaries are computed based on the distribution of staff by category/qualification and corresponding salary scale. This distribution is one component among the set of options for raising quality.

Non-salary recurrent expenses are projected on a per-student basis, with increases accounting for quality improvement.

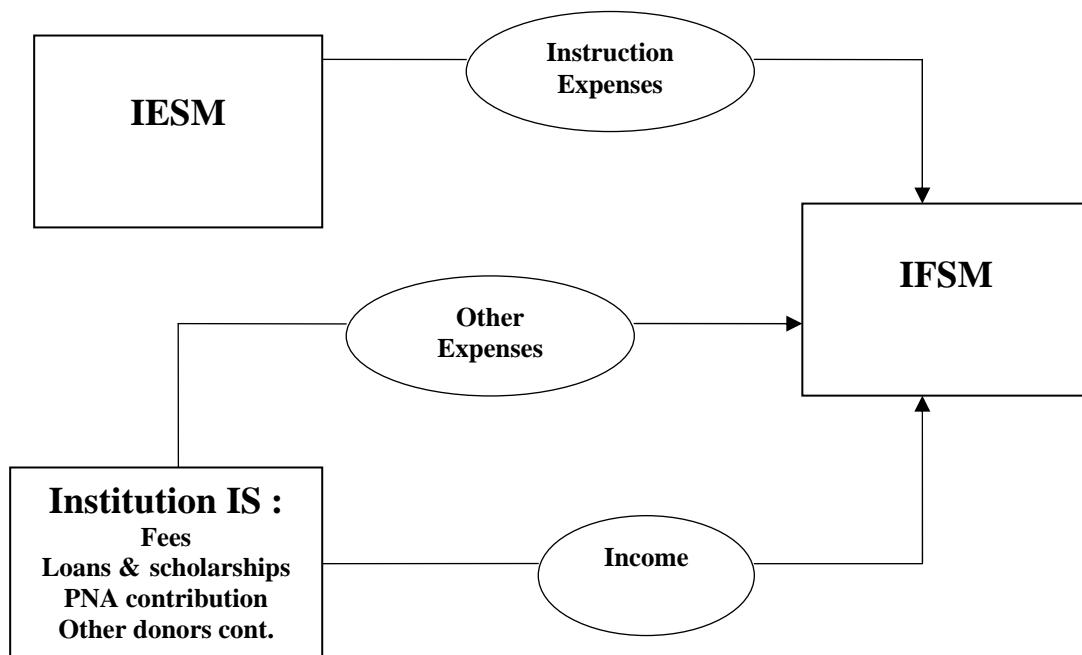
Capital expenses are assessed as the sum of building and capital expenses. Building expenditures are projected taking into account additional space required for teaching and other purposes, as needed by increased enrollments (IBSM) and building costs per square meter. Equipment expenses are assessed on a per student basis and projected according to the increase in enrollments.

Normative Costs are defined as the sum of per student recurrent expenses (by type of program and field of study) and annualized capital cost per place. Both recurrent and capital costs are assessed using the scenario options regarding student-staff ratios, space, and equipment cost per student for the year considered.

2.1.4. The Institutional Financing Sub-Model

The IFSM assesses the institution financing scheme considering the institution budget and students funding mechanisms. Projections for running costs are based on per program and per student costs. Capital costs are estimated using the actual investment projects and per student and per field unit costs. Fees to be collected are estimated using the enrolments projections produced through the base sub-model. Other income expectations (PNA contribution, other donations, services sales etc.) are computed using the data provided by the financial Information System of the institution.

FINANCING SUB-MODEL



▪ Institution Budget

Institution Expenditure comprises salaries; non-salary recurrent expenses; student aids and capital expenses. Funding sources are: Fees; PNA budget support; Waivers & scholarships; Quality Fund; sales of services; and other recurrent income (grants, etc.). Fees assessment comes from Student financing scheme; PNA budget support and specific funds resources are estimated based on financing strategy assumptions; and other resources (sales of services, grants, etc.) are supposed to grow at a given trend. Capital expenses are covered up to 10% through PNA Capital Fund.

▪ Student Financing

Fees are financed through five main sources: waivers; SRLF loans; institution financial aids (scholarships and loans); other scholarships (PNA and institutions); and students/family contribution. Waivers are partial fee exemption funded by the PNA and provided by institutions to students registered in specific fields of study; they are assumed to represent a certain percentage of fees in priority fields. Scholarships are assumed to grow at a given rate; total loans amount are estimated based on a percentage of beneficiaries and an average loan.

2.2. Using the Institutional Budget Trade-Off Model

The IBTM allows performing projections of enrolments, resources and budgets over a ten year period. In order to run the model, detailed data regarding students; staff, facilities and budgets; for base year **b** and, in some cases, for **b-1** are required. These data are available in most institutions even though generally not centralized in one single administrative unit. It has to be mentioned that quality of information varies widely from one institution to another.

The IBTM may be used by each institution for assessing its needs and for simulating scenarios of alternative policies regarding:

- Admissions by program and field of study
- Quality standards such as student-staff ratios, distribution of staff by qualification
- Financing strategy (fees; other sources of income; student aids etc.)

The IBTM was tested using An-Najah National University data and the assumptions of the Financing Strategy Scenario. The main outputs are presented in Annex B and some results for the are summarized in the following table:

	2004	2009	2014
Enrolment			
Total Enrolments	10, 746	20, 501	38, 196
<i>% in Education & Humanities</i>	<i>40.0%</i>	<i>32.8%</i>	<i>26.5%</i>
<i>% in Social Sciences</i>	<i>24.6%</i>	<i>19.7%</i>	<i>19.6%</i>
<i>% in Science & Technology</i>	<i>29.7%</i>	<i>41.0%</i>	<i>47.0%</i>
<i>% in Medical Sciences</i>	<i>5.7%</i>	<i>6.6%</i>	<i>6.9%</i>
Financial Balance (JD Million)	- 10.4	- 0.8	- 4.3
Student Funding			
Average Fee (JD)	759	1145	1262
<i>Students contribution</i>	<i>67.2%</i>	<i>73.1%</i>	<i>73.3%</i>
<i>AN-NAJAH Aids</i>	<i>17.9%</i>	<i>14.9%</i>	<i>14.7%</i>
<i>SRLF Loans</i>	<i>14.9%</i>	<i>12.0%</i>	<i>12.0%</i>

Chapter 3. Recommendations and further improvements

3.1. Model potential improvement

One advantage of developing the BTM on an accessible platform (EXCEL) is to allow future users to introduce changes in order to improve its accuracy as a planning tool. Although further improvements would arise after using the model in planning process, potential areas of enrichments of both the GBTM and the IBTM are identified.

3.1.1. The Global Model

The GBTM could be improved in the following areas:

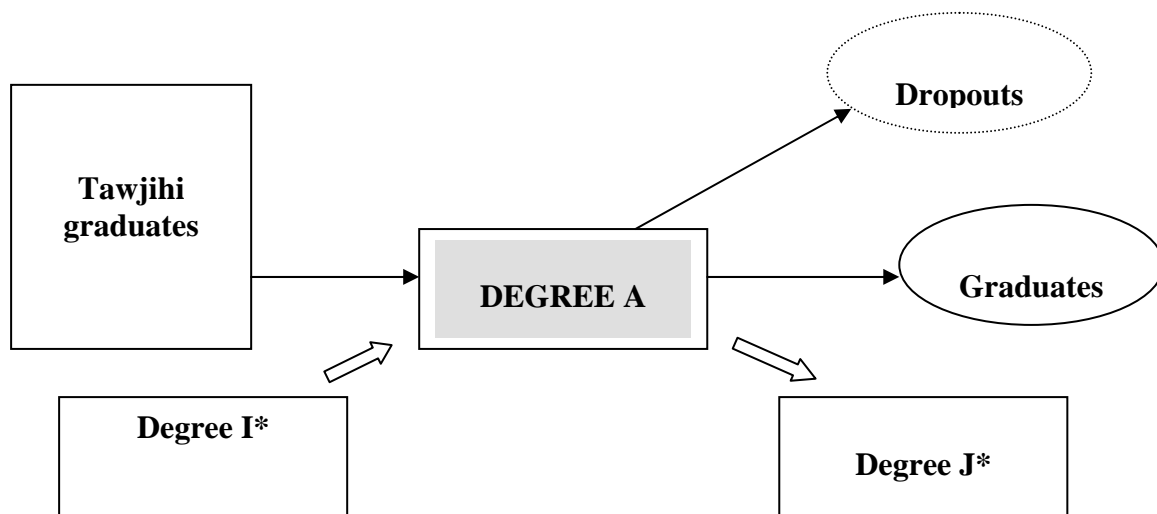
- **Institutions categories:** Due to the time schedule, the new BTM used the 2001 model typology for institutions. This typology needs to be re-adapted to the sub-sector real picture. An alternative option would be to categorize HEI through the type of instruction instead of funding source: Universities except Al-Quds Open; Al-Quds Open; University Colleges; Community Colleges.
- **Expenditure assessment:** The expenditure assessment could be improved through: detailing non-salary expenses in student-based expenses, on one hand, and buildings-based expenses, in another hand; a more accurate assessment of capital expenses through taking into account actual investment programs and smoothing the needs on a five-year schedule.
- **Research Accounts:** Research activities are critical for HE quality and relevance. Researchers have generally access to a variety of domestic and international funding sources and use the university facilities and other resources. Adding specific accounts for research activities would allow assessing and monitoring these activities.
- **Students Account:** The model considers only fees financing, subsistence expenses are not taken into account but could be in an improved version of the model. Average subsistence expenses could be estimated either using households' consumption data produced by the PCSB, or through a specific survey.
- **The demand for HE elasticity:** Introducing the demand elasticity would allow assessing the impact of increasing fees on enrolment. The elasticity could be estimated through a specific survey.

- **Data input:** Data regarding students' admissions and enrolments as well as HEI staff come from MOEHE database which does include neither financial data nor information on space availability in HEI. Then later was collected through a specific survey on HEI staff, buildings. Moreover, student and staff data format as designed in MOEHE database do not fit into the GBTM data requirements. The MOEHE database should be re-designed in order to fulfill the GBTM requirements and allow automatic data transfer. A basic framework for the new database design is suggested in Annex C.

3.1.2. The Institutional Model

- **Admissions and Enrolments projections:** Given the available data, the IBTM uses, like the GBTM, a stock model for projecting admissions and enrolments. However, the information available at the institution level would allow using a more sophisticated flow model taking into account in-between programs as described below:

STUDENTS FLOWS MODEL



- **Staff and areas categories:** At the institution level, aggregated staff and space categories could be detailed taking into account the specific activities of HEI (laboratories, libraries, etc.).

- **Teaching staff needs:** In order to be easy to use, the model assesses teaching staff needs using adequate students per staff ratios. However, it is more accurate, whenever the data is available, to use a faculty/program matrix. This method suits better the institutions needs and will allow them to ensure an efficient use of their academic staff. It has to be mentioned that this method is presently used in Birzeit University. The faculty/program matrix may be represented as follow:

Program/Faculty	Arts	Sciences	Engineering	Medicine
Arts						
Physics		a_p^s				
IT						
.....						
.....						

a_p^s = Number of instructors needed from the faculty of sciences to ensure the teaching for a standard group of students attending the BS in Physics.

3.2. Final comments and recommendations

The GBTM and the IBTM will allow the ministry and higher education institutions to plan and manage resources in a more efficient way. To this end, they need to be continuously updated to keep them relevant to the changing situation of the sub-sector. In order to have a real impact on the sub-sector management, they need to be part of a comprehensive planning process involving management and planning staff, decision makers and stakeholders. The following comments and recommendations are presented to help achieving these objectives:

- i) It is critical to set a strategic plan for the Palestinian higher education system which will set objectives agreed by all the sub-sector stakeholders. The experience of the last ten years shows that, without such a plan, universities would try to face the increasing demand by simply duplicating existing programs. The strategic plan should be accompanied by a ten-year investment programme assessing the sub-sector needs and the funding mechanisms. An annual planning and budgeting process should be set by the ministry and would include the following steps:
 - Projection of the higher education demand for coming academic year (admissions and enrolments);
 - Defining the priority programs/fields of study within the Council for Higher Education;
 - Negotiating admission seats to be offered by each institution;
 - Negotiating budget support to be provided (directly or through waivers system) to each institution;
 - Assessment of students' financial aids (loans & scholarships) needs.

- ii) The lack of a financial report system is not helping the ministry in getting the real picture of institutions' financial situation. One finding of the survey conducted for updating the model was that students' aid programs vary widely from one university to another. It is suggested to design a standardized summarized reporting form to be completed by institutions on an annual basis. The financial report would be used in the previously suggested planning process to negotiate the budget support provided by the ministry.
- iii) Despite its very modest resources, the planning unit of the MOEHE has achieved a very valuable work. It is critical for the efficient use of the GBTM that the planning unit of the ministry will be reinforced through both training the present team members and recruiting additional staff. Study tours to countries having well established and effective higher education planning system should be organized to ministry high executive staff in order to inspire them in developing their own unit.
- iv) Among all the institutions visited only Birzeit University and UNRWA College of Education and Sciences shown a criteria-based planning system. Even though all institutions and especially large universities such as An-Najah are aware of the importance of setting such a system, the financial situation of the last years has been and is still the main concern of universities managers. For an effective use of the IBTM, it is necessary to reinforce planning units at the institution level.
- v) It has been noticed that the use of management software is very well developed in some universities and almost not existing in some others. It is critical, for an effective use of the model, to have management databases able to provide the model with all the required data. Otherwise, the amount of work needed to update the model will discourage the future users.

ANNEXES

ANNEX A : GBTM SCENARIOS TABLES

ANNEX B : AN-NAJAH FINANCING STRATEGY SCENARIO
TABLES

ANNEX C: GBTM DATABASE DESIGN

ANNEX A
GBTM SCENARIOS TABLES

TREND SCENARIO

ASSUMPTIONS

ADMISSION RATES

2002/03 ADMISSION RATES

	UNIVERSITIES	OPEN	COLLEGES	TOTAL
Education	0.119	0.169	0.011	0.300
Humanities	0.349		0.022	0.371
Social Sciences		0.061		0.061
Commerce & Economics	0.018	0.088	0.043	0.148
Law	0.011			0.011
Information Technology	0.015	0.025	0.017	0.057
Engineering	0.005		0.009	0.014
Medicine	0.001			0.001
Medical Professions	0.007		0.021	0.028
Science	0.008	0.002		0.010
Total	0.533	0.344	0.122	1.000

INTERNAL EFFICIENCY RATES

	PNP UNIVERSITIES	OPEN	COLLEGES
GRADUATION RATE	0.16	0.07	0.25
DROPOUT RATE	0.03	0.07	0.03

STUDENTS/STAFF RATIOS (NUMBER OF STUDENTS PER STAFF)

	PNP UNIVERSITIES	OPEN	COLLEGES
TEACHING STAFF	25.6	143.7	14.8
ADMINISTRATIVE STAFF	48.3	69.3	44.8
SERVICE STAFF	55.3	220.8	36.0

SPACE/STUDENTS RATIOS (SQ METERS PER STUDENT)

	PNP UNIVERSITIES	OPEN	COLLEGES
TEACHING SPACE	4.1	0.7	2.2
ADMINISTRATIVE SPACE	1.4	0.3	1.5

STAFF DISTRIBUTION

TEACHING STAFF	UNIVERSITIES	COLLEGES
Full Professor	3.2%	0.5%
Associate Professor	10.2%	1.8%
Assistant Professor	36.1%	8.3%
Lecturer	6.6%	36.7%
Teacher	43.9%	52.7%
AVERAGE SALARY	16356	14096

NON TEACHING STAFF	ADMINISTRATIVE STAFF		SERVICE STAFF	
	UNIVERSITIES	COLLEGES	UNIVERSITIES	COLLEGES
High-level	13.2%		28.7%	28.7%
Mid-level	14.9%	57.7%		
Low-level	71.9%	42.3%	71.3%	71.3%
AVERAGE SALARY	10644	10830	5913	5839

COSTS

	PNP UNIVERSITIES	OPEN	COLLEGES
NON SALARY RECURRENT COST (PER STUDENT)	305	305	140
BUILDING COST (PER SQM)	400/450	400/450	400/450
EQUIPMENT COST (PER ADDITIONNAL STUDENT)	100-700	50-200	100-700

FEES

	FEES AS A % OF ACTUAL COSTS					
	PNP	PNA			PRIVATE	COLLEGE
		AL QUDS	OTHER	TOTAL PNA		
Education	0.5	0.9	0.3	0.6		0.2
Humanities	0.6				0.7	0.2
Social Sciences Commerce & Economics	0.5	0.9		1	0.6	0.2
Law	0.6				0.7	
Information Technology	0.6	1.0		1	0.7	0.2
Engineering	0.5				0.5	0.2
Medicine	0.6				0.7	
Medical Professions	0.6				0.7	0.2
Science	0.6	1.0		1	0.6	

LOANS

AVERAGE LOAN AS % OF FEES : 42-50%; % OF STUDENTS GETTING LOANS: 40%

REPAYMENT PERIOD 5 YEARS; DEFAULT RATE: 70%

OUTPUTS

ENROLMENT

HE GLOBAL ENROLLMENT			
	2004	2009	2014
UNIVERSITIES	63023	106773	123892
%	54,0%	55,5%	50,2%
OPEN	40501	65856	100349
%	34,7%	34,2%	40,6%
COLLEGES	13221	19779	22680
%	11,3%	10,3%	9,2%
TOTAL HE	116745	192408	246921

	2004		2009		2014	
	Number	%	Number	%	Number	%
Education	38930	33,3%	64216	33,4%	87946	35,6%
Humanities	15027	12,9%	40770	21,2%	55732	22,6%
Social Sciences	8150	7,0%	12209	6,3%	18190	7,4%
Commerce & Economics	24887	21,3%	35525	18,5%	43973	17,8%
Law	2313	2,0%	2846	1,5%	3195	1,3%
Information Technology	6226	5,3%	11544	6,0%	15627	6,3%
Engineering	8487	7,3%	9804	5,1%	8071	3,3%
Medicine	2064	1,8%	1789	0,9%	1468	0,6%
Medical Professions	3741	3,2%	4290	2,2%	4475	1,8%
Science	6920	5,9%	9416	4,9%	8245	3,3%
Total	116745	100,0%	192408	100,0%	246921	100,0%

NORMATIVE COSTS

	NORMATIVE COSTS IN HIGHER EDUCATION				
	PNP	PNA		PRIVATE	COLLEGES
		AL QUDS	OTHER		
2004	1,541	552	1,020	1,981	2,184
2009	1,649	454	1,107	2,202	1,757
2014	1,449	445	1,000	1,786	1,674

STUDENTS FUNDING SOURCES

STUDENTS FUNDING SOURCES			
	2004	2009	2014
Average Fees	666	652	557
Fees as % of normative costs	53,3%	54,9%	56,1%
INSTITUTIONS SCHOLARSHIPS	7,3%	5,2%	5,5%
LOANS	14,1%	19,4%	19,5%
PERSONAL CONTRIBUTION	78,6%	75,4%	75,0%
TOTAL	100,0%	100,0%	100,0%

INSTITUTIONS FINANCIAL ACCOUNTS

HE ISNTITUTIONS FINANCIAL ACCOUNTS			
	2004	2009	2014
EXPENDITURE	145,6	229,7	245,4
RECURRENT EXPENDITURE	122,3	193,8	230,4
CAPITAL EXPENDITURE	23,2	35,9	15,0
INCOME	111,7	174,8	201,1
FEES	77,8	126,6	137,6
PNA BUDGET SUPPORT	25,6	37,9	50,3
PNA WAIVERS & SCHOLARSHIPS			
QIF			
CF			
OTHER INCOME	8,4	10,4	13,2
BALANCE	-33,8	-54,9	-44,3

MOHE FINANCIAL ACCOUNTS

MOHE FINANCIAL ACCOUNTS			
	2004	2009	2014
RESOURCES	20,0	25,5	32,6
EXPENDITURE	30,8	37,9	50,3
BUDGET SUPPORT	30,8	37,9	50,3
WAIVERS & SCHOLARSHIPS			
QIF			
CF			
RF			
BALANCE	-10,8	-12,4	-17,7

SRLF

	STUDENT LOAN SCHEME MAIN CHARACTERISTICS		
	2004	2009	2014
NEW LOANS GRANTED	11 000 000	24 533 528	26 779 865
AVERAGE LOAN/STUDENT	189,7	318,8	271,1
AVER. REPAYMENT/YEAR		113,7	147,3
TOTAL REPAYMENTS/YEAR		2 217 353	3 913 047
ADDITIONAL FUNDS NEEDED	11 000 000	22 316 175	22 866 819
% REPAYMENTS/NEW LOANS		9,0%	14,6%

ADMISSION POLICY SCENARIO

ASSUMPTIONS

ADMISSION RATES

2013/14 ADMISSION RATES

	UNIVERSITIES	OPEN	COLLEGES	TOTAL
Education	0,110	0,050	0,010	0,170
Humanities	0,301		0,030	0,331
Social Sciences		0,010		0,010
Commerce & Economics	0,105	0,050	0,050	0,205
Law	0,012			0,012
Information Technology	0,030	0,020	0,040	0,090
Engineering	0,020		0,050	0,070
Medicine	0,012			0,012
Medical Professions	0,025		0,020	0,045
Science	0,035	0,020		0,055
Total	0,650	0,150	0,200	1,000

INTERNAL EFFICIENCY RATES (2013/2014)

	PNP UNIVERSITIES	OPEN	COLLEGES
GRADUATION RATE	0.23	0.09	0.31
DROPOUT RATE	0.03	0.05	0.03

STUDENTS/STAFF RATIOS (2013/2014)

	PNP UNIVERSITIES	OPEN	COLLEGES
TEACHING STAFF	23.3	150	15,9
ADMINISTRATIVE STAFF	45.0	70	50.1
SERVICE STAFF	56.4	200	40.9

SPACE/STUDENTS RATIOS (SQ METERS PER STUDENT, 2013/2014)

	PNP UNIVERSITIES	OPEN	COLLEGES
TEACHING SPACE	3.6	1.0	4.7
ADMINISTRATIVE SPACE	1.0	0.1	1.0

STAFF DISTRIBUTION (2013/2014)

TEACHING STAFF	UNIVERSITIES	COLLEGES
Full Professor	10,0%	5,0%
Associate Professor	30,0%	10,0%
Assistant Professor	30,0%	25,0%
Lecturer	22,0%	30,0%
Teacher	8,0%	30,0%
AVERAGE SALARY (US \$)	19504	16553

NON TEACHING STAFF	ADMINISTRATIVE STAFF		SERVICE STAFF	
	UNIVERSITIES	COLLEGES	UNIVERSITIES	COLLEGES
High-level	13.2%		28.7%	28.7%
Mid-level	14.9%	57.7%		
Low-level	71.9%	42.3%	71.3%	71.3%
AVERAGE SALARY	10973	11567	6236	6236

COSTS (2013/2014)

	PNP UNIVERSITIES	OPEN	COLLEGES
NON SALARY RECURRENT COST (PER STUDENT)	410	188	410
BUILDING COST (PER SQM)	400/450	400/450	400/450
EQUIPMENT COST (PER ADDITIONNAL STUDENT)	100-700	50-200	100-700

OUTPUTS

ENROLMENT

HE GLOBAL ENROLLMENT			
	2004	2009	2014
UNIVERSITIES	63023	106441	135504
%	54,0%	58,1%	59,4%
OPEN	40501	53853	61837
%	34,7%	29,4%	27,1%
COLLEGES	13221	23051	30830
%	11,3%	12,6%	13,5%
TOTAL HE	116745	183345	228171

	2004		2009		2014	
	Number	%	Number	%	Number	%
Education	38930	33,3%	54301	29,6%	59575	26,1%
Humanities	15027	12,9%	41543	22,7%	45192	19,8%
Social Sciences	8150	7,0%	9067	4,9%	8018	3,5%
Commerce & Economics	24887	21,3%	35714	19,5%	51748	22,7%
Law	2313	2,0%	2929	1,6%	3142	1,4%
Information Technology	6226	5,3%	12980	7,1%	20717	9,1%
Engineering	8487	7,3%	10064	5,5%	14578	6,4%
Medicine	2064	1,8%	2578	1,4%	3866	1,7%
Medical Professions	3741	3,2%	4610	2,5%	5534	2,4%
Science	6920	5,9%	9559	5,2%	15801	6,9%
Total	116745	100,0%	183345	100,0%	228171	100,0%

NORMATIVE COSTS

	NORMATIVE COSTS IN HIGHER EDUCATION				
	PNP	PNA		PRIVATE	COLLEGES
		AL QUDS	OTHER		
2004	1 542	553	1 022	1 982	2 184
2009	1 547	553	1 250	1 745	1 973
2014	1 705	525	1 334	1 970	2 080

STUDENTS FUNDING SOURCES

STUDENTS FUNDING SOURCES			
	2004	2009	2014
Average Fees	666	673	721
Fees as % of normative costs	53,4%	52,2%	51,1%
INSTITUTIONS SCHOLARSHIPS	7,3%	5,3%	4,6%
LOANS	14,1%	19,2%	18,9%
PERSONAL CONTRIBUTION	78,6%	75,5%	76,5%
TOTAL	100,0%	100,0%	100,0%

INSTITUTIONS FINANCIAL ACCOUNTS

HE INSTITUTIONS FINANCIAL ACCOUNTS			
	2004	2009	2014
EXPENDITURE	146,3	236,2	321,9
RECURRENT EXPENDITURE	122,5	214,2	297,0
CAPITAL EXPENDITURE	23,8	22,0	24,9
INCOME	112,3	176,8	237,2
FEES	77,8	123,3	164,5
PNA BUDGET SUPPORT	26,0	43,1	59,4
PNA WAIVERS & SCHOLARSHIPS			
QIF			
CF			
OTHER INCOME	8,5	10,4	13,2
BALANCE	-34,0	-59,4	-84,7

MOHE FINANCIAL ACCOUNTS

MOHE FINANCIAL ACCOUNTS			
	2004	2009	2014
RESOURCES	20,0	25,5	32,6
EXPENDITURE	30,8	43,1	59,4
BUDGET SUPPORT	30,8	43,1	59,4
WAIVERS & SCHOLARSHIPS			
QIF			
CF			
RF			
BALANCE	-10,8	-17,5	-26,8

SRLF

	STUDENT LOAN SCHEME MAIN CHARACTERISTICS		
	2004	2009	2014
NEW LOANS GRANTED	11 000 000	23 630 423	31 108 721
AVERAGE LOAN/STUDENT	189,7	322,2	340,8
AVER. REPAYMENT/YEAR		117,5	169,4
TOTAL REPAYMENTS/YEAR		2 447 133	4 694 905
ADDITIONAL FUNDS NEEDED	11 000 000	21 183 289	26 413 816
% REPAYMENTS/NEW LOANS		10,4%	15,1%

FINANCING STRATEGY SCENARIO

ASSUMPTIONS

FEES

	2014	FEES AS A % OF NORMATIVE COSTS					
		PNP	PNA			PRIVATE	COLLEGE
			AL QUDS	OTHER	TOTAL PNA		
Education	1,0	1,0	1,0		1,0	1,0	
Humanities	1,0	1,0	1,0		1,0	1,0	
Social Sciences	1,0	1,0	1,0		1,0	1,0	
Commerce & Economics	1,0	1,0	1,0		1,0	1,0	
Law	1,0	1,0	1,0		1,0	1,0	
Information Technology	0,7	1,0	0,7		0,7	0,7	
Engineering	0,7	1,0	0,7		0,7	0,7	
Medicine	0,7	1,0	0,7		0,7	0,7	
Medical Professions	0,7	1,0	0,7		0,7	0,7	
Science	0,7	1,0	0,7		0,7	0,7	

WAIVERS

	PROPORTION OF PRIORITY FIELD STUDENTS IN STUDY FIELDS					
	PNP	PNA			PRIVATE	COLLEGE
		AL QUDS	OTHER	TOTAL PNA		
Education						
Humanities						
Social Sciences						
Commerce & Economics						
Law						
Information Technology	0,4	0,4	0,4	0,4	0,4	
Engineering	0,4	0,4	0,4	0,4	0,4	
Medicine	0,4	0,4	0,4	0,4	0,4	
Medical Professions	0,4	0,4	0,4	0,4	0,4	
Science	0,4	0,4	0,4	0,4	0,4	

PNA SCHOLARSHIPS

	PROPORTION OF PNA SCHOLARSHIPS AWARDED BY FIELD						TOTAL
	PNP	PNA			PRIVATE	COLLEGE	
		AL QUDS	OTHER	TOTAL PNA			
Education							
Humanities							
Social Sciences							
Commerce & Economics							
Law							
Information Technology	0,15	0,05		0,05	0,01	0,10	0,31
Engineering	0,15				0,01	0,10	0,26
Medicine	0,10				0,01		0,11
Medical Professions	0,10				0,01	0,05	0,16
Science	0,10	0,05		0,05	0,01		0,16
TOTAL	0,60	0,10		0,10	0,05	0,25	1,00

	2005	2009	2014
Total PNA scholarships awarded annually	500 000	579 637	671 958

LOANS

AVERAGE LOAN AS % OF FEES : 42-50%; % OF STUDENTS GETTING LOANS: 40%

REPAYMENT PERIOD 5 YEARS; DEFAULT RATE: 50%

INTEREST RATE: 1,5%

QUALITY IMPROVEMENT FUND

Unit costs in US \$	QUALITY IMPROVEMENT FUND		
	2004	2009	2014
Teacher Training cost		5000	5000
Book Allowance Per Student		15	15

RESEARCH FUND

FUND	RESEARCH FUND		
	2004	2009	2014
		1000000	1159274

MOEHE BUDGET

	MOEHE SHARE OF EACH COMPONENT		
	2004	2009	2014
0. BUDGET SUPPORT			
To Colleges	1,0		
To Al Quds University	1,0		
To other PNA Universities	1,0		
Total to PNA Institutions	1,0		
To non PNA Institutions	1,0		
TOTAL Waivers			
1. WAIVERS			
To Colleges	1,0	1,00	1,00
To Al Quds University	1,0	1,00	1,00
To other PNA Universities	1,0	1,00	1,00
Total to PNA Institutions	1,0	1,00	1,00
To non PNA Institutions	1,0	1,00	1,00
TOTAL Waivers			
2. SCHOLARSHIPS			
To Colleges	1,0	1,00	1,00
To Al Quds University	1,0	1,00	1,00
To other PNA Universities	1,0	1,00	1,00
Total to PNA Institutions	1,0	1,00	1,00
To non PNA Institutions	1,0	1,00	1,00
TOTAL SCHOLARSHIPS			
3. QUALITY IMPROVEMENT FUND (Shares to institutions)			
To Colleges	1,0	0,30	0,30
To Al Quds University	1,0	0,05	0,05
To other PNA Universities	1,0	0,05	0,05
Total to PNA Institutions	1,0	0,40	0,40
To non PNA Institutions	1,0	0,60	0,60
TOTAL QIF as % of MOHE Budget		<i>0,10</i>	<i>0,15</i>
4. CAPITAL FUND (Shares to institutions)			
To Colleges	0,1	0,5	0,5
To Al Quds University	0,1	0,1	0,1
To other PNA Universities	0,1	0,1	0,1
Total to PNA Institutions	0,1	0,70	0,70
To non PNA Institutions	0,1	0,3	0,3
TOTAL CF as % of MOHE Budget		<i>0,2</i>	<i>0,1</i>
5. RESEARCH FUND	1,0	1,0	1,0
6. MOEHE CONTRIBUTION			
7. MOEHE RESOURCES	20 000 000	23 185 481	26 878 328

OUTPUTS

STUDENTS FUNDING SOURCES

STUDENTS FUNDING SOURCES			
	2004	2009	2014
Average Fees	666	1183	1269
Fees as % of normative costs	53,4%	91,9%	89,9%
INSTITUTIONS SCHOLARSHIPS	7,3%	3,0%	2,6%
LOANS	14,1%	19,3%	19,1%
PERSONAL CONTRIBUTION	78,6%	77,4%	78,3%
TOTAL	100,0%	100,0%	100,0%

MOHE FINANCIAL ACCOUNTS

MOHE FINANCIAL ACCOUNTS			
	2004	2009	2014
RESOURCES	20,0	23,2	26,9
EXPENDITURE	30,8	15,2	20,3
BUDGET SUPPORT	30,8		
WAIVERS & SCHOLARSHIPS		8,2	13,6
QIF		2,3	4,0
CF		4,6	2,7
RF		1,0	1,2
BALANCE	-10,8	8,0	6,6

INSTITUTIONS FINANCIAL ACCOUNTS

HE ISNTITUTIONS FINANCIAL ACCOUNTS			
	2004	2009	2014
EXPENDITURE	146,3	236,2	321,9
RECURRENT EXPENDITURE	122,5	214,2	297,0
CAPITAL EXPENDITURE	23,8	22,0	24,9
INCOME	139,8	242,5	323,0
FEES	105,2	216,9	289,5
PNA BUDGET SUPPORT	26,0		
PNA WAIVERS & SCHOLARSHIPS		8,2	13,6
QIF		2,3	4,0
CF		4,6	2,7
OTHER INCOME	8,5	10,4	13,2
BALANCE	-6,6	6,3	1,1

SRLF

	STUDENT LOAN SCHEME MAIN CHARACTERISTICS		
	2004	2009	2014
NEW LOANS GRANTED	11 000 000	41 838 635	55 292 861
AVERAGE LOAN/STUDENT	189,7	570,5	605,8
AVER. REPAYMENT/YEAR		157,1	307,9
TOTAL REPAYMENTS/YEAR		5 456 285	14 216 239
ADDITIONAL FUNDS NEEDED	11 000 000	36 382 349	41 076 622
% REPAYMENTS/NEW LOANS		13,0%	25,7%

ANNEX B

AN-NAJAH UNIVERSITY FINANCING STRATEGY SCENARIO TABLES

AN-NAJAH NATIONAL UNIVERSITY FINANCING STRATEGY SCENARIO

ASSUMPTIONS

ADMISSIONS GROWTH RATES

	2001-2004	2004-2009	2009-2014
AL SHAREA	0.20	0.05	0.05
FINE ARTS	0.41	0.10	0.10
ARTS	0.39	0.10	0.10
EDUCATION	0.47	0.10	0.10
LAW	0.68	0.15	0.15
ECONOMICS & ADMINISTRATIVE SCIENCES	0.22	0.15	0.15
INFORMATION TECHNOLOGY	0.28	0.20	0.20
ENGINEERING	0.40	0.15	0.15
SCIENCE	0.30	0.20	0.20
AGRICULTURE	0.40	0.20	0.20
VETERINARY MEDICINE	0.54	0.10	0.10
PHARMACY	0.66	0.15	0.15
MEDICINE	0.60	0.20	0.20

INTERNAL EFFICIENCY RATES

	2014	GRADUATION RATE		DROPOUT RATE	
		BACHELOR	GRADUATE	BACHELOR	GRADUATE
AL SHAREA		0,312	0,528	0,015	0,080
FINE ARTS		0,209		0,027	
ARTS		0,236	0,328	0,024	0,107
EDUCATION		0,285		0,034	
LAW		0,322		0,009	0,064
ECONOMICS & ADMINISTRATIVE SCIENCES		0,341	0,420	0,022	0,036
INFORMATION TECHNOLOGY		0,209		0,011	
ENGINEERING		0,147	0,440	0,013	0,067
SCIENCE		0,256	0,360	0,014	0,080
AGRICULTURE		0,272		0,018	
VETERINARY MEDICINE		0,147		0,019	
PHARMACY		0,254		0,017	
MEDICINE		0,147		0,009	

STUDENTS/STAFF RATIOS (2013/2014)

	STUDENT/TEACHING STAFF RATIO	
	BACHELOR	MASTER
AL SHAREA	21	7
FINE ARTS	26	
ARTS	21	15
EDUCATION	37	4
LAW	42	13
ECONOMICS & ADMINISTRATIVE SCIENCES	32	22
INFORMATION TECHNOLOGY	38	
ENGINEERING	26	10
SCIENCE	8	10
AGRICULTURE	9	
VETERINARY MEDICINE	10	
PHARMACY	32	15
MEDICINE	10	

	STUDENT/ADMINISTRATIVE STAFF RATIO	
	BACHELOR	MASTER
AL SHAREA	37	50
FINE ARTS	50	
ARTS	60	50
EDUCATION	56	4
LAW	42	34
ECONOMICS & ADMINISTRATIVE SCIENCES	63	56
INFORMATION TECHNOLOGY	38	
ENGINEERING	42	60
SCIENCE	24	20
AGRICULTURE	19	
VETERINARY MEDICINE	18	
PHARMACY	45	30
MEDICINE	19	

	STUDENT/SERVICE STAFF RATIO (BASE+10)	
	BACHELOR	MASTER
AL SHAREA	82	
FINE ARTS	64	
ARTS	136	
EDUCATION	112	
LAW	125	
ECONOMICS & ADMINISTRATIVE SCIENCES	135	
INFORMATION TECHNOLOGY	76	
ENGINEERING	51	
SCIENCE	27	
AGRICULTURE	26	
VETERINARY MEDICINE	24	
PHARMACY	56	
MEDICINE	39	

STAFF DISTRIBUTION

TEACHING STAFF	Target Distribution		
	2004	2009	2014
Full Professor	6,4%	8,0%	10,0%
Associate Professor	14,7%	20,0%	30,0%
Assistant Professor	33,1%	30,0%	30,0%
Lecturer	5,2%	12,0%	10,0%
Teacher	40,6%	30,0%	20,0%

ADMINISTRATIVE STAFF	Distribution		
	2004	2009	2014
High administrative officer	16,0%	15,0%	15,0%
Mid-level administrative officer	36,8%	15,0%	15,0%
Low-level administrative officer	47,2%	70,0%	70,0%

SERVICE STAFF	Distribution		
	2004	2009	2014
Service staff high	21,5%	40,0%	40,0%
Service staff low	78,5%	60,0%	60,0%

FEES

FEES AS A % OF ACTUAL COSTS (BASE+10)			
	DIPLOMA	BACHELOR	GRADUATE
AL SHAREA	1,0	1,0	1,0
FINE ARTS	1,0	1,0	1,0
ARTS	1,0	1,0	1,0
EDUCATION	1,0	1,0	1,0
LAW	1,0	1,0	1,0
ECONOMICS & ADMINISTRATIVE SCIENCES	1,0	1,0	1,0
INFORMATION TECHNOLOGY	0,7	0,7	0,7
ENGINEERING	0,7	0,7	0,7
SCIENCE	0,7	0,7	0,7
AGRICULTURE	0,7	0,7	0,7
VETERINARY MEDICINE	0,7	0,7	0,7
PHARMACY	0,7	0,7	0,7
MEDICINE	0,7	0,7	0,7

PNA FINANCIAL SUPPORT

	DIPLOMA	BACHELOR	GRADUATE	TOTAL
PNA INVESTMENT SUPPORT (%)	0,10	0,10	0,10	0,10
QUALITY IMPROVMENT FUND (JD)		100 000	40 000	140 000
RESEARCH FUND (JD)			70 000	70 000

OUTPUTS

ADMISSIONS & ENROLLMENTS

	ADMISSIONS			ENROLLMENTS		
	2004	2009	2014	2004	2009	2014
	AL SHAREA	110	140	179	379	417
FINE ARTS	127	205	329	447	735	1133
ARTS	597	961	1548	1783	3116	4830
EDUCATION	514	828	1333	1685	2455	3677
LAW	143	288	579	400	853	1709
ECONOMICS & ADMINISTRATIVE SCIENCES	614	1235	2484	2246	3177	5777
INFORMATION TECHNOLOGY	195	485	1207	378	1895	4181
ENGINEERING	529	1064	2140	1885	4140	8191
SCIENCE	266	661	1645	780	1886	4430
AGRICULTURE	70	174	433	153	475	1138
VETERINARY MEDICINE	43	69	112	72	313	528
PHARMACY	111	223	449	461	771	1517
MEDICINE	24	60	149	77	268	603
TOTAL	3342	6393	12588	10746	20501	38196

NORMATIVE COSTS (JD)

	PER STUDENT EXPENSES		
	2004	2009	2014
AL SHAREA	1,925	1,305	1,438
FINE ARTS	1,499	962	1,052
ARTS	1,659	1,093	1,141
EDUCATION	1,403	923	1,029
LAW	1,384	1,069	1,214
ECONOMICS & ADMINISTRATIVE SCIENCES	1,472	995	1,145
INFORMATION TECHNOLOGY	1,728	1,351	1,406
ENGINEERING	1,760	1,528	1,610
SCIENCE	3,113	2,628	2,783
AGRICULTURE	3,014	2,641	2,824
VETERINARY MEDICINE	3,145	2,704	2,803
PHARMACY	1,960	1,441	1,684
MEDICINE	3,178	2,836	3,083
TOTAL	1,751	1,405	1,580

STUDENTS FUNDING SOURCES

STUDENTS FUNDING SOURCES			
	2004	2009	2014
Average Fees (JD)	759	1145	1262
Fees as % of normativre costs	43.4%	81.5%	79.9%
INSTITUTIONS SCHOLARSHIPS & LOANS	17.9%	14.9%	14.7%
OTHER SCHOLARSHIPS			
SRLF	14.9%	12.0%	12.0%
PERSONAL CONTRIBUTION	67.2%	73.1%	73.3%
TOTAL	100.0%	100.0%	100.0%

AN-NAJAH NATIONAL UNIVERSITY FINANCIAL ACCOUNTS (JD)

	BUDGET		
	2004	2009	2014
TEACHING SALARIES	6,157,566	11,773,159	25,254,834
NON TEACHING SALARIES	2,764,934	4,929,576	9,660,946
NON SALARY RECURRENT EXPENSES	2,431,000	5,890,677	13,234,283
STUDENTS AID	478,000	3,493,396	7,090,084
BUILDINGS	5,784,337	5,411,337	11,707,576
EQUIPMENTS	1,677,663	806,944	508,667
TOTAL EXPENDITURE	19,293,500	32,305,090	67,456,389
FEES	8,185,590	23,467,194	48,217,278
SERVICES	312,506	781,563	494,210
PNA BUDGET SUPPORT			
OTHER CONTRIBUTIONS			
STUDENTS' WAIVERS		5,344,500	12,149,027
PNA INVESTMENT SUPPORT		621,828	1,221,624
QUALITY IMPROVMENT FUND		140,000	280,000
RESEARCH FUND		70,000	85,000
OTHER INCOME	443,604	1,109,432	701,533
TOTAL INCOME	8,941,700	31,534,517	63,148,672
GAP	10,351,800	770,573	4,307,717

ANNEX C

GBTM DATABASE DESIGN

DATABASE FRAMEWORK

PALESTINIAN GBTM

TABLE: INSTITUTION (INST)

Field name	Data type	Format	Default value	Description	Relationships
INST_CODE	Text	3			
INST_NAME_ARAB	Text	255			
INST_NAME_ENGL	Text	255			
TYPE_INST_CODE	Text	1			INSITUTION TYPE
SUPE_INST	Text	1			INSTITUTION SUPERVISION
INST_TEL	Text	8			
INST_FAX	Text	8			
INST_ADRE_ARAB	Text	255			
INST_ADRE_ENGL	Text	255			
DIST_CODE	Text	2			DISTRICT
YEAR_CALE	Text	4		Year of creation	YEAR

TABLE: INSTITUTION TYPE (TYPE_INST)

Field name	Data type	Format	Default value	Description	Relationships
TYPE_INST_CODE	Text	1			
TYPE_INST_NAME_ARAB	Text	50			
TYPE_INST_NAME_ENGL	Text	50			

**TABLE: INSTITUTION SUPERVISION (Governmental, Public, Private,...)
(SUPE_INST)**

Field name	Data type	Format	Default value	Description	Relationships
SUPE_INST_CODE	Text	1			
SUPE_INST_NAME_ARAB	Text	50			
SUPE_INST_NAME_ENGL	Text	50			

TABLE: DISTRICT (DIST)

Field name	Data type	Format	Default value	Description	Relationships
DIST_CODE	Text	2			
DIST_NAME_ARAB	Text	50			
DIST_NAME_ENGL	Text	50			

TABLE: GOVERNORATE (GOVE)

Field name	Data type	Format	Default value	Description	Relationships
GOVE_CODE	Text	2			
GOVE_NAME_ARAB	Text	50			
GOVE_NAME_ENGL	Text	50			

TABLE: COMPONENT(Faculty, School, College,..) (COMP)					
Field name	Data type	Format	Default value	Description	Relationships
COMP_CODE	Text	4			
COMP_CODE_INST	Text	4			
COMP_NAME_ARAB	Text	255			
COMP_NAME_ENGL	Text	255			
INST_CODE	Text	3			INSTITUTION
TYPE_COMP_CODE	Text	2			COMPONENT TYPE
SPEC_COMP_CODE	Text				COMPONENT SPECIALIZATION
COMP_TEL	Text	8			
COMP_FAX	Text	8			
CAMP_CODE	Text	50			CAMPUS
YEAR_CALE	Date	4		Year of creation	YEAR

TABLE: SUB COMPONENT(Department, Service,...) (SCOM)					
Field name	Data type	Format	Default value	Description	Relationships
SCOM_CODE	Text	4			
SCOM_CODE_INST	Text	4			
SCOM_NAME_ARAB	Text	255			
SCOM_NAME_ENGL	Text	255			
INST_CODE	Text	3			INSTITUTION
TYPE_COMP_CODE	Text	2			COMPONENT TYPE
SPEC_COMP_CODE	Text				COMPONENT SPECIALIZATION
SCOM_TEL	Text	8			
SCOM_FAX	Text	8			
CAMP_CODE	Text	50			CAMPUS
YEAR_CALE	Date	4		Year of creation	YEAR

TABLE: COMPONENT TYPE (TYPE_COMP)					
Field name	Data type	Format	Default value	Description	Relationships
TYPE_COMP_CODE	Text	2			
TYPE_COMP_NAME_ARAB	Text	50			
TYPE_COMP_NAME_ENGL	Text	50			

TABLE: COMPONENT SPECIALIZATION (SPEC_COMP)					
Field name	Data type	Format	Default value	Description	Relationships
SPEC_COMP_CODE	Text	2			
SPEC_COMP_NAME_ARAB	Text	50			
SPEC_COMP_NAME_ENGL	Text	50			

TABLE: DEGREE (DEGR)

Field name	Data type	Format	Default value	Description	Relationships
DEGR_CODE	Text	5			
DEGR_CODE_INST	Text	10			
DEGR_NAME_ARAB	Text	255			
DEGR_NAME_ENGL	Text	255			
INST_CODE	Text	3			INSITUATION
COMP_CODE	Text	4			COMPONENT
GRAD_CODE	Text	50			GRADE
SPEC_CODE	Text	50			SPECIALITY
DEGR_TYPE	YES/NO		NOPEN	OPEN/NOPEN	
YEAR_ACAD	Text	9			YEAR

TABLE: GRADE (GRAD)

Field name	Data type	Format	Default value	Description	Relationships
GRAD_CODE	Text	2			
GRAD_NAME_ARAB	Text	255			
GRAD_NAME_ENGL	Text	255			
LEVE_GRAD_CODE	Text				GRADE LEVEL

TABLE: (LEVE_GRAD)

Field name	Data type	Format	Default value	Description	Relationships
LEVE_GRAD_CODE	Text	4			
LEVE_GRAD_NAME_ARAB	Text	255			
LEVE_GRAD_NAME_ENGL	Text	255			

TABLE: SPECIALIZATION (SPEC)

Field name	Data type	Format	Default value	Description	Relationships
SPEC_CODE	Text	5			
SPEC_NAME_ARAB	Text	255			
SPEC_NAME_ENGL	Text	255			
FIEL_MOHE_CODE	Text	4			FIELD MOHE
FIEL_UNES_CODE	Text	4			FIELD UNESCO
FIEL_BTM_CODE	Text	4			FIELD BTM

TABLE: FIELD MINISTRY OF HIGHER EDUCATION (FIEL_MOHE)

Field name	Data type	Format	Default value	Description	Relationships
FIEL_MOHE_CODE	Text	1			
FIEL_MOHE_NAME_ARAB	Text	255			
FIEL_MOHE_NAME_ENGL	Text	255			

TABLE: FIELD UNESCO (FIEL_UNES)

Field name	Data type	Format	Default value	Description	Relationships
FIEL_UNES_CODE	Text	4			
FIEL_UNES_NAME_ARAB	Text	255			
FIEL_UNES_NAME_ENGL	Text	255			

TABLE: FIELD BUDGET TRADE-OFF MODEL (FIEL_BTM)

Field name	Data type	Format	Default value	Description	Relationships
FIEL_BTM_CODE	Text	4			
FIEL_BTM_NAME_ARAB	Text	255			
FIEL_BTM_NAME_ENGL	Text	255			

TABLE: TAWJIHI (TAWJ)

Field name	Data type	Format	Default value	Description	Relationships
TAWJ_CODE	Text	2			
TAWJ_NAME_ARAB	Text	255			
TAWJ_NAME_ENGL	Text	255			

TABLE: TERM (TERM)

Field name	Data type	Format	Default value	Description	Relationships
TERM_CODE	Text	1			
TERM_NAME_ARAB	Text	255			
TERM_NAME_ENGL	Text	255			

TABLE: YEAR (YEAR)

Field name	Data type	Format	Default value	Description	Relationships
YEAR_CALE	Text	4			
YEAR-ACAD	Text	9			

TABLE: CAMPUS (CAMP)

Field name	Data type	Format	Default value	Description	Relationships
CAMP_CODE	Text	5			
CAMP_CODE_INST	Text	5			
CAMP_NAME_ARAB	Text	255			
CAMP_NAME_ENGL	Text	255			
INST_CODE	Text	3			INSTITUTION
CAMP_ADRE_ARAB	Text	255			
CAMP_ADRE_ENGL	Text	255			
DIST_CODE	Text	2			DISTRICT
CAMP_CAPA	Num	Integer			
CAMP_TOT_AREA	Num	Real, 2			
CAMP_BUIL_AREA	Date	Real,2			

TABLE: BUILDING (BUIL)

Field name	Data type	Format	Default value	Description	Relationships
BUIL_CODE	Text	5			
BUIL_NAME_ARAB	Text	255			
BUIL_NAME_ENGL	Text	255			
INST_CODE	Text	3			INSTITUTION
COMP_CODE	Text	4			COMPONENT
CAMP_CODE	Text	4			CAMPUS
TYPE_BUIL_CODE	Text	3			BUILDING TYPE
BUIL_CAPA	Num	Integer			
BUIL_AREA	Num	Real, 2			
YEAR_CALE	Text	4			YEAR
BUIL_INVE	Num	Real,2			
BUIL_MAIN	Num	Real,2			

TABLE: BUILDING TYPE (TYPE_BUIL)

Field name	Data type	Format	Default value	Description	Relationships
TYPE_BUIL_CODE	Text	3			
TYPE_BUIL_NAME_ARAB	Text	50			
TYPE_BUIL_NAME_ENGL	Text	50			

TABLE: BUDGET (BUDG)

Field name	Data type	Format	Default value	Description	Relationships
BUDG_CODE	Text	5			
INST_CODE	Text	3			INSTITUTION
YEAR_ACAD	Text	9			YEAR
BUDG_INC	Num	Real,2			
BUDG_REC_EXP	Num	Real,2			
BUDG_CURR	Text	Currency			
BUDG_CAP_EXP	Num	Real,2			

TABLE: BUDGET CHAPTER (CHAP_BUDG)

Field name	Data type	Format	Default value	Description	Relationships
CHAP_BUDG_CODE	Text	50			
BUDG_CODE	Text	5			BUDGET
TYPE_CHAP_CODE	Text	50			CATEGORY TYPE
CHAP_BUDG_AMOU	Num	Real,2			

TABLE: BUDGET CHAPTER TYPE (TYPE_BUDG_CHAP)

Field name	Data type	Format	Default value	Description	Relationships
TYPE_CHAP_BUDG_CODE	Text	1			
CHAP_BUDG_SIGN	YES/NO			Income/Expense	
CHAP_BUDG_NAME_ARAB	Text	50			
CHAP_BUDG_NAME_ENGL	Text	50			

TABLE: BUDGET ACCOUNT (ACCO_BUDG)

Field name	Data type	Format	Default value	Description	Relationships
ACCO_BUDG_CODE	Text	50			
BUDG_CODE	Text	5			BUDGET
TYPE_ACCO_BUDG_CODE	Text	50			ACCOUNT TYPE
ACCO_BUDG_AMOU	Num	Real,2			

TABLE: BUDGET ACCOUNT TYPE (TYPE_ACCO_BUDG)

Field name	Data type	Format	Default value	Description	Relationships
TYPE_ACCO_BUDG_CODE	Text	1			
ACCO_BUDG_SIGN	YES/NO			Income/Expense	
ACCO_BUDG_NAME_ARAB	Text	50			
ACCO_BUDG_NAME_ENGL	Text	50			

TABLE: STUDENT (STUD)

Field name	Data type	Format	Default value	Description	Relationships
STUD_CODE	Text	5			
STUD_NAME_ARAB	Text	255			
STUD_NAME_ENGL	Text	255			
STUD_BIRT_DATE	Date				
GEND_CODE	Text	1			GENDER
NATI_CODE	Text	3			NATIONALITY
DIST_CODE	Text				DISTRICT
TAWJ_CODE	Text	2			TAWJIHI
YEAR_CALE	Text	4		Tawjihi Year	YEAR
STUD_TAWJ_AVER	Num	%, 2			
STUD_TAWJ_ORIG	Text	2			
YEAR_ACAD	Text	4		Admission Year	YEAR
TERM_CODE	Text	1		Admission Term	TERM
STUD_ADMI_TYPE	YES/NO	1		Regular/Parallel	

TABLE: STUDENT RECORD (RECO_STUD)

Field name	Data type	Format	Default value	Description	Relationships
RECO_STUD_CODE	Text	10			
STUD_INST_CODE	Text	10			
STUD_CODE	Text	255			STUDENT
DEGR_CODE	Text	3			DEGREE
COMP_CODE	Text	4			COMPONENT
INST_CODE	Text	3			INSTITUTION
RECO_STUD_AVER	Num	%,2			
YEAR_ACAD	Text	9			YEAR
TERM_CODE	Text	1			TERM
RECO_STUD_LEVE	Text	2		Level	
RECO_STUD_CRED	Num	Integer			
RECO_STUD_STAT	Text				STUDENT STATUS

TABLE: STUDENT STATUS (STAT_STUD)

Field name	Data type	Format	Default value	Description	Relationships
STAT_STUD_CODE	Text	1			
STAT_STUD_NAME_ARAB	Text	50			
STAT_STUD_NAME_ENGL	Text	50			

TABLE: FINANCIAL AID (FINA_AID)

Field name	Data type	Format	Default value	Description	Relationships
FINA_AID_CODE	Text	1			
FINA_AID_NAME_ARAB	Text	50			
FINA_AID_NAME_ENGL	Text	50			

TABLE: STUDENT FINANCIAL AID (FINA_AID_STUD)

Field name	Data type	Format	Default value	Description	Relationships
FINA_AID_STUD_CODE	Text	10			
RECO_STUD_CODE	Text	10			STUDENT RECORD
FINA_AID_CODE	Text	50			FINANCIAL AID
FINA_AID_STUD_AMOU	Num	Real, 2			

TABLE: GENDER (GEND)

Field name	Data type	Format	Default value	Description	Relationships
GEND_CODE	Text	1			
GEND_NAME_ARAB	Text	50			
GEND_NAME_ENGL	Text	50			

TABLE: STAFF (STAF)

Field name	Data type	Format	Default value	Description	Relationships
STAF_CODE	Text	5			
STAF_NAME_ARAB	Text	255			
STAF_NAME_ENGL	Text	255			
STAF_BIRT_DATE	Date				
GEND_CODE	Text	1			GENDER
NATI_CODE	Text	3			NATIONALITY
DIST_CODE	Text				DISTRICT
DIST_CODE	Text	3			GRADE
YEAR_CALE	Text	4		Graduation Year	YEAR
STAF_UNIV_GRAD	Text	255		University of Graduation	
STAF_COUN_GRAD	Text	50		Country of Graduation	
SPEC_CODE	Text	5			SPECIALIZATION
STAF_DOMA	Text	255		Specific domain	

TABLE: STAFF RECORD (RECO_STAF)

Field name	Data type	Format	Default value	Description	Relationships
RECO_STAF_CODE	Text	5			
STAF_CODE	Text	255			STAFF
STAF_INST_CODE	Text	10			
INST_CODE	Text	3			INSTITUTION
YEAR_ACAD	Text	9			YEAR
TERM_CODE	Text	1			TERM
COMP_CODE	Text	4			COMPONENT
SCOM_CODE	Text	4			SUB COMPONENT
CATE_STAF_CODE	Text	2		MOHE classification	STAFF CATEGORY
JOB_CLAS_CODE	Text	3		Institution classification	JOB CLASSIFICATION
ACAD_CLAS_CODE	Text	1		Academic classification (Professor,...)	ACADEMIC CLASSIFICATION
STAF_DEGR	Text	2			
STAT_STAF_CODE	Text	2			STAFF STATUS
TIME_STAF_CODE	Text	1			STAFF TIME
CONT_STAF_CODE	Text	2			STAFF CONTRACT

TABLE: STAFF LOAD (LOAD_STAF)

Field name	Data type	Format	Default value	Description	Relationships
LOAD_STAF_CODE	Text	5			
LOAD_STAF_NAME_ARAB	Text	50			
LOAD_STAF_NAME_ENGL	Text	50			

TABLE: STAFF RECORD LOAD (LOAD_RECO_STAF)

Field name	Data type	Format	Default value	Description	Relationships
LOAD_RECO_STAF_CODE	Text	5			
RECO_STAF_CODE	Text	50			
LOAD_STAF_CODE	Text	50			
LOAD_HOUR	Num	2(1)			

TABLE: STAFF CATEGORY (CATE_STAF)

Field name	Data type	Format	Default value	Description	Relationships
CATE_STAF_CODE	Text	5			
CATE_STAF_NAME_ARAB	Text	50			
CATE_STAF_NAME_ENGL	Text	50			

TABLE: STAFF JOB CLASSIFICATION (JOB_CLAS)

Field name	Data type	Format	Default value	Description	Relationships
JOB_CLAS_CODE	Text	5			
JOB_CLAS_NAME_ARAB	Text	50			
JOB_CLAS_NAME_ENGL	Text	50			

TABLE: ACADEMIC CLASSIFICATION (ACAD_CLAS)

Field name	Data type	Format	Default value	Description	Relationships
ACAD_CLAS_CODE	Text	1			
ACAD_CLAS_NAME_ARAB	Text	50			
ACAD_CLAS_NAME_ENGL	Text	50			

TABLE: STAFF STATUS (STAT_STAF)

Field name	Data type	Format	Default value	Description	Relationships
STAT_STAF_CODE	Text	2			
STAT_STAF_NAME_ARAB	Text	50			
STAT_STAF_NAME_ENGL	Text	50			

TABLE: STAFF CONTRACT (CONT_STAF)

Field name	Data type	Format	Default value	Description	Relationships
CONT_STAF_CODE	Text	1			
CONT_STAF_NAME_ARAB	Text	50			
CONT_STAF_NAME_ENGL	Text	50			