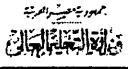


	<b>Higher Education Planning in Egypt</b> Current Status & Future Aspirations	
<b>Towards a Master Plan for Higher Education Institutions in Egypt 2004 - 2021</b>		
27 Dec. 06	Strategic Planning in H.E., AEAS 2006	1

	<b>Higher Education Planning in Egypt</b> Current Status & Future Aspirations	
<b>Master Plan : Definition</b>  Fundamental component and base for the Higher Education strategic planning		
27 Dec. 06	Strategic Planning in H.E., AEAS 2006	2



## Higher Education Planning in Egypt

Current Status & Future Aspirations



### Master Plan: Main Objectives & Goals

- Satisfy the Egyptian Community's societal needs and future aspirations.
- Formulate solid & sound H.E. policies and action plans
- Properly respond to international and regional challenges
- Create institutional Tools/ mechanisms for planning, monitoring and evaluating the H.E. system performance

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## Higher Education Planning in Egypt

Current Status & Future Aspirations



### Master Plan: Specific Objectives

- Create methodologies for sustainable development in H.E.
- Identify demand on higher education (qualitative, quantitative, chronological and geographical)
- Estimate the human resources and investments required

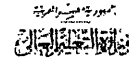
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## Higher Education Planning in Egypt Current Status & Future Aspirations



### Strategic Key Factors for establishing Master Plan

#### National Demand

Basic National Policies  
Culture, Society and Politics

Demand  
National Economy

Demand  
National Population Development

- Demographic factors
- Social demand
- Equity in access
- Market & Industry needs
- Civil society's contribution
- Types of institutions/ fields of specialization
- Infrastructure & Human Resources
- Population growth
- Geographical distribution

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## Higher Education Planning in Egypt Current Status & Future Aspirations



#### Regional Demand

Basic Regional Policies  
Culture, Society and Politics

Demand  
Regional Economy

Demand  
Regional Population Development

Cultural Science,  
Language, Teaching,  
Medicine, Administration

Engineering, Chemists,  
Physicians, Ecumenicists

Rate and Numbers  
of future Students

Academic

Practical

Demand for  
Higher Educational Institutions

Universities  
& Research

Higher Institutes

Technical Colleges

Fields of Study

I.e.: Electronics, Economy Physics, Mathematics,  
Chemistry Languages, Teaching, Cultural Science, Arts1

Coordination:  
Regional  
& National  
Demand

Size of Institution  
Manageable  
(academically  
& economically)

Distribution  
by: Demand:  
Quantitative  
& qualitative

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## Higher Education Planning in Egypt Current Status & Future Aspirations



### Master Plan: Key Factors

- Demographic and population statistics.
- Geographical distribution for higher education institutions.
- Classification of H.E. institutions (academic, legal, ..) .
- Priorities concerning academic disciplines and educational programs on the national and governorate's level.
- Infra structure as well as human resources requirements needed to fulfill the H.E. strategic plan.
- Investments, funding sources and the role of H.E. stakeholder.

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## Higher Education Planning in Egypt Current Status & Future Aspirations



### Levels of the Master Plan

- |               |   |
|---------------|---|
| First Level:  | Forecasting the demand on higher education  |
| Second Level: | Distribution of H.E. opportunities in the different categories of H.E. institutions       |
| Third Level:  | Estimation of academic human resources needed   |
| Fourth Level: | Calculate Investment required for realizing the endorsed scenario of the H.E. master plan |
| Fifth Level:  | Detailed Maser Plan for each governorate based on its local conditions and constrains     |
| sixth Level:  | Implementation policies, action plans, time frame, monitoring and updating processes.     |

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## Higher Education Planning in Egypt

Current Status & Future Aspirations



### The Master Plan: First level

- Forecasting the demand on higher education based on human development indicators and the targeted enrollment rates compared to age group (18- 23) in the year 2021 on national and governorates level.
- Following three options for enrollment rates are developed:
  - ✓ 35% on national level and should not less than 23% in any governorate
  - ✓ 40% on national level and should not less than 30% in any governorate
  - ✓ 50% on national level and should not less than 40% in any governorate

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## Higher Education Planning in Egypt

Current Status & Future Aspirations

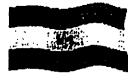


**Master Plan's baseline is  
the year 2003/2004**

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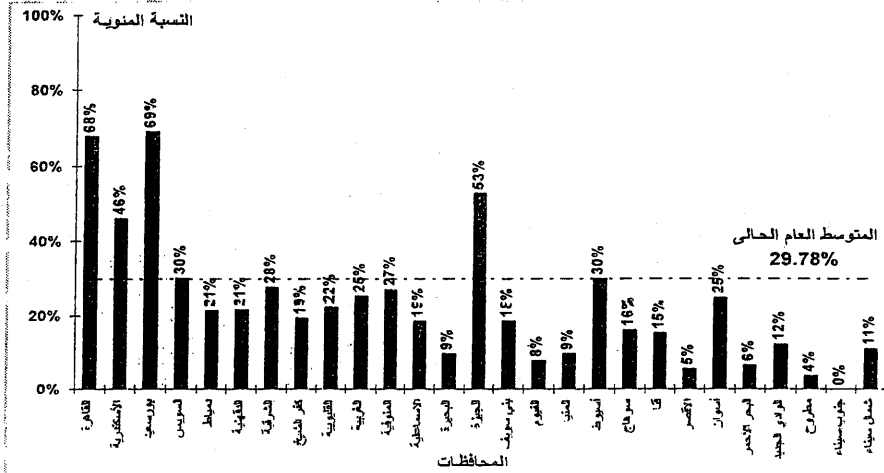
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## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي

Enrollment rates compared to age group (18- 23) in the year 2004



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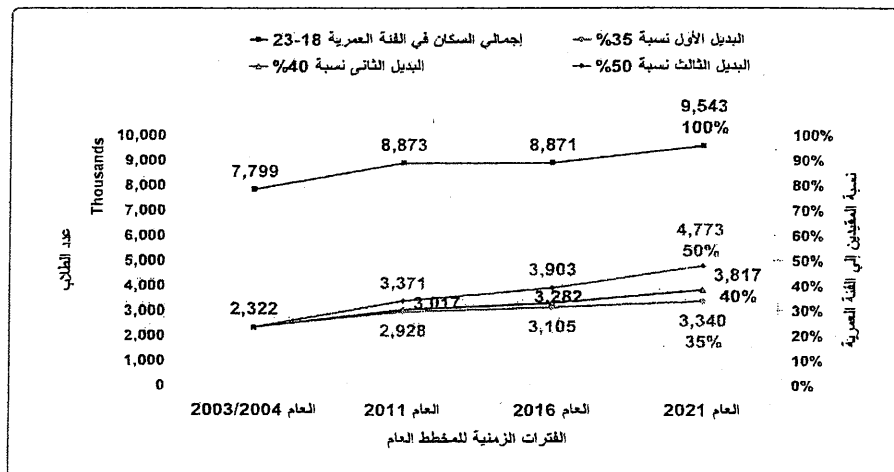
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## Higher Education Planning in Egypt Current Status & Future Aspirations

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Comparison between the different enrollment scenarios



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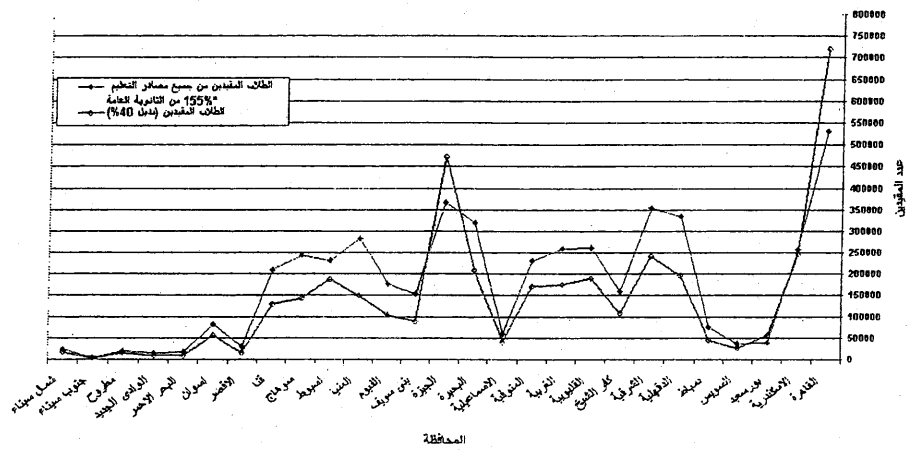
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## Higher Education Planning in Egypt Current Status & Future Aspirations



الوضع المتوقع طبقاً لبيانات وزارة التربية والتعليم (2) النظم المحدث لعام 2021



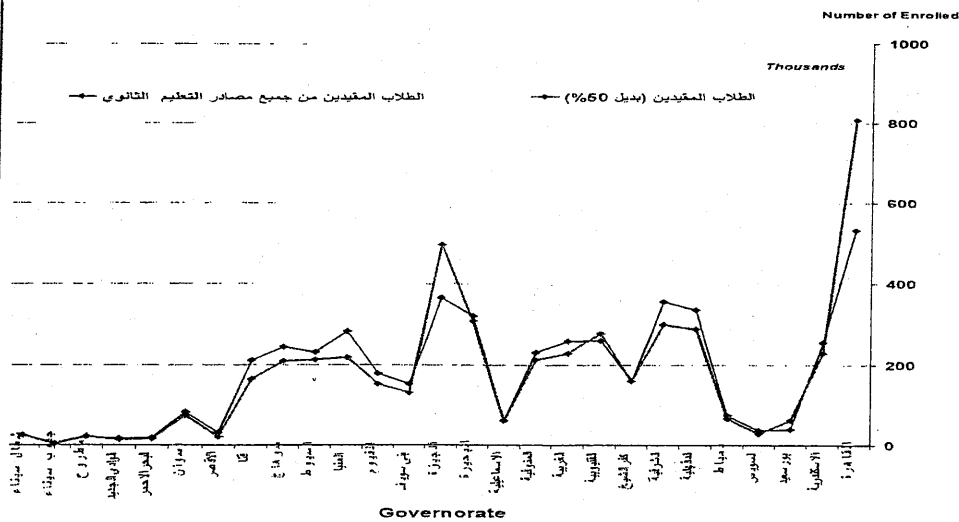
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## Higher Education Planning in Egypt Current Status & Future Aspirations



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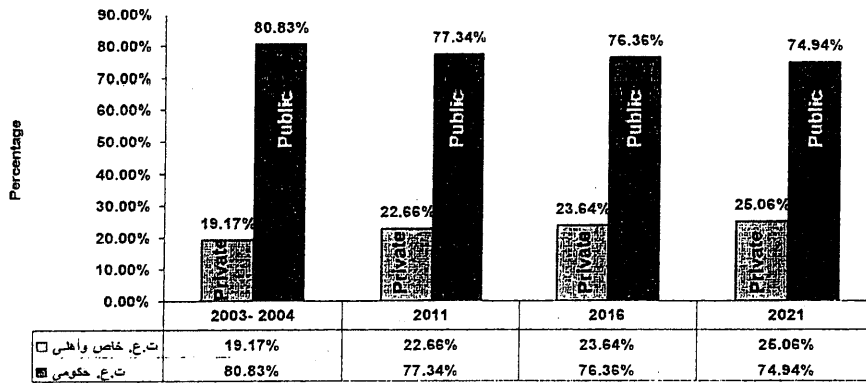
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## Higher Education Planning in Egypt Current Status & Future Aspirations



Global Trends - 50% Enrollment Rate in 2021



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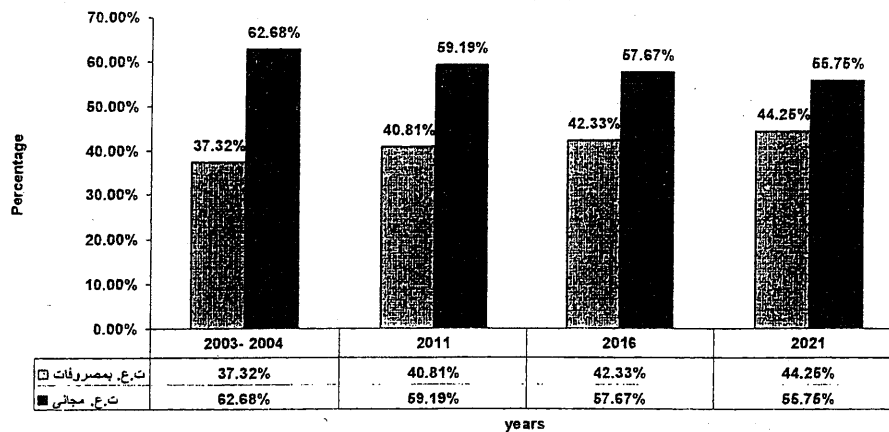
## Higher Education Planning in Egypt Current Status & Future Aspirations



ت.ع. مجاني بمصروفات (Free with tuition) / ت.ع. مجاني (Free)

Option 3

The relative development of the "for tuition" and free Higher Education Institutions



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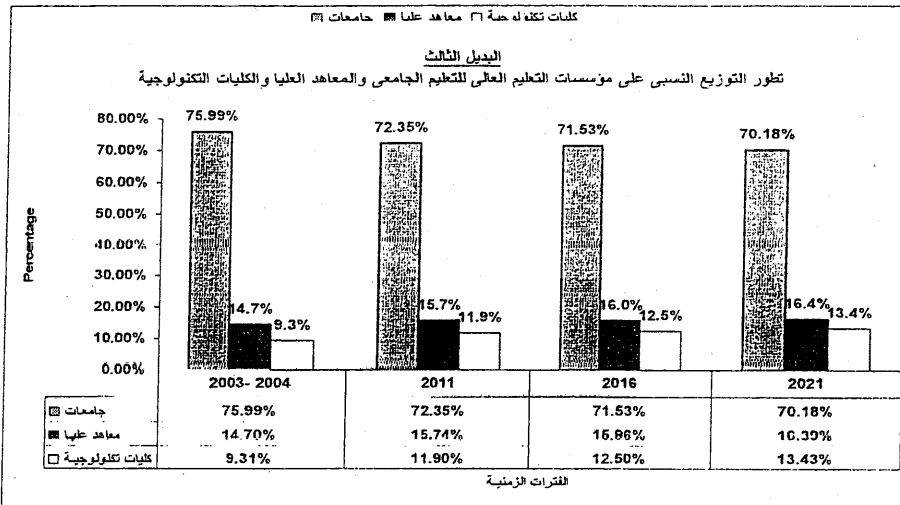
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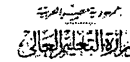
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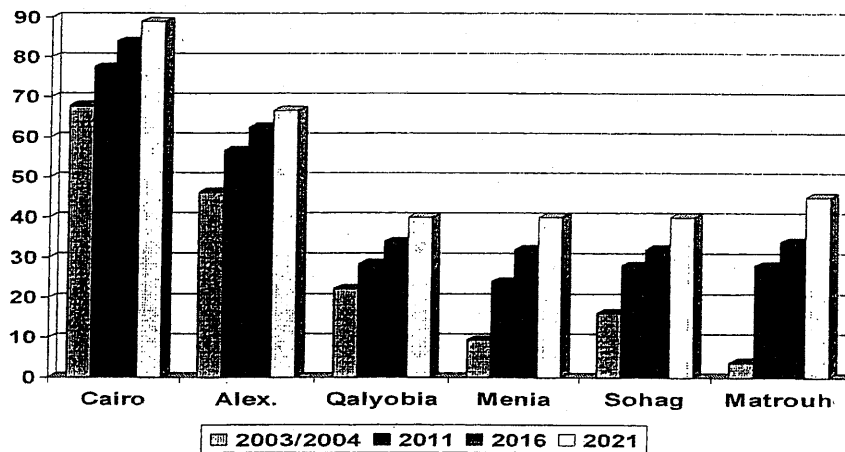
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## Higher Education Planning in Egypt Current Status & Future Aspirations



Results in some governorates – 50% enrollment Rate in 2021



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## Higher Education Planning in Egypt Current Status & Future Aspirations



### the Master Plan: Second Level

- Higher Education Institutions are categorized according to the type of institutions as follows:
  - State Universities.
  - Open Learning, E- Learning Universities
  - Al Azhar University.
  - State & Private Higher institutes
  - Technical Colleges.
  - Private and civil society universities
  - Private and civil middle institutes and technical colleges.

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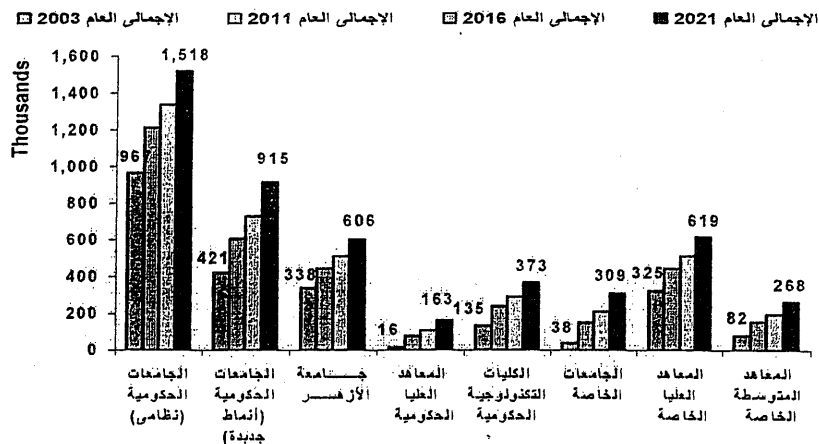
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## Higher Education Planning in Egypt Current Status & Future Aspirations



Enrolled students in Each Type of H.E. Institution, 50% Enrollment Rate



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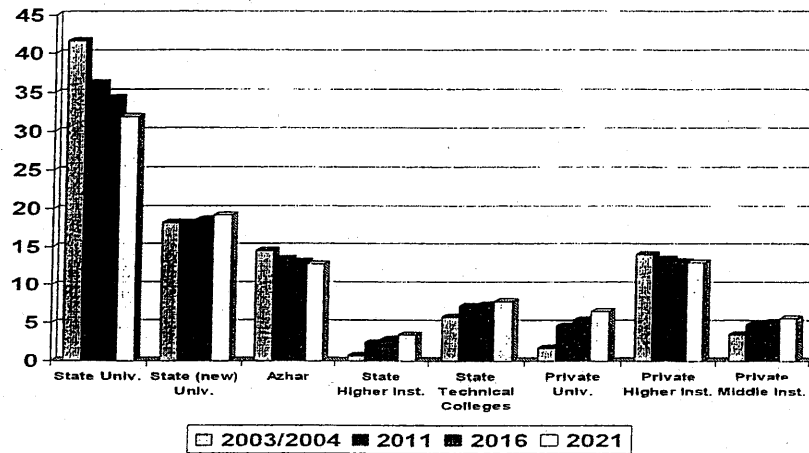


## Higher Education Planning in Egypt

Current Status & Future Aspirations



Percentage of change in enrollment per Type of H.E. Institution, 50% Enrollment Rate



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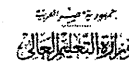
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## Higher Education Planning in Egypt

Current Status & Future Aspirations



### The Master Plan: Third level

Estimating no. of academic staff required for administering the higher education system.

Gradual development was adopted according to international quality indicators to be fulfilled in 2021 as follows:

- Faculty to students ratio at basic, applied and technical sciences to reach 1: 20
- Faculty to students ratio at Human sciences to reach 1: 50
- Faculty to assistant staff ratio reaches 1 : 1.3
- Ratio of enrolled students in Applied to human sciences reaches 50 % : 50 % in the year 2021 (compared to 40% : 60 % in the year 2004).

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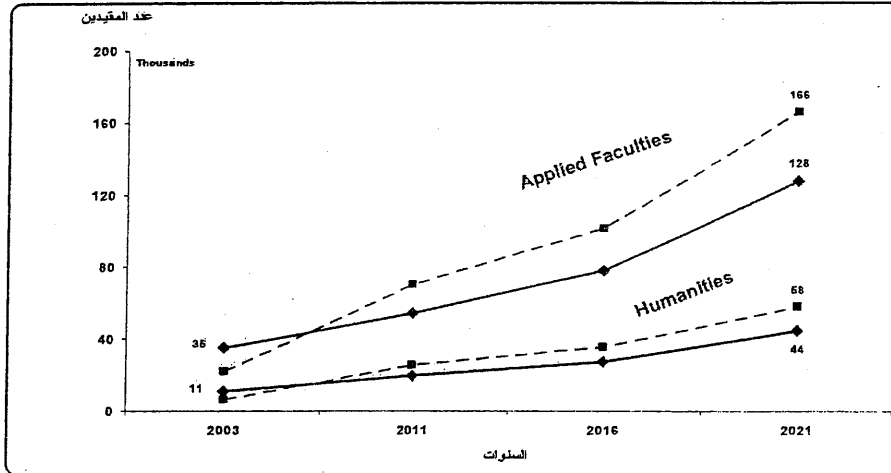
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## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي

### Development of no. of academic staff required, 50% Enrollment Rate



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## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي

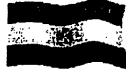
### The Master Plan: Fourth level

- Identifying investment requirements needed for realizing the endorsed scenario of the H.E. master plan
- Investment Cost including Building, Equipment, Operation & Personnel
- Required gap definition – see flow chart from gap analysis to establishing of the action plans for each governorate

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## Higher Education Planning in Egypt

Current Status & Future Aspirations



A study on Cost per student was conducted by Dr. Hesham Hasabo based on 6% inflation rate as follows:

### *Capital Investments*

<i>universities</i>				
Item	2004	2011	2016	2021
Cost per student in applied colleges (Thousand LE)	18	27.07	40.7	61.19
Cost Per Student in Humanities (Thousand LE)	11.7	17.59	26.45	39.77
<i>Technical Colleges</i>				
Item	2004	2011	2016	2021
Cost per student in applied colleges (Thousand LE)	12	18	27.2	40.8
Cost Per Student In Humanities (Thousand LE)	7.8	11.7	17.6	26.5

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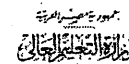
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## Higher Education Planning in Egypt

Current Status & Future Aspirations



### *Running Cost for Universities*

Item	2004	2011	2016	2021
Running Cost per student in applied colleges (Thousand LE)	6,700	10,070	15,150	22,780
Running Cost Per Student in Humanities (Thousand LE)	4,400	6,620	9,950	14,960

### *Running Cost for Technical Colleges*

Item	2004	2011	2016	2021
Cost per student in applied colleges (Thousand LE)	5	7	10	14
Cost Per Student In Humanities (Thousand LE)	3	5	6	9

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## Higher Education Planning in Egypt

Current Status & Future Aspirations



### Faculty members preparation

Item	2004	2011	2016	2021
Cost for mission at applied sciences	760,000	1,142,760	1,718,290	2,583,670
Cost for mission at Humanities	608,000	914,210	1,374,630	2,066,930

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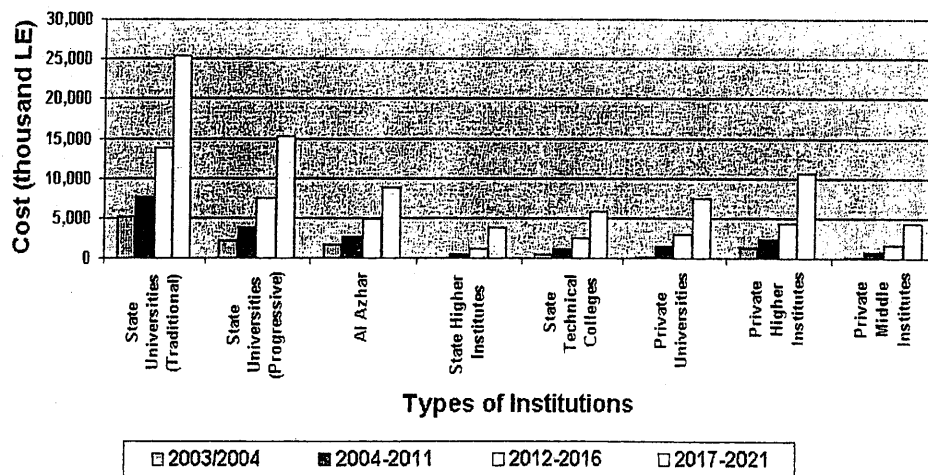


## Higher Education Planning in Egypt

Current Status & Future Aspirations



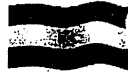
### Projected Cost per Types of institutions



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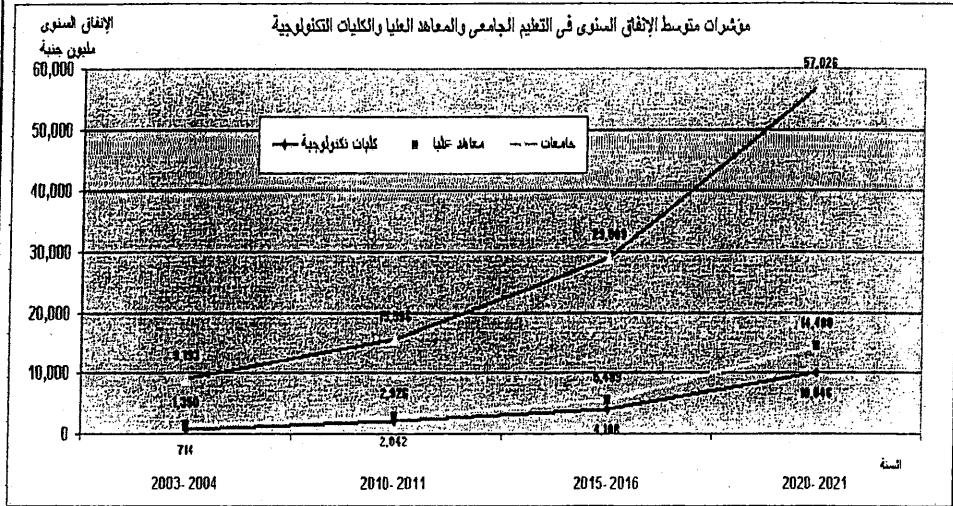
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## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي



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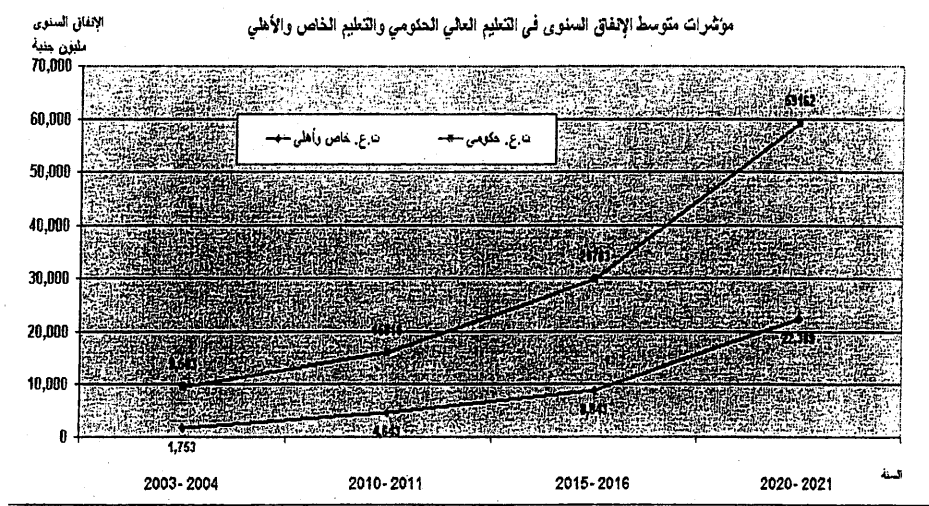
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## Higher Education Planning in Egypt Current Status & Future Aspirations

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وزارة التعليم العالي



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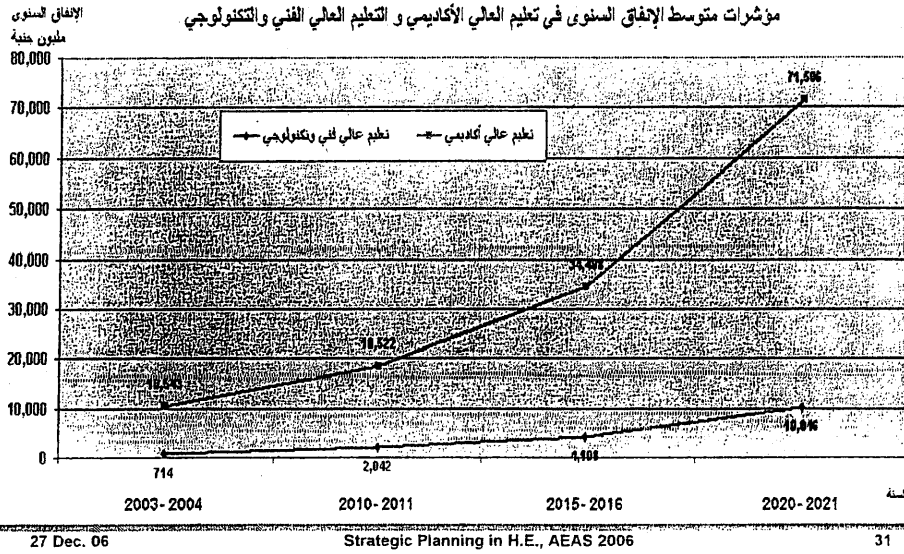
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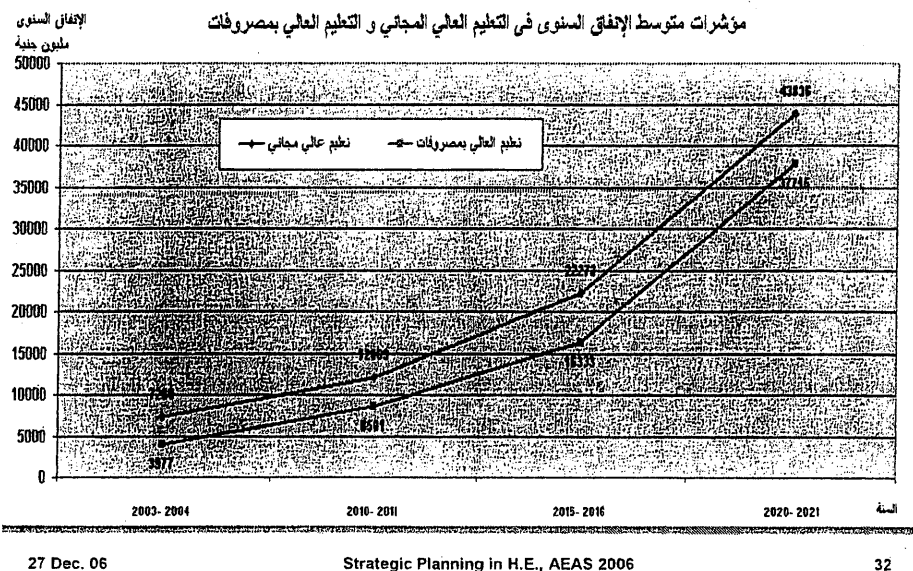
## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي



## Higher Education Planning in Egypt Current Status & Future Aspirations

جمهورية مصر العربية  
وزارة التعليم العالي







## Higher Education Planning in Egypt

### Current Status & Future Aspirations



### The Master Plan: Fifth level

- Developing detailed plan for each governorate i.e. identifying:
  - Fields of specializations.
  - Levels of academic, applied and professional programs.
  - Types and locations of higher education institutions.
  - Funding resources and roles of stakeholders

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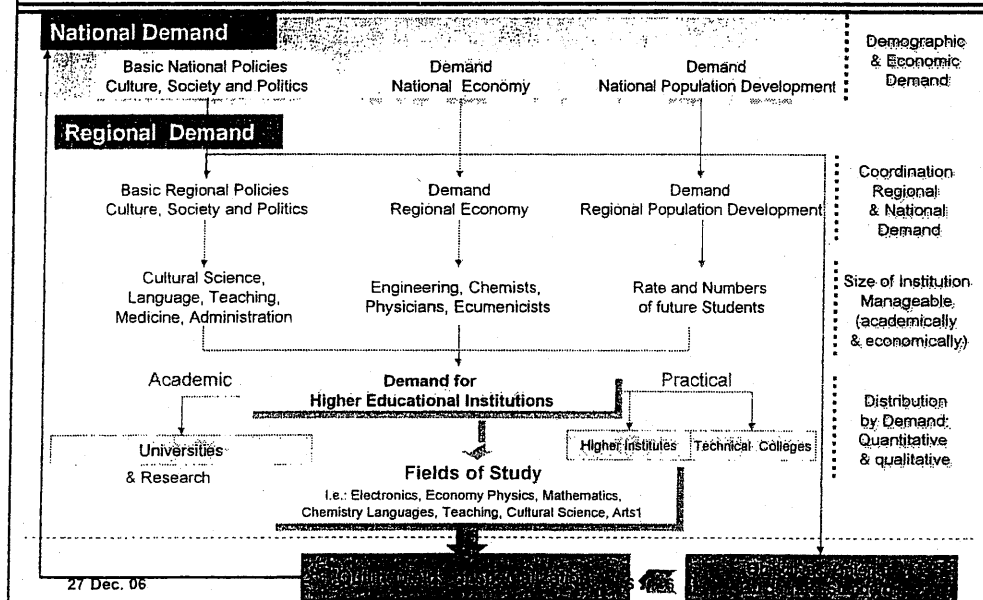
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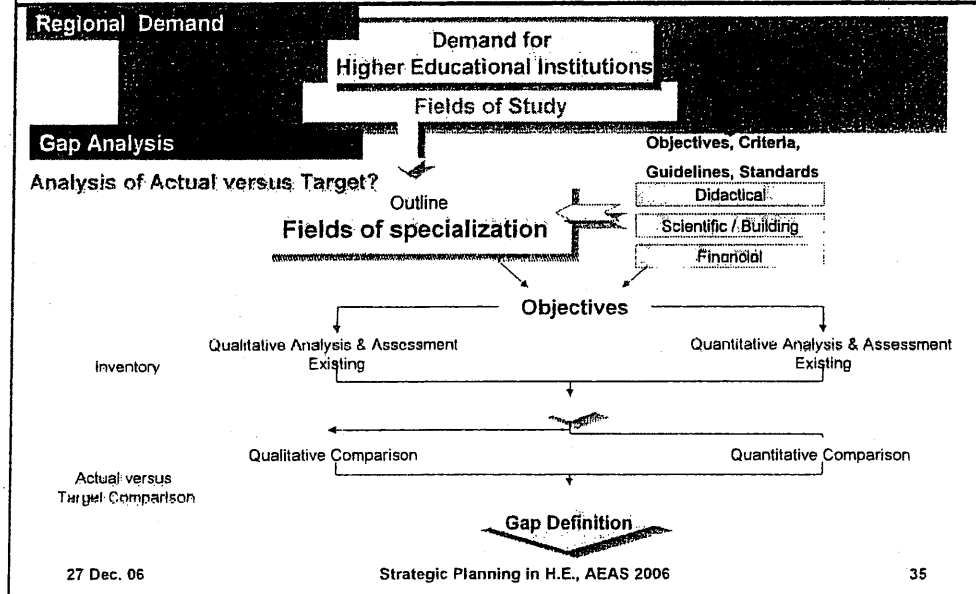
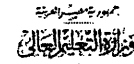
## Higher Education Planning in Egypt

### Current Status & Future Aspirations





## Higher Education Planning in Egypt Current Status & Future Aspirations



## Higher Education Planning in Egypt Current Status & Future Aspirations

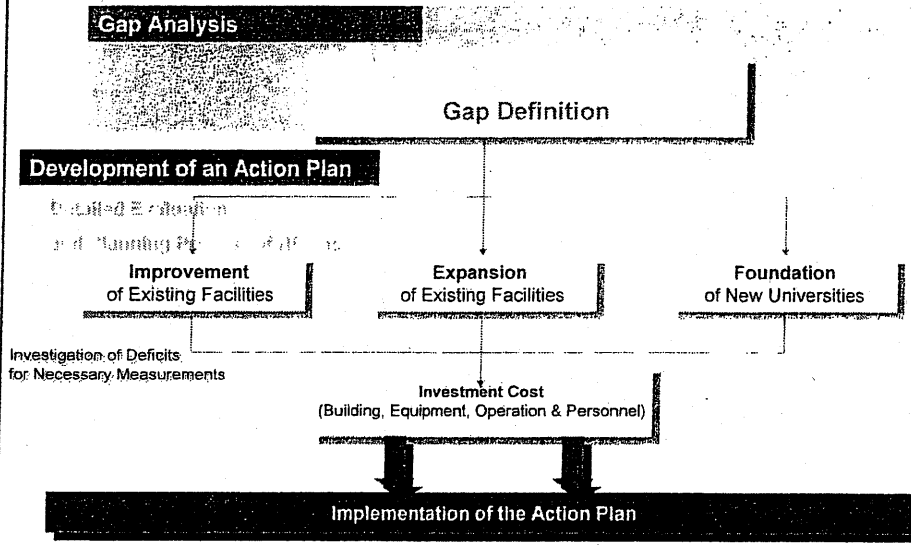


### The Master Plan: Sixth Level

- Implementation policies, monitoring and updating processes.
- Formulating action plans, time frame, and resources required to implement master plan on national, regional and local levels.



## Higher Education Planning in Egypt Current Status & Future Aspirations



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## Higher Education Planning in Egypt Current Status & Future Aspirations

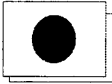



Thank You

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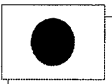

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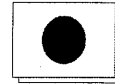
# EJUST

Business Community of Borg el  
Arab Perspective  
Presented by  
Amir Wassef



## Background

- *Why a Japanese University?*
  - Japan: a Role Model to be understood and emulated
    - Values, Beliefs, Ethics, Market Based, Pragmatic
  - A World Class Educational System
  - Japan: State of the Art Science, Technology and Management
  - Close links between Japanese Academia and Japanese Industry
  - A culture of Achievement and Excellence
  - A Quality Institution: A Unique Position in the Middle East



## Business Community Motivation

- *A modern Culture for A new community.*
- Meeting the challenges of the 21st Century
- Stakeholders are willing to embrace a success story
- Trust in the Capabilities and Potential of Japan

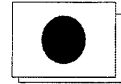


## Business Community Motivation

- *A platform for Urban Development:*

### The Core of Urban Development

- Teaching Institutions
- Health Care Services
- Industry
- Entertainment



## Business Community Motivation

- *A booster for the Local Economy*

Reaching the "Critical Mass" will accelerate the development of BA.



## Business Community Motivation

- *A Legacy for Future Generations*





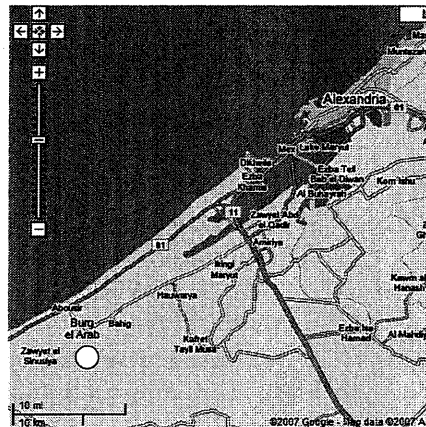
## Why Borg el Arab

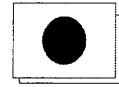
- **Industry: a Booming Environment**
  - BA is a Central region with potential for **expansion**
  - Nearby Presence of diversified industries (40%) and 65% of the Petrochemical and Petroleum Industry in Egypt.
  - Plentiful undeveloped real estate.
- **FDI' s & Economic Indicators**
  - Egypt's share of Foreign Direct Investments has seen a sharp rise in recent years due to several policy reforms reaching b\$ 7
  - The GDP Growth rate reached 6.9% (2006) and expected o reach 7.5% in 2007
- **New Entrants in Borg el Arab**
  - Turkey is investing heavily in the Textiles and Garments Industry in BA.
  - Qatar will establish an industrial estate over 2.5 million square meters.
  - 2 more private universities are planned in BA.



## Why Borg el Arab

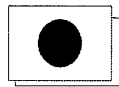
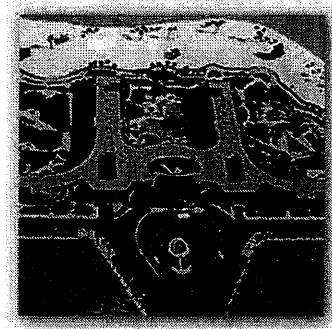
- **The City**
  - Borg el Arab (BA) is an emerging society in close proximity to Alexandria- the nation's second largest city and the home of 40% of Egyptian Industry and 65% of Petrochemical and Petroleum Industry.
  - Borg el Arab is a good choice as it can offer an atmosphere of reclusiveness, and a focused academic life while still in close proximity to a vibrant city.
  - It has potential for geographic expansion.
  - Many services need to be improved. Mobilizing the city to serve the University will accelerate the development pace.





## Why Borg el Arab

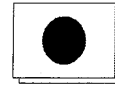
- *Amenities*
  - *One of Alexandria's largest sporting and social clubs plans to have new facilities over 250 acres near the proposed site for EJUST*
  - *Culture Center and social club*
  - *Places of worship*
  - *Close proximity to the recreation areas of the North Coast on the Mediterranean.*



## Japanese Egyptian University

- *Market Driven Approach*
  - **Research Based Teaching centered on Real World Problems**
    - **Capitalize on BA Industries and providing solutions and innovative products that could be commercialized through the BA industry.**
    - **Capitalize on Donor Agencies Programs and Benefactors, and the many grants and research projects available to solve community and national based issues.**
    - **Capitalize on Mubarak City for Scientific Research.**
    - **Capitalize on Bibliotheca Alexandrina**

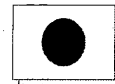




## Japanese Egyptian University

- **Role Models: INSEAD**

- World famous and one of the largest business school in the world, near Paris
- School has two campuses: Europe (France) and Asia (Singapore)
- 143 renowned faculty members from 31 countries
- More than 880 MBA participants.
- Supports leading edge research with the support of 17 Centers of Excellence. (INSEAD-Wharton alliance extends the business experience over 3 continents)
- ACME (Advisory Committee Management Education) is made of more than 80 senior executives from industry partners of INSEAD to advise on needs and trends in Management education.

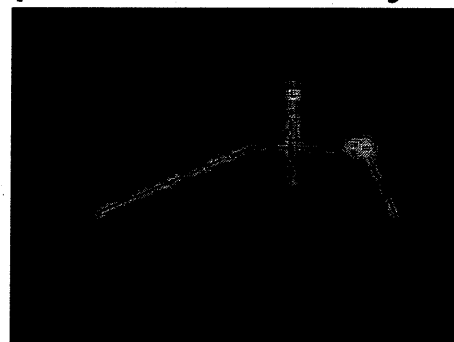


## Japanese Egyptian University

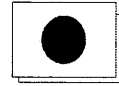
- **Role Models: Qatar Education City**

– 10 Million square meters (2400 acres) and home for branches of world class institutions:

- Carnegie Mellon Qatar Campus (Business & Computer Science)
- RAND Qatar Policy Institute
- Cornell's Weill Medical School
- Texas A&M University (Engineering)



- Georgetown University (s)
- School of Foreign Service)
- Virginia Commonwealth University (Arts & Communications)



## Japanese Egyptian University

- *Role Models:*  
Qatar Education City  
**Conference Hall &  
Auditorium**

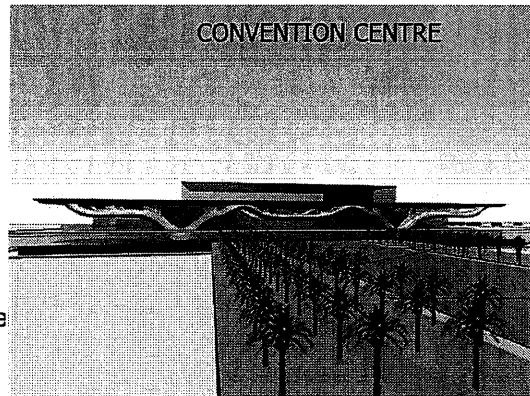
The Architects Is Arata  
Izosaki Of Japan.

Scheduled For  
Completion In 2006.

2.500 Seat Multi-Purpose  
Auditorium.

Conference & Exhibition  
Halls.

400 Seat Theater.



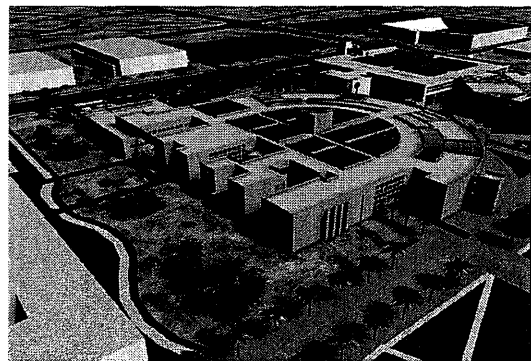
## Japanese Egyptian University

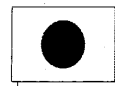
- *Role Models:*  
Qatar Education City  
**Carnegie Mellon  
University**

- Carnegie Mellon Qatar

- Completion Date: 2007

- Architect: Legorreta &  
Legorreta, Mexico .





# Japanese Egyptian University

## *Mandate of the University*

### – **A Center of Excellence**

- World class education
- The accreditations and certificates should be recognized all over the world.
- Research and Project Based Teaching

### – **Top Quality Faculty**

- Staff and faculty are guided by a few leaders in their respective fields.

### – **A Hand Picked Student Pool**

- The student pool should target Egyptian and foreign students from Arab and African countries.



# Japanese Egyptian University

## *Mandate of the University*

- It would offer the Egyptian students an alternative to studying abroad.
- Guest students have a lower cost alternative than traveling to the more traditional university campuses overseas
- **Community Involvement and Social Responsibility: Solving real-world problems.**



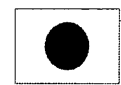
## Our Vision for the University

- **3 Schools:**

- ***A broad-based long term outlook***

- *School of Science and Technology*
- *School of Business and Humanities*
- *School of Life Sciences*

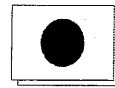
*The wording of the mandate for EJUST must take into consideration a long term view, in order to offer maximum flexibility in implementation.*



## Our Vision for the University

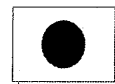
- ***Campus***

- *In view of the current status of the city of BA, it is imperative to allocate a substantial part of the resources for this university towards the establishment of a quality campus that provides all the needed elements to support and sustain a thriving learning environment.*



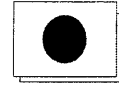
## Our Vision for the University

- **Campus**
  - ***On-campus accommodation for students and faculty (Target over 60% on-campus accommodation).***
  - ***Good amenities and quality social life with the necessary infrastructure for recreation, sports, leisure, and transportation.***
  - ***Extensive libraries / Cybrary***
  - ***Quality research facilities, classes and labs***
  - ***Fully wired campus through high speed digital links.***
  - ***Video conferencing and distance learning.***



## Our Vision for the University

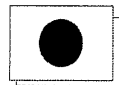
- **Architecture**
  - World class architecture : a National Japanese Competition***
    - ***We would like to suggest that the Japanese partners launch an architectural competition for the design and development of the Campus***



## Our Vision for the University

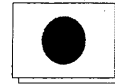
### *Staff*

- Japan should support a fair number of Japanese Academicians in EJUST*
- Invite the support of top scholars, Nobel Laureates, and prominent scientists for lectures and short courses .*



## Our Vision for the University

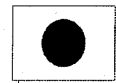
- *Management*
  - EJUST will rely on Modern Management Techniques, implemented by a number of Japanese administrators working in conjunction with Egyptian counterparts.*
- *Administration*
  - Extensive links with industry and prominent public figures as board members.*
  - Balanced Board of Trustees, sets policies and supervises compliance. We see half the board made up of Japanese partners*



## Our Vision for the University

### *Learning Experience*

- **Focus on Multi-disciplinary- Teamwork Oriented-Project Based settings for learning Research-based teaching:**  
*reinforces the learning experience and gives a sense of purpose to the education process.*
- **Encourage Creativity ( ex. participate in international student contests.)**
- **Encourage extra-curricular activities**
- **Wide Ranging E-learning / on-line courses**



## Our Vision for the University

### • **Stakeholder Value**

*The University should seek to maximize stakeholder value through a set of basic principles centered around:*

- **Sound Financial Policy, and Transparency of Administration.**
- **Reasonable Fees and Tuition**
- **Earn the trust of Donors and Benefactors**
- **Affiliations with World-class institutions**



## Our Vision for the University

### *Cultural Factors*

– **Cross Cultural Activities**

Platform for Cultural Exchange.

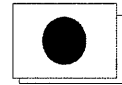
– **Museum and Science Park**

With time the heritage of the University should be preserved and exhibited for the benefit of the public and future students.

– **Congress and Conference Center**

– **The Wired Campus: IT and Communications Infrastructure**

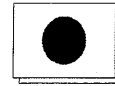
- We see this as a showcase of Japanese Technology, and the test bed for the IT department.



## Government vs. Private Universities

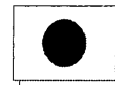
- *Government Universities have a solid reputation in spite of some shortcomings.*
- *Industry has a better perception of Public Universities graduates.*
- *A Public- Private University will have the benefits of both entities.*





## Government vs. Private Universities

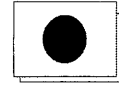
- *The New Model: PPP*
  - *In this model the Public- Private partnership is an internal arrangement, between MoHE and BA Stakeholders.*
  - *The counterpart to the Japanese Side will still be MoHE.*



## Government vs. Private Universities

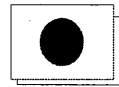
### *Equity: Who owns it?*

- *Equity will remain between the governments of Egypt and Japan.*
- *Other stakeholders such as private investors or large corporations could be allowed to participate in the **funding** or **endowment** of the University.*



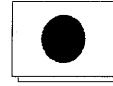
## Short Term Plan

- *Start Immediately*
- *Capitalize on Available Facilities*
- *Steps to implementation*
  - Form a Permanent Founding Committee (Japan, MoHE, Business Community)
  - Agree on Mandate
  - Ratify the Project through a Presidential Decree
  - Develop an Implementation Plan
  - Mobilize Resource
  - Execute and Handover to Permanent Executive Committee



## Long Term Vision

- *We see BA becoming a University City*
- *A Cultural Bridge to the Japanese Model*
- *EJUST Becomes part of JUBA: Japanese University of Borg e Arab*



## In Conclusion

*We renew our pledge*

*The investors of the Borg el Arab area pledge to offer their full support to the establishment of a modern university following the above stated guidelines and principles, and are willing to play an active role in the establishment of the University and contribute in kind and in capital to successfully finance part of the foundation of the university in conjunction with other sources of financing and contribute time and effort to see the project bear fruit.*



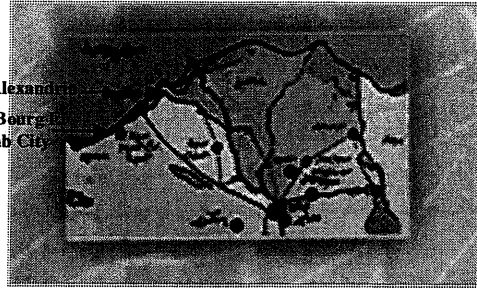
Thank you

Let's make it happen...





Alexandria  
New Bourg  
Arab City



*Mubarak City for Scientific Research & Technology Applications*  
(*MuCSAT*)

**Was built on 225 acres in the industrial area located at New Bourg El Arab City -- near Alexandria where significant percent of the Egyptian industry exists.**



*The Presidential Declare has 12 Institutes*

- \* *Genetic Engineering and Biotechnology Research institute (GEBRI).*
- \* *Informatics Institute (ITI).*
- \* *Advanced Technologies and New Materials Research Institute (ATNMRJ).*
- \* *Technology Capabilities Development Center (TCDC).*
- \* *Arid Lands Cultivation Research Institute (ALCRI).*
- \* *Environmental and Natural Resources Research Institute (ENRRI).*
- \* *Laser Research Institute (LRI).*
- \* *New and Renewable Energy Research Institute (NRERI).*
- \* *Fine Chemical Research Institute (FCRI).*
- \* *Pharmaceutical and Fermentation Industries Development Center (PFIDC).*
- \* *Small Scale Industrial Development Centers (SSIDC).*
- \* *Engineering Industrial Development Center (EIDC).*



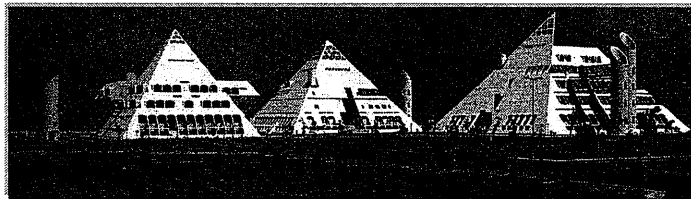
### *MuCSAT Mission*

- ✱ Establishment of centers of excellence in the merging fields of technology.
- ✱ Development of Technological products through RTD oriented to the Market.
- ✱ Construction of pilot plant production units.
- ✱ Development of new and advanced technologies directed to the application of Scientific methodologies in the production lines and linking between scientific research and industrial sectors.
- ✱ Offering training and Consultancy to industrial and production sectors and helping for technology transfer (Vertical and Horizontal).
- ✱ Collaboration with local and international agencies in the technological fields



*Three institutes and one Technology development center were officially started working in August 2000*

- ✱ Genetic Engineering and Biotechnology Research institute (GEBRI).
- ✱ Informatics Institute (ITI).
- ✱ Advanced Technologies and New Materials Research institute (ATNMRI).
- ✱ Technology Capabilities Development Center (TCDC)





### *GEBRI Departments*

The institute is divided into *six scientific departments* with uni-specification and multipurpose targets, which are:

- \* **Nucleic Acid Research.**
- \* **Protein Research.**
- \* **Environmental Biotechnology.**
- \* **Medical Biotechnology.**
- \* **Bioprocess Development and Pilot Plant.**
- \* **Pharmaceutical Bio-products.**



### *Informatics Institute Departments*

- \* **Computer graphics and multimedia.**
- \* **Networking and distributed systems.**
- \* **Database and decision support systems.**
- \* **Knowledge-based systems and robotics.**
- \* **Computer-based engineering applications.**



*Advanced Technologies and New Materials  
Research Institute Departments*

- \* **Electronic Materials.**
- \* **Polymer Materials.**
- \* **Composites and Nano Structured Materials.**
- \* **Fabrication and Process Technologies.**
- \* **Modeling and Simulation of Materials.**

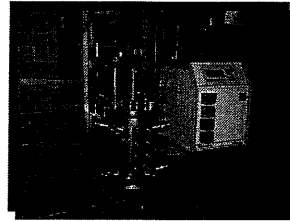
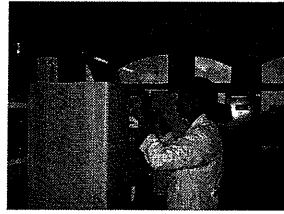


*Technological Capabilities Development Center*

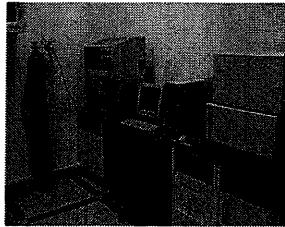
**This center offers training programs in:**

- \* **Computer Applications for Industry.**
- \* **Manufacturing Technologies.**
- \* **Small and Medium Industry Process.**





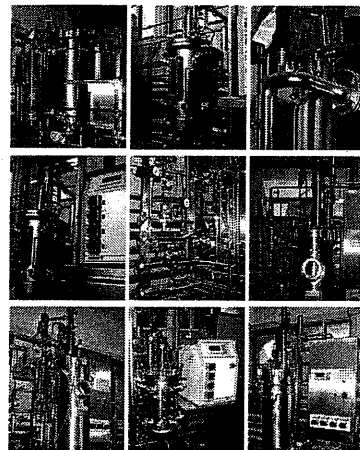
## *Facilities*



### *1. Semi Industrial Scale Pilot Plant*

**Semi-industrial scale-GMP pilot plant unit is already installed at GEBRI and it is now in the stage of early operation phase.**

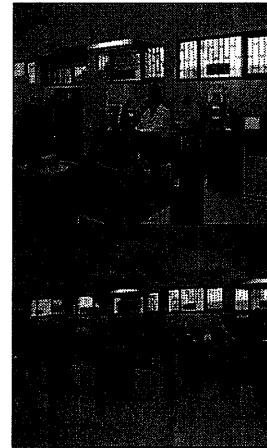
**This unit was designed to serve the production of new pharmaceutical products and some industrial enzymes and/or development of some existing products.**





## 2. GEBRI Central Laboratory

- HPLC,
- \* FPLC,
- \* Flowcytometer (FACS),
- \* Fluoroscan,
- \* ELIZA reader,
- \* Amino Acid Analyzer,
- \* Ultra centrifuge
- \* Image analyzer,
- \* Gas Chromatography (GC)
- \* Atomic Absorbance,
- \* DNA Sequencer,
- \* DNA Isolation (Gene Pure),
- \* Oligonucleotide Synthesizer,
- \* Peptide Synthesizer,
- \* Spectrophotometers,
- \* Thermocyclers,
- \* Real time PCR,
- \* Pulsed filed electrophoresis
- \* Ion chromatography
- \* Microbiology Work Station
- \* Mass Specter photometry
- \* Lueminoscan,
- \* Lypholyzers.

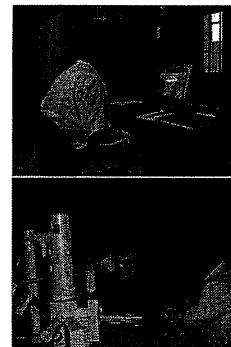


*This unit is now in the process for accreditation for ISO 17025 through the center of industrial modernization and it is expected to be finalized during the next two months*



## 3. ATNMRI Central Laboratory

- Scanning Electron Microscope,
- \* X-Ray Diffraction,
- \* X-Ray Florescence (XRF),
- \* Inductively Coupled Plasma (ICP)
- \* TGA/DSC,
- \* Fourier Transform Infra Red (FTIR),
- \* Gel Permeation Chromatography (GPC).
- \* Optical Microscope
- \* Particle Size Analyzer
- \* Universal Testing Machine
- \* Hardness and Microhardness



*This unit is now in the process for accreditation for ISO 17025 through the center of industrial modernization and it is expected to be finalized during the next two months*



### *Workshops and Training Courses (2000 – 2006)*

- \* US-Egypt workshop in the field of Genome during the period from 5-8 December, 2003.
- \* US-Egypt workshop in the field of “Synthesis, Characterization and Industrial Applications of Nanoparticles and Nanostructure Materials”, during the period from 12-15 November, 2005.
- \* 50 training courses for the qualification of Graduate students under the supervision of Ministry of communications and information technologies and ministry of state for military production.
- \* 50 training professional courses for surrounded companies and factories.
- \* 9 training courses in the field of small enterprises.
- \* Workshop in the field of “Role of MuCSAT for industrial development in Egypt”, at Feb. 17, 2004.



### *MuCSAT Members*

Grade	GEBRI	ITI	ATNMRI	Total
Prof.	1	1	----	2
Ass. Prof.	10	1	3	13
Researchers	30	6	7	43
Res. Assistant	17	21	8	46
Assistant Res.	1	18	9	28
Scholars	27	1	7	35
<b>Total</b>	<b>86</b>	<b>48</b>	<b>34</b>	<b>167</b>

*In addition 37 Staff members are working now at the National Research Center upon starting their belongings institutes*



## Suggested Areas for Collaboration between MuCSAT and E-JUST

ITI

Training  
Research

1. Computer graphics and multimedia.
2. Networking and distributed systems.
3. Database and decision support systems.
4. Knowledge-based systems and robotics.
5. Computer-based engineering applications.

ATNMRI

Training  
Research

1. Electronic Materials.
2. Polymer Materials.
3. Composites and Nano Structured Materials.
4. Fabrication and Process Technologies.
5. Modeling and Simulation of Materials.

