



## **Project for a Strategic Plan for University Education**

in the Kingdom of Saudi Arabia

**(Horizon and Future of Higher Education 1426-1450 H)**

**-Aafaq-**

DOMAIN OF STUDIES

### **C. Professional Sectors Studies**

- C-1 Private higher education
- C-2 Female higher education
- C-3 Health education
- C-4 Engineering education
- C-5 Pedagogical education

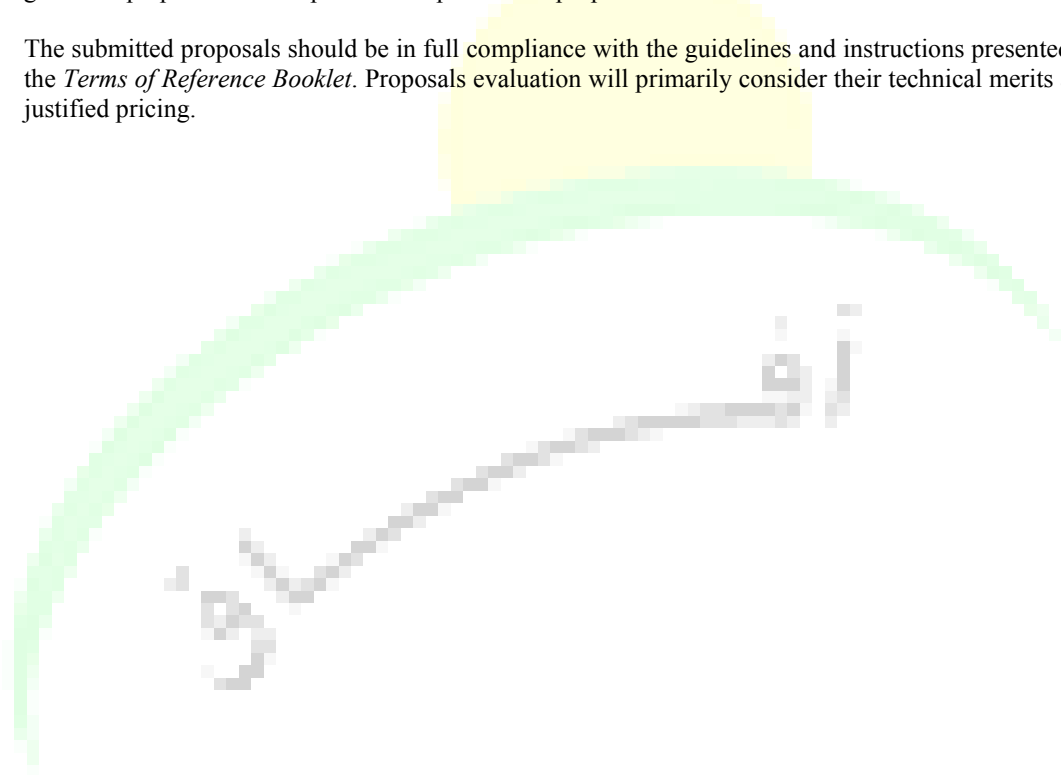
## Preface

Following is a brief presentation of *Aafaq* project demonstrating a comprehensive layout of deliverables that should be included in the proposals submitted in fulfillment of the Professional Sector Studies (Group C). The covered studies are:

- C-1 Private higher education
- C-2 Female higher education
- C-3 Health education
- C-4 Engineering education
- C-5 Pedagogical education

This demonstration is intended to illustrate the specific requirements of the scope of each study and to guide the preparation of respective comprehensive proposals for the listed studies.

The submitted proposals should be in full compliance with the guidelines and instructions presented in the *Terms of Reference Booklet*. Proposals evaluation will primarily consider their technical merits and justified pricing.



# **1- Project for a Strategic Plan for University Education in the Kingdom of Saudi Arabia**

## **(Aafaq)**

### **1-1 Introduction**

The Kingdom of Saudi Arabia under the leadership of the Custodian of the Two Holy Mosques is witnessing nowadays a comprehensive development in all social and economical aspects. In this context, the higher education system plays a central role towards fulfilling the human resources needs of this developmental operation through rendering scientifically qualified graduates with high-quality technical skills, and after all relying on Islamic high values.

Higher education in Saudi Arabia -as in other similar educational systems- faces various challenges such as, academic excellence, high levels of demand, and the capability of its establishments to cope with the ever-increasing population growth rate and the demographic distribution. The system is also challenged with issues that deal with the effectiveness of partnership among its organizations with other private sector establishments in the areas of research and development. The efficiency of the systems' establishments towards their coordination with scientific research and technical development issues presented by the effect of globalization should also be scrutinized. Moreover, the system's ability to cope with global influence on education principles, and its satisfaction towards the job market needs are also considered as effective challenges.

The Ministry of Higher Education has actually launched an initiative to prepare a modern and ambitious long-term plan for university education. Hence, the country will be able to fulfill all complicated challenges via following a long-term strategic plan method that relies on a scientific and balanced method in order to come out with scientific and objective results.

The approach implemented to execute this vital project includes two essential outlooks:

First: Theoretical outlook, and all related aspects such as literature survey, and identifying related international experiences.

Second: Practical outlook, which relies on executing a set of studies aiming at generating documented scientific outcomes, giving practical recommendations with the required quantity for all aspects of the plan. Therefore, the availability of sufficient, accurate, and high-quality information is considered to be a primary basic procedure that all the other procedures of executing the project will rely on.

A set of technical studies will be conducted under the umbrella of this national project. These studies are expected to come out with scientific and objective results needed to develop the conclusions and essential recommendations needed for the future plan. In addition, these results are needed in executing the plan's aspects in all the domains of the higher education system in the Kingdom.

Other studies implemented in this project focus on the tracks that compose the higher education system. These tracks will include the technical and critical concerns that affect the education system.

### **1-2 Objectives of the Project**

The main objective of the project is to promote the efficiency and effectiveness of the higher education system in Saudi Arabia, through the preparation of an ambitious, futuristic, practical, and long-term plan (for 25 years) that identifies vision, value, standards for performance

measurements, and resource requirements. It additionally aims to improve adequate utilization of human and financial resources; and encouraging universities to allocate more resources for community service. This plan should include all detailed aims, objectives, and required strategies for the future of the development sector for the coming 25 years.

The project is also geared to produce a detailed implementation plan for higher education for the first 5 years and should propose a mechanism for institutions of higher education for sustainable continued planning and implementation of strategic and operational plans.

### **1-3. Studies included in the project**

#### **A. Track studies**

Executing the works of preparing a strategic plan for university education in the Kingdom postulates studying the tracks comprising the higher education system in order to cover the various issues related to and affecting the system. The purpose of that is to figure out the scientific and objectives outcomes required to develop the essential conclusions and recommendations for setting up the strategy, and establishing performance evaluation criteria. All of these fundamentals are required to execute the aspects of the long-term plan in all studied domains of the higher education system in the Kingdom.

These tracks comprise conducting a number of evaluative studies on the issues facing the higher education in reference to previous studies administered by the Ministry of Higher Education. This task has been organized in eight main tracks, namely:

- A-1. Admission and capacity
- A-2. Compliance with job market
- A-3. Cost, financing, and infrastructure
- A-4. Organization and management
- A-5. Educational process
- A-6. Graduate studies
- A-7. Scientific research
- A-8. Community services

#### **B. Specialized studies**

Executing the long-term strategic project plan of university education in the Kingdom determines performing a number of specialized studies that cover various technical aspects as well as issues that have an effect on the higher education system. That will enable figuring out the scientific and objective outcomes required to develop the essential conclusions and recommendations for the setting up strategy, and establishing performance evaluation criteria. Hence, the long-term plan's aspects in all domains of the higher education system in the Kingdom will be achieved and executed.

The evaluative studies comprise four specialized studies, namely:

- B-1 Educational technologies
- B-2 Students
- B-3 Faculty
- B-4 Information technology

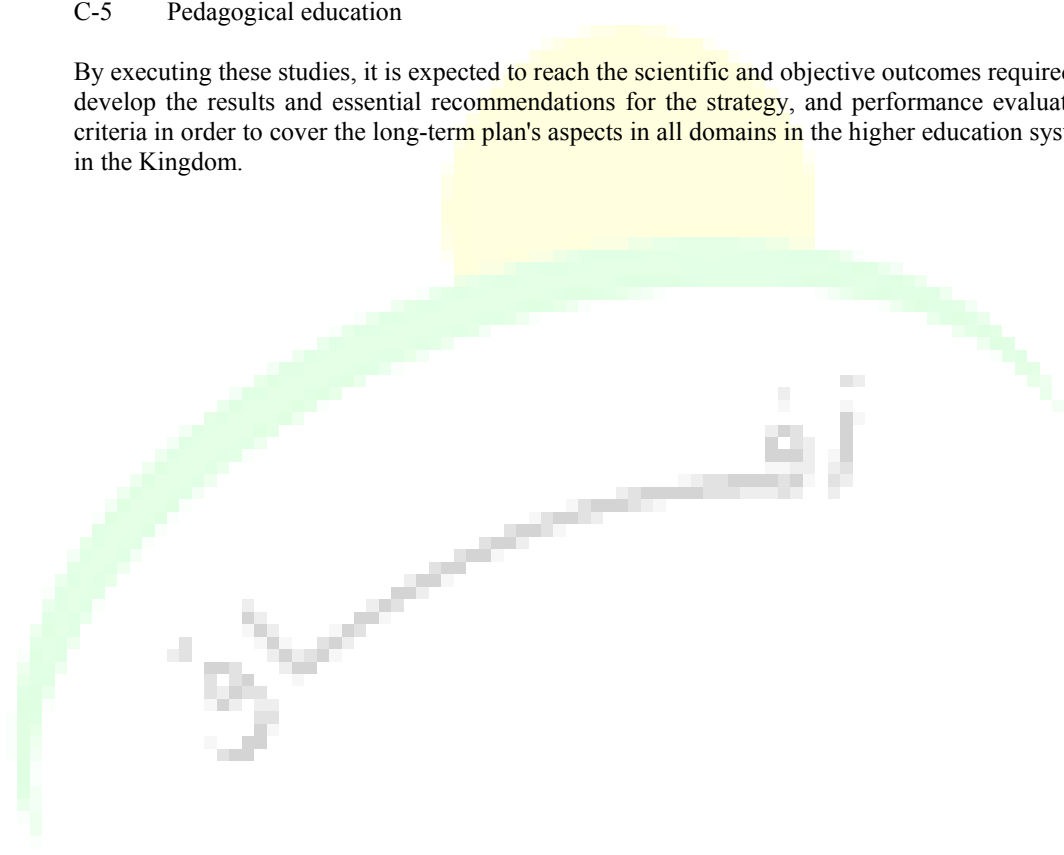
#### **C. Professional Sectors Studies**

The project of preparing the long-term strategic plan for university education in the Kingdom determines studying the various specialized sectors for the higher education system. That will enable figuring out the scientific and objective outcomes required to develop the essential conclusions and recommendations for setting up the strategy, and establishing performance evaluation criteria. All are required to cover the long-term plan's aspects in all domains of the higher education system in the Kingdom.

The evaluative studies comprise five specialized sectors, which are:

- C-1 Private higher education
- C-2 Female higher education
- C-3 Health education
- C-4 Engineering education
- C-5 Pedagogical education

By executing these studies, it is expected to reach the scientific and objective outcomes required to develop the results and essential recommendations for the strategy, and performance evaluation criteria in order to cover the long-term plan's aspects in all domains in the higher education system in the Kingdom.



## Group (C) Studies: Professional Sectors Studies

### C-1. Private Higher Education

1. Introduction
2. Significance
3. Objectives
4. Scope and aspects
5. Requirements
6. Deliverables
7. Duration

#### Private Higher Education

##### 1. Introduction

Private higher education is an important source for higher education in the Kingdom. This category of education is an active channel in the higher education system as it takes up large numbers of students for quality education in compliance with job market demands. It is therefore essential to disembark for a comprehensive vision for private higher education in the Kingdom.

##### 2. Significance

Private higher education was recently introduced in the Kingdom and it has been attracting a considerable number of students which in turn reduces the government's financial burdens. This category of education also offers educational opportunities to students for whom government sponsored university education could not be offered. It also represents a prospect for active participation of the private sector into higher education activities. This study is, therefore, significant in terms of establishing the administrative and organizational fundamentals for private higher education as well as defining the criteria that will govern the delivery of quality education.

##### 3. Objectives

This study –in general- aims at conducting a comprehensive evaluation of the Kingdom's higher education institutes to appraise the need for the participation of private sector in establishing universities and colleges that will achieve quantitative and qualitative development in the higher education process. In addition, this study should achieve a number of additional objectives, represented in the following:

1. Quantitatively and qualitatively evaluating the existing capacity of all governmental and private higher education institutes, and pinpointing the gaps from demand, supply, and geographical distribution points of view.
2. Assessing total numbers of male and female students currently registered in both governmental and private higher education establishments and estimating the extent of enrollment in higher education institutes for the coming 25 years.
3. Foreseeing the need of private sector's participation in establishing universities and colleges to enhance the geographic distribution as well as both the quantity and quality of higher education opportunities.

4. Proposing mechanisms and methodologies for the synchronization between demand and supply for private higher education.
5. Evaluating the possibilities for the active participation of private sector in offering higher education in specific majors demanded by the development process and current and future job market requirements.
6. Suggesting indices for appropriate education fees.

#### **4. Scope and aspects**

The scope of this study and its aspects comprise the following:

1. Conducting statistical studies on the quantities of secondary school graduates for the coming 25 years, including the flow of students into secondary school and university levels.
2. Performing statistical analyses on the available capacities in government sponsored universities for the coming three decades through the studying of the each university's development plan.
3. Preparing statistical studies about market required majors through conducting qualitative studies of the academic programs in these universities.
4. Defining the levels of interaction and mutual interests between government sponsored universities and privately owned universities.

#### **5. Requirements**

The study requires a high level of competency for executing a set of steps that will together provide a clear vision about government and private higher education. These requirements are:

1. Complete knowledge of the rules and regulations governing universities in the Kingdom
2. Comprehensive assessment of universities in terms of enrollment numbers and capacities in the coming three decades.
3. Comprehension of other countries experiences in areas of private higher education and particularly the controls of fees payment by students
4. Knowledge of fees systems implemented in private universities in other countries in the region and in the world in comparison to the respective majors; and proposing a fees system
5. Established contacts with officials from academy and administrative bodies to realize the difficulties and obstacles facing private universities
6. Appraisal of the levels of satisfaction from private university students; and the conduction of workshops and seminars related to the scope of this study

7. Comprehension of student evaluation systems and means; and comparing those to the applied ones in government universities
8. Awareness of methods adopted by private universities for the selection of textbooks
9. Reviews of the rules and regulations governing private higher education for realizing more economically feasible opportunities that attract private sector investment in higher education, but with no lapse in established quality criteria in programs and management
10. Knowledge of attractions to faculty in private universities, their qualifications, and salary scales with comparisons to government universities salary scales
11. Contacts with graduates of currently operating private universities and colleges to enquire about their levels of education as well as the offered job opportunities
12. Visits to currently operating private universities and colleges to assess the available facilities and their compatibility to the provided academic programs and the extracurricular activities
13. Surveys of classes in private universities and colleges to establish student to faculty ratios
14. Data about private universities faculty teaching loads
15. Characterization of financial resources for private universities in addition to student fees, with comparison to private higher education financial resources in other countries

## **6. Deliverables**

This study should present a comprehensive report that includes the following:

1. An executive summary of the study.
2. A documentation of all reference information included in the study.
3. An assessment of total numbers of male and female students currently registered in both governmental and private higher education establishments and an estimation of the extent of enrollment in higher education institutes for the coming 25 years.
4. An evaluation of the required number of private higher education institutes that need to be established along with justified geographical distribution and a vision of the majors to be offered
5. The outcomes of this study in addition to highlights of the results of meetings with focus groups, general seminars, brainstorming seminars, workshops, etc. In addition, studying different scenarios, and the interactions between the variables that influence the private higher education policies and procedures.
6. Analytical studies of a selection of models of private higher education in the world along with a futuristic review of directions of this category of education both locally and internationally.
7. Listings of guiding indices and evaluation criteria for private higher education with the means for academic and professional accreditation processes required for enhancing the quantitative and the qualitative content of private higher education in the Kingdom.

8. Results of the assessment of the educational environment, the organizational procedures, and the infrastructure of private higher education establishments, along with descriptions of their weaknesses and strengths affecting their available opportunities for high quality participation in the higher education process.
9. The challenges diagnosed to be obstructing the utmost involvement of private higher education in the Kingdom. This part should be augmented with proposing the most appropriate set of components that should have positive effect on their performance.
10. An appropriate long-term strategy for overcoming weaknesses and enhancing strengths of private higher education in the Kingdom.
11. Capabilities and methodologies found to be enhancing the performance of private higher education institutes and improving the levels of interaction and response to future demands of development plans.
12. Proposals of various scenarios required to develop private higher education establishments in the Kingdom with specific reviews of important issues for discussion according to levels of importance. This approach should be associated with the required means for achievement of success and the required benchmarking procedures that define academic and professional accreditation criteria.
13. Determining the needed methods of execution, budgets, temporal plan, execution responsibilities, training requirements, changing demands, and other technical parameters that affect the performance of the admission and capacity operation.
14. Strategic alternatives designed to achieve the objectives and purposes of the long term higher education plan, their feasibility, and their applicability in connection to private higher education.
15. Proposed indices for appropriate education fees.
16. Practical recommendations for the promotion of private sector role in establishing higher education institutes.
17. An applicable model for linking the characters of job market and development requirements to the academic programs offered in private higher education establishments, so that more job opportunities could result for graduates.
18. Scientific conclusions and recommendations required to build a long term strategic plan for private higher education, as part of the strategic plan for university education in the Kingdom.

## **7. Duration**

This study should be executed within 5 months from the contract signing date.

## Group (C) Studies: Professional Sectors Studies

### C-2. Female Higher Education

1. Introduction
2. Significance
3. Objectives
4. Scope and aspects
5. Requirements
6. Deliverables
7. Duration

#### Female Higher Education

##### 1. Introduction

Female Higher education represents a unique category within the higher education system of the Kingdom. That is the case due to the female higher education privacy, capabilities required, facilities, and output. Because of the comprehensiveness of issues in other parts of this study, more concentration should be bestowed here to the characteristics and special cases that distinguish female education from male education considering all prospects of higher education which are not discussed by other tracks of this study.

##### 2. Significance

Female higher education should be evaluated from a point of view that considers it in general as a unique issue. Uniqueness comes from female education specialty, issues, requirements, and reflections on the higher education system at large. The basic step in the process of female education quantitative and qualitative development should evolve from diagnosing the current and future prospects, defining the challenges and opportunities, pinpointing the weaknesses and strengths, and representing a vision for the future of demand and supply of graduates both currently and on the long term.

##### 3. Objectives

This study –in general- aims at shedding the light on the specific issues characterizing this category of education. The study should define the existing capabilities and foreseeing which is acceptable for the future in order to actively participate in preparing females to practice the jobs and meet their requirements with high levels of competency. In addition, this study should achieve a number of additional objectives, represented in the following:

1. Diagnosing female education's characterizing issues and evaluating their performance in light of active participation in female habitation in the context of her special role in the Kingdom.
2. Evaluating the existing capabilities of female education in connection to all related aspects namely: organizational, administrative, procedural, human and financial resources, effective variables, output compliance to development needs, academic and professional accreditation, weaknesses and strengths, and challenges and opportunities.
3. Developing means and mechanisms for comprehensive development of female education in order to promote the process of her habilitation in a manner that enables her to actively

and professionally participate in the development process, with considerable care to the special role played by women in the Kingdom.

4. Foreseeing the future role of woman participation in community development and her active participation under the Islamic Sharia'a laws in meeting job market demands as well as for private job initiatives. That should consider enhancing her role to eliminate weakening sides affecting full partnership in light of technical and social developments.
5. Proposing the required mechanisms and methodologies that should promote the effectiveness of graduate studies and scientific research in female education institutes. That should address these issues possible interaction horizons and integration areas both currently and in the future for better serving of development and educational processes.

#### **4. Scope and aspects**

The scope of this study and its aspects comprise the following:

1. Studying, evaluating, and looking into development opportunities of the internal efficiency of female higher education system in light of the existing situation and the future needed in terms of human resources, organization, infrastructure, and other effective parameters.
2. Studying, evaluating, and looking into development opportunities of the compliance of the output of female higher education system to current and future job market demands.
3. Evaluating the current position of training, rehabilitation, and continued education programs; and foreseeing opportunities for promoting the external efficiency of female higher education in light of the continuing enhancements of the role of women in the Kingdom's economic and social development.
4. Studying the quantitative and qualitative requirements of the job market to define the needed levels and majors of female higher education.
5. Reviewing and evaluating the effectiveness of laws, regulations, policies and financial resources of the female higher education system. That should include the development of all of these fields to promote the system and further enhance its effectiveness.
6. Reviewing and evaluating the processes of graduating teachers with a review of the infrastructure and organizational capabilities of the female higher education establishments.
7. Analyzing the effect of male and/or female management of female higher education; and evaluating the suitability of this issue in connection to the internal efficiency of the systems and the effect of that on the compliance with market demands.
8. Conducting an analytical study to evaluate the role of woman in the community and the private sector in accordance with Islamic Sharia'a laws and as stipulated by government guidelines. Strengths should be enhanced to eliminate weaknesses in this regard to meet technical, social, and economic developments.
9. Evaluating the effectiveness of graduate programs for female higher education; and exploring avenues for cooperation with similar programs for male higher education to broaden integration horizons both for now in the future.

10. Reviewing the academic and professional accreditation mechanisms; and looking into opportunities for their development in serving the educational and research processes.

## **5. Requirements**

The study requires making available data and information pertaining to the female higher education showing the influence of female secondary education and addressing the future ambitions and transformations that could affect the process as a result of social and economic developments, job market demands, and development needs. These data and information should be presented to Aafaq officials. These requirements should include:

1. Specifying in order of importance all the variables and parameters related to the specialty of female education.
2. Collecting the required information from the primary and secondary sources; and convening specializing related seminars, workshops, and brainstorming sessions.
3. Processing and analyzing the collected data to appraise the behavior and effect of the variables on this category of education; along with resulting projections of interest of this study.
4. Evaluating the existing self and competition situation through analytical and diagnostic reviews that will enable the isolation of causes for challenges, phenomena, directions, and compliance with development needs both for now and in the future.
5. Developing reference criteria and guidelines for comparison of the position of female higher education both internally and externally, and defining weaknesses and strengths, challenges and opportunities, importance order of strategic issues, and the strategic alternatives (with feasibility studies), to achieve periodical and strategic objectives of the long term higher education plan.
6. Developing standardized criteria for evaluating the suitability of the organizational hierarchy, infrastructure, resources, and the current educational process; and suggesting mechanisms for upgrading their respective efficiency and upgrading scientific and R&D activities.
7. Designing and proposing the referenced academic and professional accreditation processes.
8. Specifying means for the quantitative and qualitative development of female higher education.
9. Reviewing and analyzing international experiences in this field to extract the conclusions and determine what is applicable for the Kingdom's case.
10. Including total quality parameters and criteria in designing all aspects of this study.
11. Concluding scientific and practical outcomes of this study.

## **6. Deliverables**

This study should present a comprehensive report that includes the following:

1. An executive summary of the study.
2. A documentation of all reference information included in the study.
3. The results of analytical studies conducted on similar models from different countries, showing success and/or failure causes.
4. Highlights of the outcomes of meetings with focus groups, general seminars, brainstorming seminars, workshops, etc.
5. The results of studying and evaluating the possibilities of promoting the internal efficiency of female higher education and the comparison of that to similar systems in other countries, to enhance the efficiency of the system and to make its output compliant to development demands.
6. Defining the effective issues in female higher education and evaluating the efficacy of the educational environment and organizational means both currently and in the future.
7. Pinpointing strengths and weaknesses, available opportunities, diagnosed challenges, and the required success factors.
8. Predicting the directions of female higher education in the future in guidance of the features and capabilities of similar international systems.
9. Proposing mechanisms and applicable means for executing the options for the effective development of female higher education.
10. Determining the needed methods of execution, budgets, temporal plan, execution responsibilities, training requirements, changing demands, and other technical parameters that affect the performance of the admission and capacity operation.
11. Listings of guiding indices and evaluation criteria for female higher education with the means for academic and professional accreditation processes required for enhancing the quantitative and the qualitative content of female higher education in the Kingdom.
12. Proposals of various scenarios required to develop female higher education establishments in the Kingdom with specific reviews of important issues for discussion according to levels of importance. This approach should be associated with the required means for achievement of success and the required benchmarking procedures that define academic and professional accreditation criteria.
13. Strategic alternatives designed to achieve the objectives and purposes of the long term higher education plan, their feasibility, and their applicability in connection to female higher education.
14. Scientific conclusions and recommendations required to build a long term strategic plan for female higher education, as part of the strategic plan for university education in the kingdom.

## **7. Duration**

This study should be executed within 5 months from the contract signing date.

## Group (C) Studies: Professional Sectors Studies

### C-3. Health Education

1. **Introduction**
2. **Significance**
3. **Objectives**
4. **Scope and aspects**
5. **Requirements**
6. **Deliverables**
7. **Duration**

#### Health Education

##### 1. Introduction

Government bodies in charge of health care for citizens show utmost attention to health higher education, continually provide for promoting the effectiveness of its institutes and their compliance to external demands, and in parallel strive to offer the highest level of health care to the community. These efforts are realized through developing appropriate mechanisms aiming at promoting the level of health care cadres to meet both the demands of job market and the health care development process.

##### 2. Significance

This study earns its significance from the community's ever-increasing aspirations for adequate levels of high quality health care services, which in turn calls for high levels of health higher education.

##### 3. Objectives

This study –in general- aims at exploring the horizon for promoting the level of health higher education, and developing an appropriate mechanism for qualifying health care cadres that satisfy the requirements of the health care development process. In addition, this study should achieve a number of additional objectives, represented in the following:

1. Evaluating demand and supply levels for both health education and health care cadres.
2. Standardizing criteria for evaluating the internal effectiveness of university health education institutes and their compliance to the standards of job market.
3. Developing a model that links variables between the health higher education and job market.
4. Assessing the training and professional development organizations in the institutes of health higher education.
5. Defining the important parameters that suit the Kingdom from the experience of other countries in the field of health higher education.
6. Exploring feasible opportunities for the participation of private sector in establishing health higher education.

7. Proposing an organizational infrastructure that guarantees the success of a modern health higher education system.

#### 4. Scope and aspects

The scope of this study and its aspects comprise the following:

1. Defining the mission, vision, and objectives of health higher education.
2. Specifying categories of health education in both the professional and specialized fields, and setting their priorities and objectives. Such categories are: dentistry, pharmaceuticals, nutrition, natural treatment, laboratory technologies, clinical nursing, diagnostic technologies, etc.
3. Assessing job market needs of all qualifications of health care cadres both quantitatively and qualitatively.
4. Categorizing the characteristics of health professions as required by the market and measuring the possible response of health higher education to provide the requirement in reference to the local and international trends both currently and in the future. This should address issues like exploring new job characteristics for the future and the possibility of marketing such to the job market to meet development plans stipulations.
5. Evaluating academic programs in health higher education, measuring their capability to qualify health care cadres for occupying offered jobs, and assessing their effectiveness and utility in reference to the requirement.
6. Conducting studies for developing standards and criteria to evaluate the compliance of health higher education institutes to the required levels of professionalism from the following aspects: quality, versatility, adaptability to the advances in the health field and meeting market expectations, professional level of graduates, and compliance to the ever-developing trends of practicing the profession both now and in the future.
7. Conducting studies for selecting appropriate guidelines and standardized criteria for utilization in evaluating the internal efficiency of existing and planned health higher education institutes and units, including: admission capacity, admission policies considering student levels and job market demands, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, health education graduate studies, health scientific research, management systems, organizational hierarchy, auditing, scientific and technical environment, infrastructure and support services, compensation and salary scales, currently applied incentive rates and the required levels of compensation, moral of human resources, and productivity of employees.
8. Evaluating the systems adopted by faculties and management teams for training and professional development, and the means to broaden resources for institutes and units under the health higher education.
9. Exploring avenues for tele-medicine and developing the required human resources.
10. Conducting a study to isolate challenges and negativity of the health higher

education and defining their causes, in addition to determining the gap between internal efficiency and the compliance with job market needs, and the means to eliminate it.

11. Reviewing and analyzing international experiences in the field of health higher studies to extract the conclusions and determine what is applicable for the Kingdom's case.
12. Evaluating the effectiveness and validity of continuing health education, remote health training, support health care cadres training programs such as nursing, laboratory, and diagnostic ray specialists, and assessing their capability for the promotion of health education in order to broaden its role in serving development and the community.

## 5. Requirements

The study requires making available data and information pertaining to the existing health higher education system showing weaknesses and strengths the influence of female secondary education and addressing the future ambitions and transformations that could positively affect the compliance with job market demands, and development needs. These requirements should include:

1. Specifying in order of importance all the variables and parameters related to the health higher education.
2. Collecting the required information from the primary and secondary sources.
3. Processing and analyzing the collected data to appraise the behavior and effect of the variables on health higher education; along with resulting projections of interest of this study.
4. Reviewing and proposing the means required to upgrade the level of internal efficiency in the health higher education system.
5. Modeling the links between job market demands and the quality of health higher education; and defining the required parameters for planning and designing the appropriate programs and curricula.
6. Executing analytical and diagnostic studies reviewing the existing situation as well as the projected demands of the health higher education. The particulars reviewed should include: admission capacity, admission policies, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, management systems, etc. The purpose of these reviews is to isolate causes for challenges, phenomena, directions, and compliance with development needs both for now and in the future.
7. Analyzing similar health higher education systems in other countries that succeeded in synchronizing the offered training programs to the requirements of practicing the profession in fulfillment of job natures. The analysis should be augmented with standardized criteria for evaluating the compliance of the health higher education system with job market demands, and defining strengths and weaknesses, challenges, issues, and feasible strategies.
8. Forecasting trends of health education indices for the future in connection to job

market and development needs, with a survey of successful experiences in this field in other nations.

9. Devising a mechanism and proposing execution means that guarantee the quantitative and qualitative close coordination between demand and supply from one side and the programs and output of health education from the other. That should also consider the current and expected requirements of the job market.
  10. Investigating the role of private sector investment in the areas of vocational and specialized health education through colleges and training centers; and the means to support them and the conditions for accreditation.
  11. Reviewing the development of hospital education programs for effective participation in training efforts, and the role of privately owned hospitals in broadening the base of specialized and coordinated health training.
  12. Exploring avenues of undertaking scientific research in health related sciences; and enhancing the role of scientific research in developing health education and upgrading its compliance with the established standards of practicing the associated profession.
  13. Reviewing and proposing means for raising the role of training in the technical development of health cadres in the Kingdom; and expanding the role of health colleges through the upgrading of levels of its interaction in the quantitative and qualitative development of human resources working in health care services.
  14. Defining evaluation criteria with reference to total quality standards for human and financial resources, management, policies, students, curricula, majors, training, incentives system, academic advising, and professional accreditation.
  15. Proposing the organizational hierarchy and infrastructure necessary to guarantee the effectiveness of health higher education system.
  16. Adapting a mechanism for evaluation, professional accreditation, and academic supervision.
  17. Extracting scientific and subjective conclusions; presenting applicable recommendations, and presenting the report.
6. Deliverables

This study should present a comprehensive report that includes the following:

1. An executive summary of the study.
2. A documentation of all reference information included in the study.
3. The conclusions of the study comprehensively analyzed to satisfy the general and specified objectives of the study.
4. The results of analytical studies conducted on similar models from different countries, showing success and/or failure causes.
5. Description of the required organizational structure and infrastructure of health higher education institutes in the Kingdom for both currently and in the future. The

description should pinpoint strengths and weaknesses, available opportunities, diagnosed challenges, and the required success factors.

6. Means to upgrade the internal and external efficacy of the health higher education system and its compliance to development needs.
  7. Mechanisms for comprehensive development of health higher education systems.
  8. Academic and professional accreditation criteria.
  9. Continuing health higher education upgrading mechanisms.
  10. Means for enhancing the role of private sector investment in health higher education.
  11. Proposals of various scenarios required to develop health higher education establishments in the Kingdom with specific reviews of important issues for discussion according to levels of importance; and strategic alternatives designed to achieve the objectives and purposes of the long-term higher education plan, their feasibility, and their applicability in connection to health higher education.
  12. Models, criteria, forecasts, and trends of health education fields both locally and internationally.
  13. Scientific conclusions and recommendations required to build a long term strategic plan for health higher education, as part of the strategic plan for university education in the Kingdom.
  14. Determining the needed methods of execution, budgets, temporal plan, execution responsibilities, training requirements, changing demands, and other technical parameters that affect the performance of the admission and capacity operation.
  15. Specifying a system for monitoring, control, benchmarking, and standardized indices.
7. Duration

This study should be executed within 5 months from the contract signing date.

## Group (C) Studies: Professional Sectors Studies

### C-4 Engineering Education

1. Introduction
2. Significance
3. Objectives
4. Scope and aspects
5. Requirements
6. Deliverables
7. Duration

#### Engineering Education

##### 1. Introduction

Well-established engineering higher education is considered to be one of the most important requirements for modern technological development. Developing an appropriate mechanism for the preparation of technically qualified cadres from the output of engineering education to satisfy the demands of development is, therefore, a critical challenge that faces higher education systems.

##### 2. Significance

There exists a gap that continues to enlarge between the scientific knowledge and technical skills required to develop engineering human resources and those requirements characterizing the practicing of the engineering profession to fulfill the demands of modern development processes. Subsequently, the engineering education study becomes of high significance in terms of its objectives that aim at bridging this gap between the currently available engineering qualifications and the required levels. These objectives should be achieved by developing a mechanism that will enable the promotion of training engineering cadres to the levels stipulated by job market, to guarantee the compliance of engineering education outputs with the rules of practicing the profession and the satisfaction of current and future development demands.

##### 3. Objectives

This study –in general- aims at developing a mechanism for qualifying engineering cadres that quantitatively and qualitatively satisfy the requirements of the job market and the development process. All of that should be presented in light of current and future changing requirements of development as a result of technological advances. In addition, this study should achieve a number of additional objectives, represented in the following:

1. Defining the current requirements of job market; and exploring the future demands of development process from the engineering disciplines.
2. Evaluating the compliance of engineering higher education with job market demands.
3. Evaluating the internal and external efficacious of the engineering higher education system.

4. Developing a model to link job market and engineering higher education.
  5. Evaluating the methodologies applied for scientific research in engineering science disciplines.
  6. Assessing professional development schemes in engineering higher education establishments.
  7. Defining the important parameters that suit the Kingdom from the experience of other countries in the field of health higher education.
  8. Evaluating success levels achieved by the application of business incubators, science parks, and professional guidance in the areas of promoting engineering education and satisfying requirements of development processes.
4. Scope and aspects

The scope of this study and its aspects comprise the following:

1. Defining the mission, vision, and short-term and strategic objectives of engineering higher education, to guarantee qualifying engineering cadres equipped with necessary knowledge and skills that satisfy the requirements for practicing the engineering profession.
2. Studying and evaluating the job market to specify demand and supply levels for engineering education, and the compliance of various engineering education programs to fulfill the quantitative and qualitative requirements of the job market and the professional practicing of engineering.
3. Developing standards and criteria to evaluate the needs of the job market to determine its requirements of professions, skills, and training levels, in reference to the local and international trends both currently and in the future. This should address issues like exploring new job characteristics for the future and the possibility of marketing such to the job market to meet development plans stipulations.
4. Studying and evaluating engineering education academic programs and determining their adequacy, feasibility, and satisfaction of profession practicing standards in connection to the quantitative and qualitative skills required by the job market.
5. Conducting studies for developing standards and criteria to evaluate the compliance of engineering higher education institutes to the required levels of professionalism from the following aspects: quality, versatility, adaptability to the advances in the engineering field and meeting market expectations, professional level of graduates, and compliance to the ever-developing trends of practicing the profession both now and in the future.
6. Conducting studies for selecting appropriate guidelines and standardized criteria for utilization in evaluating the internal efficiency of existing and planned engineering higher education institutes and units, including: admission capacity, admission policies considering student levels and job market demands, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, engineering education graduate studies, engineering scientific research, management systems, organizational hierarchy, auditing, scientific and technical environment, infrastructure and support services, compensation and salary scales, currently applied incentive rates and the required

levels of compensation, morale of human resources, and productivity of employees.

7. Evaluating the systems adopted by faculties and management teams for training and professional development, and the means to broaden resources for institutes and units under the engineering higher education.
  8. Conducting a study to isolate challenges and negativity of the engineering higher education and defining their causes, in addition to determining the gap between internal efficiency and the compliance with job market needs, and the means to eliminate it.
  9. Reviewing and analyzing international experiences in the field of engineering higher studies to extract the conclusions and determine what is applicable for the Kingdom's case.
  10. Evaluating success levels achieved by the application of business incubators, science parks, and professional guidance in the areas of promoting engineering education and satisfying requirements of development processes.
5. Requirements

The study requires making available data and information pertaining to the existing engineering higher education system showing weaknesses, strengths and challenges that face this discipline of education and affect its quantitative and qualitative development.

These requirements should include:

1. Specifying in order of importance all the variables and parameters related to the engineering higher education.
2. Collecting the required information from the primary and secondary sources.
3. Processing and analyzing the collected data to appraise the behavior and effect of the variables on engineering higher education; along with resulting projections of interest of this study.
4. Developing the means required the internal efficiency of the engineering higher education system.
5. Reviewing and evaluating admission policies, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, management systems, etc.
6. Modeling the links between job market demands and the quality of engineering higher education; and defining the required parameters for planning and designing the appropriate programs and curricula.
7. Reviewing the various effective parameters affecting the current situation of engineering higher education to isolate causes for challenges, phenomena, directions, and compliance with development needs both for now and in the future.
8. Conducting evaluative analysis for the education process to realize the level of interaction with the requirements of the job market in light of standardized criteria and according to established guidelines in the field. That should also address

weaknesses, strengths, challenges, opportunities, issues, and the Kingdom's available strategic options and their applicability and feasibility.

9. Forecasting trends of engineering education indices for the future in connection to job market and development needs, with a survey of successful experiences in this field in other nations.
  10. Evaluating means and disciplines for scientific research and in particular the applied research in the engineering fields; and enhancing its role in developing engineering education.
  11. Forecasting trends of engineering education indices for the future in connection to job market and development needs, with a survey of successful experiences in this field in other nations.
  12. Defining evaluation criteria with reference to total quality standards for human and financial resources, management, policies, students, curricula, majors, training, incentives system, academic advising, and professional accreditation.
  13. Proposing the organizational hierarchy and infrastructure necessary to guarantee the effectiveness of engineering higher education system.
  14. Adapting a mechanism for evaluation, professional accreditation, and academic supervision.
  15. Extracting scientific and subjective conclusions; presenting applicable recommendations, and presenting the report.
6. Deliverables

This study should present a comprehensive report that includes the following:

1. An executive summary of the study.
2. A documentation of all reference information included in the study.
3. The conclusions of the study comprehensively analyzed to satisfy the general and specified objectives of the study.
4. The results of analytical studies conducted on similar models from different countries, showing success and/or failure causes.
5. Description of the required organizational structure and infrastructure of private higher education institutes in the Kingdom for both currently and in the future. The description should pinpoint strengths and weaknesses, available opportunities, diagnosed challenges, and the required success factors.
6. Means to upgrade the internal and external efficacy of the engineering higher education system and its compliance to development needs.
7. Mechanisms for comprehensive development of engineering higher education systems.
8. Proposing means for enhancing the level and quality for continuing engineering higher education as well as for other objectives of this study.

9. Proposals of various scenarios required to develop engineering higher education establishments in the Kingdom with specific reviews of important issues for discussion according to levels of importance; and strategic alternatives designed to achieve the objectives and purposes of the long-term higher education plan, their feasibility, and their applicability in connection to engineering higher education.
  10. Models, criteria, forecasts, and trends of engineering education fields both locally and internationally.
  11. Scientific conclusions and recommendations required to build a long term strategic plan for engineering higher education, as part of the strategic plan for university education in the Kingdom.
  12. Determining the needed methods of execution, budgets, temporal plan, execution responsibilities, training requirements, changing demands, and other technical parameters that affect the performance of the admission and capacity operation.
  13. Specifying a system for monitoring, control, benchmarking, and standardized indices.
7. Duration

This study should be executed within 5 months from the contract signing date.

## C-5 Pedagogical Education

1. Introduction
2. Significance
3. Objectives
4. Scope and aspects
5. Requirements
6. Deliverables
7. Duration

### Pedagogical Education

#### 1. Introduction

Pedagogical higher education is substantially charged with the mission of preparing cadres qualified to lead the Kingdom's processes of broad development. Pedagogical education provides students with the necessary scientific knowledge, technical expertise, human interaction skills, and analytical abilities, to enable them handle materialistic instruments in a manner that explores their avenues, capabilities, and energies that affect technological, social, and cultural development processes.

#### 2. Significance

This study shall evaluate the experience of pedagogical education in the Kingdom. This evaluation shall include the contents, approaches, and the expected results in order to develop the compliance level of pedagogical education to meet the requirements of both the educational and pedagogical processes; and to formulate an appropriate mechanism for the preparation of qualified graduates that satisfy job market and development process demands.

#### 3. Objectives

This study –in general- aims at developing applicable scientific methodologies for preparing pedagogical education outputs as stipulated by the stakeholders of the field of education and pedagogy that satisfy the levels required by human development within the context of the Kingdom's comprehensive development process. In addition, this study should achieve a number of additional objectives, represented in the following:

1. Evaluating the existing position of pedagogical education in the establishments of higher education in order to identify the pertaining factors, strengths, weaknesses, challenges, and issues.
2. Evaluating real market demands of pedagogical education specialties, knowledge levels, and proficiency standings.
3. Establishing an adequate mechanism that synchronizes the outputs of pedagogical education to generate specialists fulfilling the requirements of the pedagogy job market; and developing another mechanism that guarantees the promotion of these specialists to the levels demanded by the comprehensive development process.

4. Identify the specific development needs of pedagogical education professionals for the coming 25 years.
4. Scope and aspects

The scope of this study and its aspects comprise the following:

1. Defining the mission, vision, and short-term and strategic objectives of pedagogical education.
2. Evaluating the effectiveness of the vocational specialized pedagogical education from aspects dealing with its involvement in education and pedagogic areas as well as providing the students with high levels of communication skills.
3. Forecasting job market demands of male and female teachers and educators, levels of demand and supply both now and in the future, and quantitative and qualitative requirements.
4. Investigating labor market characteristics; defining its skills, professional, and training requirements; exploring local and international trends; estimating numbers for job opportunities; and discussing job marketing opportunities.
5. Studying and evaluating pedagogical education academic programs and determining their adequacy, feasibility, and satisfaction of profession practicing standards in connection to the quantitative and qualitative skills required by the job market.
6. Conducting studies for developing standards and criteria to evaluate the compliance of pedagogical higher education institutes to the required levels of professionalism from the following aspects: quality, versatility, adaptability to the advances in the engineering field and meeting market expectations, professional level of graduates, and compliance to the ever-developing trends of practicing the profession both now and in the future.
7. Conducting studies for selecting appropriate guidelines and standardized criteria for utilization in evaluating the internal efficiency of existing and planned pedagogical higher education institutes and units, including: admission capacity, admission policies considering student levels and job market demands, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, engineering education graduate studies, engineering scientific research, management systems, organizational hierarchy, auditing, scientific and technical environment, infrastructure and support services, compensation and salary scales, currently applied incentive rates and the required levels of compensation, morale of human resources, and productivity of employees.
8. Evaluating the systems adopted by faculties and management teams for training and professional development, and the means to broaden resources for institutes and units under the pedagogical higher education.
9. Investigating opportunities for the application of information technology in management processes and databases linking among all fronts of pedagogical higher education organizations; developing a relevant relationship between these organizations and other establishments of the higher education system.

10. Conducting a study to seclude challenges and negativity of pedagogical higher education and defining their causes, in addition to determining the gap between internal efficiency and the compliance with job market needs, and the means to eliminate it.
11. Reviewing and analyzing international experiences in the field of pedagogical higher studies to extract the conclusions and determine what is applicable for the Kingdom's case.
12. Evaluating success levels achieved by the application of business incubators, science parks, and professional guidance in the areas of promoting pedagogical education and satisfying requirements of development processes.

## 5. Requirements

The study requires making available data and information pertaining to the existing pedagogical higher education system showing weaknesses, strengths and challenges that face this discipline of education and affect its quantitative and qualitative development.

These requirements should include:

1. Specifying in order of importance all the variables and parameters related to the pedagogical higher education; and characterizing job market professional skills requirements as well as academic programs and the generated outputs.
2. Collecting the required information from the primary and secondary sources.
3. Processing and analyzing the collected data to appraise the behavior and effect of the variables on pedagogical higher education; along with resulting projections of interest of this study.
4. Developing the means required the internal efficiency of the pedagogical higher education system.
5. Modeling the links between job market demands and the quality of pedagogical higher education; and defining the required parameters for planning and designing the appropriate programs and curricula.
6. Reviewing and evaluating admission policies, financing, curriculum and academic programs, majors planning and developing, academic advising, effectiveness of educational processes, educational technologies, quality of tutoring methods, training programs, management systems, etc.
7. Reviewing the various effective parameters affecting the current situation of pedagogical higher education to isolate causes for challenges, phenomena, directions, and compliance with development needs both for now and in the future.
8. Conducting evaluative analysis for the education process to realize the level of interaction with the requirements of the job market in light of standardized criteria and according to established guidelines in the field. That should also address weaknesses, strengths, challenges, opportunities, issues, and the Kingdom's available strategic options and their applicability and feasibility.
9. Forecasting trends of pedagogical education indices for the future in connection to

job market and development needs, with a survey of successful experiences in this field in other nations.

10. Proposing mechanisms and evaluation procedures that guarantee close coordination between demand and supply factors from both quantitative and qualitative points of view in addition to the features of academic and training programs, and to guarantee satisfying demands of the job market and the development processes.
  11. Investigating the opportunities of private sector involvement in investing in the field of pedagogical vocational education through establishing specialized institutes; and exploring the means for supporting these institutes and their accreditation conditions.
  12. Evaluating means and disciplines for scientific research in the pedagogical higher education fields; and enhancing its role in developing engineering education.
  13. Studying the opportunities of benefiting from broadening the role of training in developing the human resources working in the fields of pedagogy; and proposing the most appropriate to enhance the role of pedagogical higher education in developing the human resources working in the field.
  14. Defining evaluation criteria with reference to total quality standards for human and financial resources, management, policies, students, curricula, majors, training, incentives system, academic advising, and professional accreditation.
  15. Proposing the organizational hierarchy and infrastructure necessary to guarantee the effectiveness of pedagogical higher education system.
  16. Adapting a mechanism for evaluation, professional accreditation, and academic supervision.
  17. Extracting scientific and subjective conclusions; presenting applicable recommendations, and presenting the report.
6. Deliverables

This study should present a comprehensive report that includes the following:

1. An executive summary of the study.
2. A documentation of all reference information included in the study.
3. The conclusions of studies and analyses concerning the current position of pedagogical higher education, the local-international comparative studies, current and future developments, forecasts, and the relationship between pedagogical education from one side and development planning and community problems from the other.
4. Specifying the obstacles and difficulties that hinder the processes of pedagogical education.
5. Specifying job market quantitative and qualitative requirements of specialties from pedagogical education for both the short and long terms.
6. Proposing the mechanisms and plans necessary to synchronize the outputs of pedagogical education to the requirements of job market; and to promote the quality

levels of these outputs to the levels required.

7. A comprehensive analysis of the results of the study for the purpose of figuring out the conclusions and the most appropriate options for the category of pedagogical education within the higher education system.
  8. Means to upgrade the internal and external efficacy of the engineering higher education system and its compliance to development needs.
  9. Proposals of various scenarios required to develop pedagogical higher education establishments in the Kingdom with specific reviews of important issues for discussion according to levels of importance.
  10. Strategic alternatives designed to achieve the objectives and purposes of the long-term higher education plan, their feasibility, and their applicability in connection to pedagogical higher education.
  11. Mechanisms for comprehensive development of pedagogical higher education systems and proposing means for enhancing the level and quality for pedagogical higher education as well as for other objectives of this study.
  12. Determining the needed methods of execution, budgets, temporal plan, execution responsibilities, training requirements, changing demands, and other technical parameters that affect the performance of the admission and capacity operation.
  13. Specifying a system for monitoring, control, benchmarking, and standardized indices.
  14. Conclusions and recommendations.
7. Duration

This study should be executed within 5 months from the contract signing date.