

## Executive Summary

This report responds to an invitation by the Government of Egypt to the World Bank and the Organisation for Economic Co-operation and Development (OECD) jointly to conduct an independent review of the nation's higher education system and to offer advice on its future development.<sup>1</sup>

### A. Main messages

#### *The imperative for higher education reform*

The Egyptian higher system is not serving the country's current needs well, and without far-reaching reform it will hold back Egypt's economic and social progress.

To build and modernise the nation, the Government of Egypt has driven major reforms in macro-economic policy to attract foreign direct investment, monetary policy including floating the Egyptian pound, taxation reform, trade liberalisation including tariff reductions and international trade agreements, and public sector reform including privatisation of state-owned enterprises.

The higher education system remains unreconstructed in this context. It continues to produce largely for the economy of the past, and community expectations of it reflect outdated understandings of its role.

There is an imperative for fundamental reform of the Egyptian higher education system. This imperative arises from the combination of emerging pressures and accumulated dysfunctions.

The pressures arise from the need for Egypt to:

- improve its competitiveness in the global knowledge-based economy, where other countries are intensifying their investments in human capital and knowledge production;

- provide appropriately for a larger and more diversified student population; and
- reduce social inequalities arising from differences in educational opportunity.

The dysfunctions include:

- narrow access and limited opportunities for students;
- poor quality of educational inputs and processes;
- deficiencies and imbalances in graduate output relative to labour market requirements; and
- under-developed university research capability and linkages to the national innovation system.

The imperative demands decisive action to improve policy coherence, institutional responsiveness and system cost-effectiveness.

In particular, action needs to be directed to:

- reducing structural rigidities in the higher education system;
- improving national steering and co-ordination;
- widening choices for students;
- increasing the capacity and flexibility of higher education institutions within a more diversified system;
- improving the availability of information to guide student choice; and
- financing the system more equitably and efficiently, in a sustainable way.

The Government of Egypt already has embarked on a range of reform initiatives to improve higher education operations. The OECD/World Bank review panel commends the Government for its considerable efforts. However, in several areas where substantive reform is required, the approach being adopted focuses mainly on procedural change, and it is not evident that commitment exceeds compliance. Greater attention needs to be given to structural reform, changing the institutional culture and increasing the capacity of the system to contribute to the realisation of national goals. Successful reform of higher education also requires ongoing improvement in the quality and effectiveness of primary and secondary schooling.

## ***Directions for higher education reform***

The review panel has identified ten main directions for reform of Egypt's higher education system:

### ***1. Clarify the expected capabilities of graduates***

Students, educational institutions and employers all need clearer signals about the purpose of higher education, the meaning of educational qualifications, and the standards of graduate achievement. New approaches to teaching and learning are required to develop employability skills. It is necessary to develop qualifications descriptors and pathways for individuals to build their levels of educational attainment progressively.

### ***2. Improve the balance of graduate output to fit labour market needs***

Higher education needs to become more relevant to Egypt's contemporary circumstances. This requires:

- a more balanced supply of graduates of university and technical and vocational education with a view to increasing the proportion of graduates with practical skills relevant to labour market needs;
- wider opportunities for students to undertake studies that can lead to employment;
- greater discretion for institutions to offer courses in response to student demand having regard to labour market opportunities;
- engagement with employers and professional bodies in designing and evaluating courses;
- timely information about labour market supply and demand; and
- professional careers advice to help students and parents make informed educational choices.

### ***3. Strengthen national steering capacity***

There is a need for greater clarity of the respective roles of different higher education institutions, and an ability to steer the development of a co-ordinated system. Steps need to be taken to achieve a more effective balance between institutional self-regulation and overall public control of the scale, structure, quality and cost of Egypt's higher education system.

### ***4. Diversify the supply of higher education opportunities to meet a larger student body with varying needs, aptitudes and motivations***

Structural reform needs to broaden the base for the participation of new groups of students especially through the modernisation of technical and

vocational education, the expansion of private provision and greater use of on-line and mixed mode learning. There is scope also for niche offerings, including foreign higher education institutions, along with corporate and vendor providers of certificated learning.

Currently, the technical and vocational education and training (TVET) system is very weak and poorly regarded by Egyptian society, and is an unattractive alternative in its present form. A priority is to renew the TVET system, including enhancing the status of TVET qualifications, upgrading facilities, and marketing the value of technical skills to the community.

Additionally, private higher education needs to be expanded to complement public efforts to cater for the planned enrolment growth.

#### ***5. Increase institutional operating flexibility and self-management capacity***

Egypt might move progressively to a more diverse, student-driven system of higher education, where students can exercise choice over where and what they study, and institutions can exercise autonomy in the admission of students, reflecting their missions and capacities. The Government, while maintaining control over the total number of higher education enrolments at the system and institutional levels through an enrolment-based funding formula, could permit individual institutions to determine the mix of their enrolments across fields of study.

To align Egyptian universities with their international counterparts, public universities with the status of a public corporation might be governed by a Board of Trustees with authority to oversee their academic and operational affairs according to their agreed mission and subject to appropriate accountabilities.

#### ***6. Share costs more equitably***

The cost burden of higher education provision falls disproportionately on the Government and general taxpayers, while those who benefit the most do not pay their fair share of the costs. Few countries have been able to expand their higher education system while at the same time raising its quality without requiring a significant contribution from students and their families. To support its development objectives, the Government of Egypt needs a sustainable funding strategy for higher education. Such a strategy might have five elements:

- i. increased public investment;
- ii. diversification of institutional revenues through greater cost-sharing;
- iii. private sector expansion;

- iv. enrolment growth in the TVET sector; and
- v. wider use of new delivery technologies.

Efficiencies might also be found by reducing rates of repeat learning. Increases in tuition costs would need to be accompanied by scholarships and loans for students.

### ***7. Widen admission criteria to recognise diverse potential***

Total reliance on the secondary school leaving examination (*Thanaweya Amma*) as the sole basis for admission to higher education limits opportunities for many students. Examination results may reflect differences in family circumstances, school quality and access to private tutoring. However, the *Thanaweya Amma* has the important advantage of being transparent.

Consideration might be given to expanding the criteria for student access to higher education by developing initially a test of generic reasoning and thinking skills to complement the national secondary school examinations. Students could also benefit from being able to express multiple preferences in their applications for higher education admission, including by programme and institution.

### ***8. Raise input quality and embed quality assurance as an institutional responsibility***

To improve the quality of teaching and learning, the poor physical condition of the nation's higher education institutions requires a major capital injection. Additionally, public institutions need to develop their capacity for responsible self-management, including monitoring and reviewing the quality of their programmes. Particular effort needs to be directed to the adoption of performance-based management practices, and professional development of faculty and staff.

### ***9. Strengthen university research capacity and its links to innovation***

To identify areas for future investment and inter-institutional collaboration, it would be useful to map the research strengths of public universities. Subsequently, a select number of universities, or faculties or centres within them, might be invited to apply through a competitive programme to establish graduate schools or research clusters in designated fields where Egypt seeks to build its capacity.

### ***10. Build a number of leading exemplars***

Managing the transition from old to new ways will require leadership and experimentation. Other countries have found it useful to trial innovations as demonstration projects before they are more widely adopted.

In Egypt, such trials might include: development of diverse admissions criteria; funding of enrolments by field of study, with institutions having flexibility to respond to student demand; developing student mobility agreements; curriculum renewal involving employers and professional bodies; and a competitive process for the establishment of a select number of graduate schools.

## **B. Context**

### *Egyptian context*

Egypt occupies a unique geopolitical position arising from its location, size and history. Its relatively youthful population and diversified economic base underpin Egypt's future opportunities.

Egypt's population at the 2006 census was 73 million. Over 97% of the country's population is settled in the narrow strip of the Nile Valley and in the Nile Delta, just 5% of Egypt's total land mass.

Some 23 million (31.7%) of Egypt's population are under the age of 15 years. The youth share of the population has fallen from 40% in 1990.

Egypt's gross domestic product (GDP) per capita in 2007 was USD 1 769.6 (United Nations Statistics Division). There are wide socio-economic disparities across regions.

Since the early 1990s, Egypt has been managing a major transition from a state-controlled economy to a model of internationally-integrated competitive development. Concurrently, Egypt has advanced steadily in achieving the Millennium Development Goals related to water and sanitation, infant and child mortality and maternal mortality.

On the 2007 Global Competitiveness Index, Egypt ranked 65<sup>th</sup> out of 128 countries and 4<sup>th</sup> out of 48 countries at the same stage of development. In relation to doing business in Egypt, the third most serious problem identified, after access to finance and inefficiency of bureaucracy, was an inadequately educated workforce. Higher education and training, technological readiness and innovation were identified as competitive disadvantages for Egypt.

In 2005-06, the distribution of formal employment across industry sectors was estimated to be 45% for services, 27% for agriculture, 13% for energy and 15% for all others. The agricultural share of employment has fallen from 40% in 1996.

In the decade from 1988 to 1998 employment in the government sector (civil service and public enterprises) grew at twice the rate of growth of overall employment. In contrast, over the period from 1998 to 2006, public enterprise employment declined and the bulk of employment growth occurred in the private sector, which only accounted for 10% of total formal employment in 2006.

However, overall employment growth was insufficient to absorb new entrants to the workforce (100 000 annually) and informal employment rose to 61% of all employment in 2006 (Assaad, 2007). University graduates, alone among educated entrants to the labour market, experienced an increase in unemployment between 1998 and 2006 (Zaytoun, 2008).

Basic education covers nine years from age of six (primary six years and preparatory three years). After grade 9, students are tracked into either general secondary or technical secondary schools. Broadly 40% of a student cohort tracks into the general secondary strand and 60% into the technical secondary strand.

Technical secondary education has two strands: the first provides technical education in three-year schools; the second provides more advanced technical education in five-year schools.

General secondary schooling of three years prepares students for higher education, access to which is through the highly competitive *Thanaweya Amma* school leaving examination.

Higher education includes public and private technical colleges and universities. Technical colleges offer two-year programmes leading to a Diploma. Universities offer programmes of at least four years leading to a Bachelor's degree, as well as graduate degrees.

The net enrolment rate in primary education increased from 83.7% in 1985 to 98.3% in 2003. Gross enrolment rates in secondary school rose from 61.4% to 87.1% over the same period, while higher education enrolment rates rose from 18.1% to 32.6% (World Bank, 2006).

In 2007-08, some 78% of higher education enrolments were in public universities.

### ***Purpose of the review***

Many countries recently have opened their higher education systems to external scrutiny as a means of identifying strengths and weaknesses that internal observers may overlook, and as a source of fresh ideas and critical reflection. The process of preparing for external reviews, in addition to the resulting report, can give impetus to needed reform.

An international panel of examiners with relevant expertise was appointed in 2008 to conduct the review. They benefited from interactions with students and staff of various higher education institutions throughout Egypt and from information provided by government agencies. Observations about current circumstances and proposals for change reflect the views of the panel members.

Many of the problems facing the higher education sector and the national innovation system are understood by Egyptian policy makers, and the Government of Egypt, in consultation with concerned parties, has been taking concrete steps to improve the operation of the higher education system. Notable initiatives include:

- measures to improve the quality of basic and secondary education, including recognition of the importance of quality teachers and quality teaching;
- doubling the funding for Higher Education under the Five-year Plan, 2007;
- formation of the Higher Council for Science and Technology (S&T), the S&T Development Fund, and the Technology Transfer Centres Network;
- consolidation of technical colleges and rationalisation of programmes;
- establishment of more robust arrangements for institutional accreditation and for institutional and programme quality assurance, including the establishment of the National Authority for Quality Assurance and Accreditation of Education; and
- several years of successful experience with competitive funding for performance improvement.

For its part, the Government of Egypt appears willing to take further steps towards devolution of responsibilities and increased use of performance-based funding mechanisms to stimulate wider reform. Energy for reform is also evident among a number of Egypt's higher education institutions. And there are community pressures for change, not least from students and employers.

## C. Consideration of the issues

### *Labour market demand for higher education graduates*

In consultations with government agencies, employers, education institutions and students, the review panel was advised that:

- there is a chronic over-supply of university graduates, especially in the humanities and social sciences;
- there are shortages of below-university qualified, skilled personnel;
- university graduates fail to obtain employment in their fields of study;
- employers claim to seek graduates who have more than technical subject knowledge but also “soft skills” of communication, team work, problem solving, reliability, and adaptability;
- university students are dissatisfied that they do not develop practical skills; and
- many graduates seek to work overseas as a means of gaining practical experience and income.

Data deficiencies defy proper analysis of the supply-demand balances, including the extent to which degree graduates are shunting those with a lower level qualification from employment. A variety of factors are working together to compound the confusion, including: the transition of the employment base from a high level of reliance on public sector activity to greater market exposure; cultural attitudes favouring particular educational qualifications and occupations; lack of informed career advisory services for students; lack of follow-up surveys of graduate destinations; limited analysis of rates of return to graduates; and the absence of structured employer engagement with higher education institutions.

The lack of balance and fit in graduate supply to the labour market is at the core of Egypt’s challenge, not just for university education but for all forms of higher education and for secondary education, including notably technical and vocational education and training which spans both the secondary and tertiary sectors. What needs to be addressed is not only the horizontal dimension of the mismatch – the skewed pattern of student enrolment by field of study – but also the vertical dimension – the disproportionate valuing of university education over other types of higher education, with all its associated economic and personal costs.

### ***Student demand for higher education***

Demand for higher education is continuing to expand. On the basis of the population projections of the Central Agency for Public Mobilisation and Statistics (CAPMAS), and assuming a rise in higher education participation from 28% to 35% over 2006-2021, consistent with the Government's plan, some 1.1 million additional participants will need to be accommodated at an average growth rate of 3% per year (73 300) over fifteen years. Concurrently, the percentage of the working age population (between 15-64 years) is projected to rise from 55% in 2007 to 67% in 2020. Increasing attention will need to be given to adult workforce skills development as a source of productivity improvement.

Additionally, recent (post 2006 census) population estimates indicate resurgence in fertility, adding to the flow of young people entering schooling from 2012. Hence, a further youth surge is projected to flow through to higher education from 2024.

Importantly, the next decade (2010-20) presents a window of opportunity for Egypt to build a more appropriate platform for accommodating growth in the youth population and their higher education participation, while developing new ways and means of meeting the varying needs of adult learners.

Cost-effective enlargement in participation, through the lower average student unit cost of shorter-cycle programmes and efficient delivery modes, would enable the enlargement to occur principally through the modernisation of technical and vocational education to make it a quality option, the expansion of private provision, and greater use of on-line and mixed mode learning. This opportunity sets the framework for many of the recommendations of the review panel, as outlined below.

### ***Recommendation for the general direction of reform***

1. Egypt might take advantage of the demographic window of opportunity over the next decade, in the context of economic restructuring, to construct a more appropriate platform for accommodating growth in the youth population and their higher education participation, while developing new ways and means of meeting the varying needs of adult learners. Particular consideration might be given to the following aspects:

- a. Structural reform needs to broaden the base for the participation of new cohorts especially through the modernisation of technical and vocational education, the expansion of private provision and greater use of on-line and mixed mode learning.

- b. Attention should be given during this transitional period to improving the quality and labour market relevance of university education (rather than over-expanding quantitatively), differentiating institutional profiles to achieve distinctive missions, and building the capacity of universities to manage themselves in a more self-reliant way.
- c. Significant attention should be given to improving the quality, relevance and status of technical and vocational education and training at both the secondary and tertiary levels, with the explicit purpose of greatly expanding enrolments in post-secondary TVET.
- d. Research capacity needs to be built up to an internationally competitive level in selected areas, and integrated with university education.

### ***Strengthening links between higher education and the labour market***

Surveys of students and graduates of Egypt’s higher education and vocational education sub-sectors indicate common concerns:

- insufficient choice of field of study relevant to career preference;
- highly restricted opportunities for students to change fields of study;
- inadequate preparation for employment resulting from curriculum irrelevancies;
- lack of practical skills formation;
- an over-concentration on memorising content, passive pedagogies; and
- lack of learning materials, library books, facilities and equipment.

In both sub-sectors there are symptoms of a supply-driven culture largely unresponsive to student needs, and this culture is entrenched, as outlined below, by the financing and regulatory arrangements by which the higher education system is governed.

In the case of technical and vocational education and training, there is a double jeopardy, as that sub-sector suffers from low status, poor funding and poor quality. It will be important for Egypt to reinvigorate rather than neglect technical and vocational education, to raise its status and quality, and to provide incentives for greater numbers of students to participate. This

aspect of the reform agenda will also need to address the poor links with business and industry, the rigidity of education and training programmes, and the lack of articulation across upper secondary, vocational and university education.

### *Recommendations for improving the fit of higher education to labour market needs*

2. The Government might consider developing with each public higher education institution, in consultation with national and regional employers, a broad compact that clarifies the institution's distinctive mission, the scope and focus of its educational provision, expectations of its performance, associated resourcing to build its capacity, and the extent of its substantive and procedural autonomy. It would be important in this process to clarify the labour market areas for which each institution prepares graduates.

3. A much wider range of information is necessary to guide student choice and institutional planning, and the Government should consider establishing a professional labour market information service that can provide prospective students, careers guidance advisers and higher education institutions with information about trends in labour supply and demand, and the labour market outcomes of graduates in different fields.

### ***Developing national steering mechanisms***

Egypt faces the imperative of having to enlarge tertiary education participation and attainment with scarce resources without diminishing quality. This will require improving the success rates of currently participating cohorts of students and drawing in new cohorts, including an increasing number who are less well prepared. The growth and diversity of the student body will need to be accommodated cost-effectively.

The challenge for policy is to establish the frameworks and incentives to promote the necessary supply diversity – a variety of institutional types (differentiated universities, specialist niche providers for particular occupations alongside corporate and vendor providers, technical institutes, variants of the Liberal Arts Colleges and Community Colleges found in North America, on-line providers (local and foreign), and combinations of institutions (public, private and public-private partnerships) offering diversity of learning modes, places, intensities, times and prices.

At the same time, the effectiveness of established higher education institutions needs to be greatly increased. Internationally, good practices in the development of well-functioning higher education systems involve a

joined-up approach to policy for educational effectiveness and quality assurance, having regard to local, national and international labour markets for graduates. An emerging model for managing the increasing scale and complexity of contemporary higher education is one of mutual responsibility between governments and institutions in shaping and delivering quality outcomes to meet individual and national needs.

### *Recommendations for strengthening system steering*

4. Egypt should take deliberate, gradual and transparent steps to achieve a more effective balance between institutional self-regulation and overall public control of the scale, structure, quality and cost of its higher education system. The direction of reform should involve greater responsibility and discretion for accredited higher education institutions, and less central regulation and detailed supervision of their activities.

5. The Government might develop a single legal framework for higher education covering all sectors: public universities, technical colleges, and private institutions (for-profit and non-profit). This legal framework could provide for:

- establishment of a new Supreme Council for Higher Education with responsibility for steering the future course of the whole higher education system (see below);
- the opportunity for public institutions to become independent autonomous public corporations (see below); and
- a definition of “non-profit” private institutions.

6. Consideration might be given to establishing a single Supreme Council for Higher Education (SCHE) co-chaired by the Minister of Higher Education and the Ministry of State for Scientific Research. The SCHE could be the pre-eminent planning, co-ordinating, and information services agency for higher education in Egypt, covering all institutions and providers: public, private non-profit and for-profit institutions, technical colleges, foreign institutions, and Open University. Particular attention might be given to the following matters:

- a. The new SCHE could have responsibility for a range of functions related to achieving responsiveness, coherence and sustainability in Egypt’s higher education system. It is envisaged that these functions could include: strategic planning; information collection, analysis and reporting; the administration of funding programmes, including student scholarships and loans, and strategic investment funds aligned with national priorities; and advice to the Minister regarding

the establishment of new institutions and institutional branches, and methods of institutional financing and associated accountability reporting.

- b. The membership of the SCHE might include persons with proven ability to make significant contributions to higher education, business leaders, community leaders, and representatives of public universities, private universities, technical institutes, vocational colleges, and secondary schools. A small number of senior officials with direct responsibilities related to the nation's higher education strategy might participate on an *ex-officio* basis.
- c. Advising the SCHE could be a council of public university presidents, and council of private university presidents, and the existing Supreme Council for Technical Colleges (SCTC) to ensure attention to the unique mission of technical colleges.
- d. It is envisaged that implementation of this recommendation would lead to consolidation within the new SCHE of those functions currently exercised by the Supreme Council for Universities (SCU), the Supreme Council for Private Universities (SCPU), and the Supreme Council for Technical Colleges (SCTC), and the functions of the Ministry of Higher Education relating to the operation of institutions.

### ***Increasing institutional flexibility***

Egypt continues to be burdened by an outmoded framework of public sector administration. Higher education is affected by that problem, both in its internal organisation and in its relations with government agencies. The Egyptian higher education system is highly centralised, across segmented agencies and multiple layers of control, but it is not well planned. Legislative provisions have detailed specifications and various central agencies exercise highly interventionist powers over operational minutiae. Budget allocations to higher education institutions are not linked to the respective roles and needs of individual institutions. Employment and staffing policies in the sector mirror those of the public sector at large, fostering commensurate problems of staffing imbalances, promotion by years of service, and poor remuneration.

The opaque processes for determining student enrolment levels at each institution, and by faculty and specialty, is an excessive form of micro-management that limits institutional flexibility and impedes responsiveness

to changes in student demand and labour market needs. Curiously, private institutions are subject to many of the same regulatory controls imposed on public institutions, thereby negating the benefits of a strong and innovating private sector.

Governments the world over are devolving more responsibilities to higher education institutions, in recognition of their economic and social importance and their growing complexity. Governments are giving them more substantive and procedural autonomy, so that the institutions have the flexibility necessary to respond to varying needs in changing and competitive circumstances. The process of devolution involves changed roles for government and institutions, and changing relations between them.

The means of devolution include reforms to system steering and institutional governance, clarification of institutional roles and performance expectations, less-restricted funding with stronger accountability for cost-effectiveness, and stronger quality assurance processes with a focus on educational outcomes. Among the mechanisms used to increase autonomy, accountability and responsiveness are competitive funding schemes, and mission-based performance-related compacts.

There is growing recognition of the need for a strengthened national policy capacity, dissemination of information about institutional performance, the elimination of redundant regulations, and stronger academic quality assurance and consumer protection. The next step is to provide greater autonomy to the universities, technical colleges and institutes, particularly in matters of student selection, programme offerings and enrolments, curricula, and academic staff appointment, promotion and compensation.

One option for proceeding is to identify a small number of institutions with which to trial more flexible arrangements. A successful model is that of the Suranaree University of Technology in Thailand which has been given the special designation of a “public autonomous university”. It receives a lump sum budget from the national government and has discretion over the use of its resources. It is self-governing in terms of its personnel and operates outside the civil service. It reports on the results it manages and demonstrates what it is possible to achieve.

### *Recommendations for increasing responsible institutional self-management*

7. The Government might undertake a structured and transparent process for increasing the responsibilities of individual institutions, and building their capacities for self-management, with the ultimate aim that all public

universities and technical colleges will achieve the status of autonomous public corporations.

8. To improve the effectiveness of public higher education institutions and create a level playing-field for both public and private institutions, the Egyptian authorities could grant more autonomy to universities and institutes, allowing them to operate with more flexible educational processes, administrative procedures and financial management rules.

9. Egypt's public higher education institutions could be given increased responsibility, building on the foundations of the Quality Assurance and Assessment Projects, to undertake strategic planning with a view to aligning their programmes and the educational processes with student demand and labour market needs. To that end, the Government will need to devolve a wider range of authorities to institutions, particularly over their educational offerings, student admissions, staffing, and resource utilisation, within a framework of institutional accountability for managing those resources effectively to achieve results.

10. Public universities with the status of a public corporation might be governed by a Board of Trustees with authority to determine, according to its agreed mission and subject to appropriate accountabilities, its academic and operational affairs. Particular attention would need to be given to the range of direct and delegated responsibilities of an institution's Board of Trustees, including independent authority to:

- appoint, evaluate, set compensation for, and dismiss the president, vice presidents, deans and all other administrative staff of the institution;
- appoint, promote, transfer, compensate, and dismiss academic staff;
- establish enrolment levels by faculty/programme;
- admit students to specific programmes;
- establish, revise or eliminate academic programmes;
- realign academic staffing to serve student demand and institutional priorities; and
- manage the usage, including carry-overs, of all institutional revenues.

11. It is envisaged that the SCHE would develop the criteria for institutions to demonstrate their capacity to assume public corporation status. Each university would be assessed in terms of its readiness to move to a more autonomous status and granted that status on an institution-by-

institution basis. One criterion could be that all faculties and the institution as a whole have been awarded full accreditation by NAQAAE (National Authority for Quality Assurance and Accreditation of Education).

12. Desirably over time, higher education institutions that demonstrate the capacity to manage themselves well and deliver to agreed expectations would be allowed increasing discretion in decision making about student enrolments, course offerings (openings and closures), personnel recruitment and promotion, and the deployment of resources.

### ***Student access to higher education***

The transition of students from the general and vocational/technical tracks of upper secondary education to higher education in universities, colleges, and other tertiary institutions is one of the most significant challenges for education reform in Egypt. A major problem, from both efficiency and equity perspectives, is the skewed representation of secondary school students in tertiary education. Whereas 60% of secondary student enrolments are in technical secondary schools, some 95% of enrolments in post-secondary technical colleges are students from general secondary schools. The students going to technical colleges are predominantly general secondary track students who failed to gain admission to university. Students of the technical and vocational education and training (TVET) sub-system are effectively “tracked-out”, facing a dead-end in terms of their prospects for further learning.

The Government of Egypt has taken some initiatives to address the rigidity and narrowness of secondary school tracking, but much more comprehensive reform will be required, including changes to school structure, curriculum and assessment, in order to diversify the learning opportunities for students and increase their prospects of success. Nevertheless, reform at the tertiary level cannot wait for progress in secondary education; simultaneous and iterative reform is needed in both domains, with progress in one area reinforcing change in the other.

An immediate issue to be addressed is that of the transition from secondary to tertiary education. There are widespread concerns about the appropriateness of continuing total reliance on the secondary school examinations as the sole basis for admission to higher education. Examination results may reflect differences in input factors, such as family circumstances, school quality and/or access to private tutoring. The process does not place the students where they fit, overlooks their latent ability and cannot reliably predict their subsequent academic performance.

At the same time, there appears to be little community and professional support for dispensing with the *Thanaweya Amma* examinations and replacing them with admission practices that may be perceived as less transparent.

Hence the most fruitful approach is to **retain** the national examinations, perhaps in modified form so that they can reinforce needed reforms to secondary education, and **complement** them with additional selection criteria and processes. The complementary selection mechanisms could be set centrally for national application, or authorised nationally for optional use at the discretion of individual higher education institutions, or determined by the institutions themselves. Some combination of these options could be organised, with institutional discretion being permitted only for institutions that meet specified preconditions such as official accreditation and transparent procedures of student selection. Australia and Georgia offer illustrations of practical approaches in this regard.

The main advantages of a complemented approach is that it takes account of school achievement through an examination system that is based on evaluating the educational outcomes from secondary schooling, offers another insight into the potential of a student to succeed, and identifies particular aptitudes that may not have been revealed through the student's selection of school subjects. Another advantage of well-constructed tests of generic reasoning and thinking skills in a range of familiar and less familiar contexts which do not require subject specific knowledge, is that they do not lend themselves readily to practised answers or to predictable questions of the kind that often sustain the mass tutoring industry.

### *Recommendation for widening student access to higher education*

13. Egypt might move progressively to a more diverse, student-driven system of higher education, where students can exercise choice over where and what they study, and institutions can exercise autonomy in the admission of students, reflecting their missions and capacities. Particular consideration should be given to the following matters:

- a. The Government, while maintaining control over the total number of higher education enrolments at the sectoral and institutional levels, could permit individual institutions to decide which students they admit and the programmes to which they admit them.
- b. The process for admission to higher education institutions should be based on an expression of student preferences, a first round of institutional offers, students' acceptance or rejection of first round

offers, and a second round of institutional offers and student acceptances.

- c. The Government might encourage students about to complete their secondary schooling to express an order of preference for higher education institutions and programmes, and enable students who meet the threshold requirements for entrance to higher education, but who are not admitted to the institution of programme of their first preference, to have their second or third preferences considered. Over time, students should be given wider choices for enrolling in their preferred fields of study where they meet the entry requirements, or accepting a place of their second preference in another field or institution.
- d. To certify educational attainment through schooling, and to enable student access to further learning, there should continue to be a system of national examinations in the final years of secondary schooling, desirably supplemented by portfolios of student work and indicators of achievement through continuous school assessment.
- e. For the purpose of admission to higher education, the results of the national secondary examinations and other indicators of achievement at school could be complemented by student results on professionally constructed tests of generic reasoning and thinking skills.
- f. Initially, the Egyptian authorities might have an appropriate set of tests of generic reasoning and thinking skills professionally designed and trialled, and after revision, used for a period at the national level, in order to familiarise students, parents and personnel in schools and higher education institutions with the innovation, and build up public confidence in its use. Eventually, higher education institutions may be permitted to use validated supplementary selection instruments of their choice.
- g. The introduction of these recommended changes to higher education admissions could take place alongside the development of academic reference standards, quality improvement in teaching and learning and assessment, institutional capacity building, and the implementation of national quality assurance procedures, including of student admission processes.

### ***Raising the quality and effectiveness of higher education***

On the basis of the available information and views presented to the review panel regarding the quality of inputs, processes, outputs and outcomes for universities and higher institutes, the following observations can be offered:

*Educational inputs:* The system generally has very high student staff ratios (SSRs). Medicine, natural and veterinary sciences are the fields with the lowest ratios, suggesting more intensive teaching. In these fields, Egypt's ratios, notably in its public universities, are on par with leading institutions of the developed world. Except for those fields, private universities have better SSRs than public universities by a considerable margin, and notably in the social sciences, where the public university SSRs reflect a standard of higher education well outside internationally acceptable norms. With the single exception of art, the SSRs of private higher institutes are well above internationally accepted standards. The problem of large classes is compounded by poor facilities and equipment in many institutions.

*Educational processes:* University education in Egypt can generally be described as being based on a narrow, rigid and often outdated curriculum typically bound by the single perspective of the lecturer whose texts form the assessable content of a course. An emphasis on the memorisation of content predominates over the development of critical reasoning and analytical skills. Assessment in higher education is based typically on content-recall rather than the demonstration of higher order reasoning skills.

*Educational outputs:* Over the decade to 2005/06, Egypt's output of graduates grew by more than 1 million (116%). Some 80% of these additional graduates had studied in what are designated as theoretically-oriented areas, whereas for Middle East and North Africa (MENA) countries the equivalent share is 66%, and for OECD countries some 60%. Additionally, apparent stability in the broad composition of graduate supply is not symptomatic of a responsive and dynamic higher education system. For instance, graduate output was flat over the decade in engineering, archaeology, economics and political science, social service, and tourism and hotels.

Notwithstanding scarce resources devoted to research, development and innovation, Egypt's research output in terms of articles published in international journals doubled over the decade to 2007, but it is still very low by international comparisons. Over half of Egypt's university research output is derived from just three universities. The alignment of university research with national development goals is weak.

### *Quality assurance and improvement*

Egypt has adopted a strong approach to external quality assurance, primarily to safeguard minimum standards and provide consumer protection in the context of growth in private sector provision of higher education. Particular initiatives include the World Bank financed Quality Assurance and Accreditation Projects, the Egyptian Government's establishment of the National Authority for Quality Assurance and Accreditation of Education (NAQAAE), and the development of National Academic Reference Standards for various fields of university study.

Given the challenges ahead, it is encouraging to observe that much of the necessary groundwork has been laid: quality assurance documentation and manuals have been developed and made available to academic staff of higher education institutions; training and professional development opportunities have been provided; and indications have been given that good performance will be recognised and rewarded.

However, important work remains to be done at the institutional level in moving beyond compliance, and to mature the internal quality culture and management capacity.

### *Recommendations for raising educational quality and effectiveness*

14. A holistic approach to improving the quality and effectiveness of Egyptian higher education would:

- focus on learning outcomes in terms of the capabilities that graduates will need in a changing world for life, work and further learning;
- integrate research into university education, especially in graduate schools; and
- involve government agencies and institutions accepting shared responsibilities for raising the standards of educational inputs, processes and outputs, in consultation with employers and in the context of a strategic approach to internationalisation.

15. Progress could be made on developing an Egyptian National Qualifications Framework (NQF), specifying learning outcomes in terms of graduate attributes for each level of educational award, including secondary schooling certificates, technical and vocational education and training diplomas, and other higher education degrees, and indicating the pathways that may be taken from one award to another. Particular consideration might be given to the following matters:

- a. Alignment of the NQF with the Bologna Process model, including European Credit Transfer and Accumulation System (ECTS) equivalence;
- b. Cross-sectoral coherence and articulation;
- c. Further development of graduate attributes in the NQF, including through continual revision of the National Academic Reference Standards (NARS) and Institutional Learning Outcomes; and
- d. Clarification of different institutional roles, particularly with regard to the fields and levels in which they are authorised to offer higher education qualifications.

16. All higher education institutions should be expected to provide up to date public information about their programmes and courses, admission requirements, and graduate destinations. Consideration might be given to embedding the following practices:

- a. Each institution tracks the destinations of its graduate classes annually.
- b. All higher education institutions obtain feedback annually from graduates about their satisfaction with their course, and from employers about their satisfaction with graduates, and report the findings publicly.
- c. Higher education institutions, in partnership with employers, seek to offer internships to students to enable them to acquire practical experience as part of the curriculum.
- d. In developing graduate capability statements (institutional learning outcomes), higher education institutions engage with prospective employers of their graduates.

17. The capacity of public higher education institutions for effective performance management could be purposefully strengthened through attention to the following aspects:

- a. Public higher education institutions adopting performance-based management practices along with structured professional development of faculty and staff.

- b. Public higher education institutions developing formal processes of student evaluation of courses and teachers, and the results should inform revision of courses, learning materials and teaching methods.
- c. Students being involved in the quality assurance mechanisms of institutions, including in the design of evaluation forms and monitoring frameworks.

### ***Developing a strategy for internationalisation***

All over the world, higher education and university research are internationalising on an unprecedented scale and at a rapid rate. Internationalisation is now multi-dimensional. Conventional notions of effectiveness, quality and relevance are necessarily expanding, and governments and institutions around the world are having to adapt to the new realities. However, these trends are not evident in Egypt where internationalisation has not featured as an area of policy attention.

By comparison with other countries, the number of Egyptian students abroad is very low. Many students indicate a keen interest in study abroad, but their aspirations are not being realised. International students in Egypt have increased in recent years but represent only 1.3% of all higher education enrolments. Several institutions have indicated a desire to accept international students. The institutions themselves, however, generally do not actively attract international students, and many lack adequate infrastructure to accommodate them, and there are bureaucratic impediments.

Fostering academic staff mobility, in an orderly way, is one of the most effective long term means of internationalising of higher education. Mobility initiatives in Egypt do not appear to be driven by strategy at either the system or institutional level.

Second language learning in Egyptian higher education institutions is very limited, though several programmes are offered in English and French at some universities. Students wish to be exposed to a more internationalised curriculum, including the opportunity to master a second language and to have a study abroad experience.

In general, Egypt is opening up to the international community in various ways but has yet to develop a strategy for internationalisation of its higher education system. A cornerstone of a contemporary internationalisation strategy is the development of a comprehensive national qualifications framework, aligned as far as possible with international developments, especially the Bologna Process reforms, but encompassing all

levels of educational qualification, including the school leaving certificate, technical diplomas, and degrees. Such a qualifications framework, by detailing the knowledge, understandings and competencies expected of graduates for a given qualification, sets the reference point for curriculum and assessment, and for student learning pathways. An internationally attuned qualifications framework would enable Egyptian graduates to find employment wherever they might seek it and facilitate the recognition of qualifications of foreigners seeking to work or study in Egypt.

*Recommendation for developing a comprehensive internationalisation strategy*

18. Consideration should be given to formulating a more comprehensive internationalisation strategy for Egyptian higher education. This strategy could provide for:

- a statement of national policy objectives and principles;
- a more coherent set of actions aligned with national priorities;
- the embedding of internationalisation competencies into the statements of expected graduate attributes in the national qualifications framework;
- development of institutional twinning arrangements for the joint conduct of research and the awarding of diplomas and degrees;
- encouraging second and third language learning throughout the education system;
- ensuring that international students are included in Egypt's quality assurance and consumer protection arrangements;
- professionally promoting Egypt as a study destination for students in other countries;
- systematically collecting and reporting data on the movement of students and academic staff;
- reducing unnecessary regulations and bureaucratic procedures related to international collaboration; and
- providing adequate incentive funding and support, including support for Egyptian undergraduate students to have a period of study abroad.

### ***Strengthening the development and application of knowledge***

In general, Egypt lacks a well-defined strategy for research, development and innovation (RDI). Its capacity for basic science is weak. Its RDI management is under-developed and unco-ordinated, and there is inadequate investment in research and development (R&D). Consequently, Egypt has a low level of readiness to be competitive in the global knowledge economy.

The recent establishment of Higher Council for Science and Technology provides the basis for high-level co-ordination and prioritisation of R&D aligned with national development goals and strategies. The new Science and Technology Competitive Fund and the EU-Egypt Innovation Fund provide incentives for raising research quality and linking research activity with industry development needs.

One major structural barrier to the development of future capability is the separation of research from university education and knowledge exchange. This fragmentation, which derives from centralist periods and influences, does not suit the contemporary character of knowledge formation and diffusion, gives rise to loss of synergies, impedes cross-disciplinary work, and yet does not enable the development of critical scale.

Over-staffed research institutes affiliated with various ministries account for more than three-quarters of RDI expenditure. Egypt's high dependency on full-time personnel in dedicated research institutes is inefficient and exposed to several risks: the continuing predominance of a supply-driven approach to research and innovation; under-performance and loss of dynamism; and difficulties attracting and nurturing young talent.

Another structural weakness is the high dependency on input-based funding, and the associated low use of competitive research funding.

### ***Recommendations for strengthening capacity for research, development and innovation***

19. Through the Higher Council for Science and Technology, chaired by the Prime Minister, the Government of Egypt should commission an industry performance and foresight project, and an associated mapping of Egyptian R&D capacity to serve identified development needs and opportunities.

20. The Government should continue to build on the recently established Science and Technology Competitive Fund to provide demand-driven funding for RDI initiatives on a competitive basis.

21. Gross expenditure (public and private) on R&D should be sharply focussed on areas of internationally benchmarked research strength and national research priorities.

22. The Government should provide incentives for linking centres of research excellence with leading universities in cognate fields, including joint researcher appointments, collaborative supervision of doctoral and post-doctoral students, and joint participation in international research collaboration schemes.

23. Funding for centres of excellence in universities with demonstrated research capacity needs to increase significantly. Particular consideration should be given to the following matters:

- a. The Government should provide incentives for research collaboration involving universities, research institutes and enterprises in Egypt.
- b. Most research funding should be allocated to research teams and projects on a competitive basis, with independent peer reviewing of research proposals.
- c. A competitive process, along the lines of the German Excellence Initiative, could help to integrate research into university education in key centres and graduate schools.
- d. Over time, the Government should undertake a major programme of strategic investment in state-of-the-art research infrastructure.
- e. The Government should cause to have produced annually a national report on the state of Egypt's RDI system, comparing Egypt's capacity and performance with international comparators.

### ***Financing expansion and improvement in a sustainable manner***

The Government's ability to carry out its master plan to expand the higher education system while improving quality will hinge, to a large extent, on the availability of sufficient financial resources. In comparison with other MENA countries, public spending on higher education in Egypt is reasonably high, and the burden of future expansion and quality improvement will need to rely more heavily on private expenditures.

Even though the share of higher education public expenditures in the total education budget is relatively high, public spending on education has decreased over recent years since 2002, and per student expenditures at the

higher education level are relatively low. As a result, the public universities and institutes are severely under-resourced in terms of faculty, infrastructure, equipment and learning materials. It is well recognised that the combination of rapidly increasing enrolment and lack of resources has led to further deterioration of quality in most public higher education institutions. Funding for university research is also very low, limiting the ability of universities to play an important role in the generation and dissemination of knowledge.

A case may be made for a time-limited capital injection to upgrade the higher education material base. However, without concurrent management reforms at the institutional level, encouraged by financing incentives for performance improvement, there could be little confidence that the investment would yield a sustainable return.

With limited performance-based budget allocation mechanisms, public higher education institutions have no particular managerial and financial incentives to be more innovative and use resources more efficiently. Broadly, the institutions having the lowest rates of productivity (graduate output per academic staff) have the highest student enrolments, there being no apparent realisation of economy of scale benefits. It appears that the very large public universities perform sub-optimally on both the quality and efficiency dimensions.

The tightly-controlled administrative system and rigid government regulations under which all higher education institutions operate provide insufficient incentive and flexibility to use their limited resources in the most efficient and effective manner.

The fact that the duration of a number of professional first degrees in Egyptian universities is generally one year and often two years longer than similar degrees in North America or some European countries represents a major social cost. Consideration might be given to reviewing the costs and benefits of the first year of general studies in professional courses such as engineering and medicine, where time to graduation is particularly long. The vocational educational and training sector also lacks short and flexible programmes that provide students with opportunities to attain intermediate qualifications.

The increase in private higher education enrolment and the growing segmentation, within public institutions, between students who study free-of-charge and those who pay fees in various forms, could result in serious social disparities in terms of access to higher education and labour market outcomes. Despite significant progress in the past decade, gender and regional inequities still require special efforts.

*Recommendations for financing growth and improvement*

24. It is highly unlikely that Egypt can achieve its ambitious enrolment expansion and quality improvement goals using the traditional mode of funding public higher education institutions predominantly with budgetary resources. The Government needs to design and implement a sustainable funding strategy that would realistically support its long term reform and development objectives. This would guide decisions about the desirable level of public funding, possible avenues for resource diversification, increased cost-sharing in an equitable way, and more efficient ways to distribute public resources among institutions and students.

25. A five-pronged strategy is proposed to attain the 2022 targets: (i) mobilising a greater share of public expenditures for education in GDP, with a proportional increase in spending on higher education; (ii) increasing resource diversification in public universities and institutes, including higher levels of cost-sharing; (iii) removing barriers and incentives for further growth of the private sector; (iv) enlarging enrolments in practically-oriented programmes and institutions; and (v) establishing cost-effective distance education modalities for a significant proportion of the student population.

26. It is essential that the Government accompanies increased cost-sharing with a well-targeted programme of need-based scholarships and student loans to guarantee access for able students from low-income backgrounds.

27. To promote greater efficiency in the use of public resources, the Government should consider a combination of complementary performance-based funding allocation mechanisms to distribute public resources among higher education institutions, including a funding formula for recurrent expenditures (student-based or graduate-based funding), competitive funding for investment projects, and performance contracts to promote priority policy objectives.

28. In view of the run-down condition of many public higher education institutions, consideration should be given to a one-off major capital injection and capacity building investment programme. Such a programme could be implemented over the decade 2010-20, preceding the next demographically-driven enrolment surge into post-secondary education. The focus of such a programme could be on upgrading the material base of the public institutions, including their buildings, libraries and teaching and research equipment, as well as curriculum renewal and management improvement. (See recommendation 9 above).

29. The Higher Education Enhancement Project (HEEP) competitive fund could be confirmed as the principal allocation mechanism to distribute investment resources.

### *Managing the implementation transitions*

Clearly, there is a wide gap between Egypt's current policies and practices for higher education development and those being adopted in the leading and emerging nations. Given Egypt's circumstances it is unrealistic to expect that gap to be closed in one large immediate step. Nevertheless, it is imperative for Egypt to be clear about its longer-term goals, keep its sights on moving ahead in absolute and relative terms, and manage well the required transition to a more dynamic, sustainable and coherent national system of higher education.

Assuming the Government of Egypt is inclined to adopt the broad direction of the recommendation set out below, even if not in its specificity, it will be necessary to select those changes which can be delivered early and which are likely to have the knock-on effect of creating conditions for subsequent adoption of change in other areas.

### *Recommendation for managing the reform process*

30. Consideration should be given to a staged process of implementing specific reform initiatives through experimentation and piloting, to test the workability of processes, to demonstrate feasibility, and to build support.

## Notes

<sup>1</sup> Higher education encompasses post-secondary education and training programmes leading to the award of post-school qualifications, including vocational, technical and academic awards.

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