



STRATEGIC PLAN FOR HIGHER EDUCATION IN BANGLADESH : 2018-2030

**University Grants Commission of Bangladesh
Secondary and Higher Education Division
Ministry of Education
Government of the People's Republic of Bangladesh**

Strategic Plan for Higher Education in Bangladesh: 2018-2030

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



PRESIDENT
PEOPLE'S REPUBLIC OF BANGLADESH
BANGABHABAN, DHAKA

17 Ashar 1425
01 July 2018

Message

It gives me great pleasure to know that the "Strategic Plan for Higher Education (SPHE) in Bangladesh: 2018-2030" has been prepared and the Secondary and Higher Education Division, Ministry of Education is going to implement it in phases with a view to modernizing our higher education to meet the national and global needs.

The present government under the dynamic leadership of Hon'ble Prime Minister Sheikh Hasina initiated a move to formulate a strategic plan for higher education to take our higher education to global standards. In line with the plan, the government is implementing SPHE 2018-2030 in phases. I am sure that it will bring about significant changes in our higher education and eventually reach all its goals. Over the years a lot of changes have taken place both nationally and internationally. To keep pace with the changes, I believe, the new and up-to-date strategic plan will surely enhance teaching and research activities and ensure overall quality improvement of the universities. This strategic plan will substantially streamline general and financial management, teaching and learning and advanced research of the universities. It will also ensure transparent faculty recruitment and a strong ICT focus; make provision of student loans and encourage a fruitful public-private partnership and provide pedagogical training to the pertinent stakeholders. These and other actions that the plan proposes will, I am confident, lead to a paradigm shift in our higher education which will enable the country to successfully meet the challenges of the 21st century and beyond.

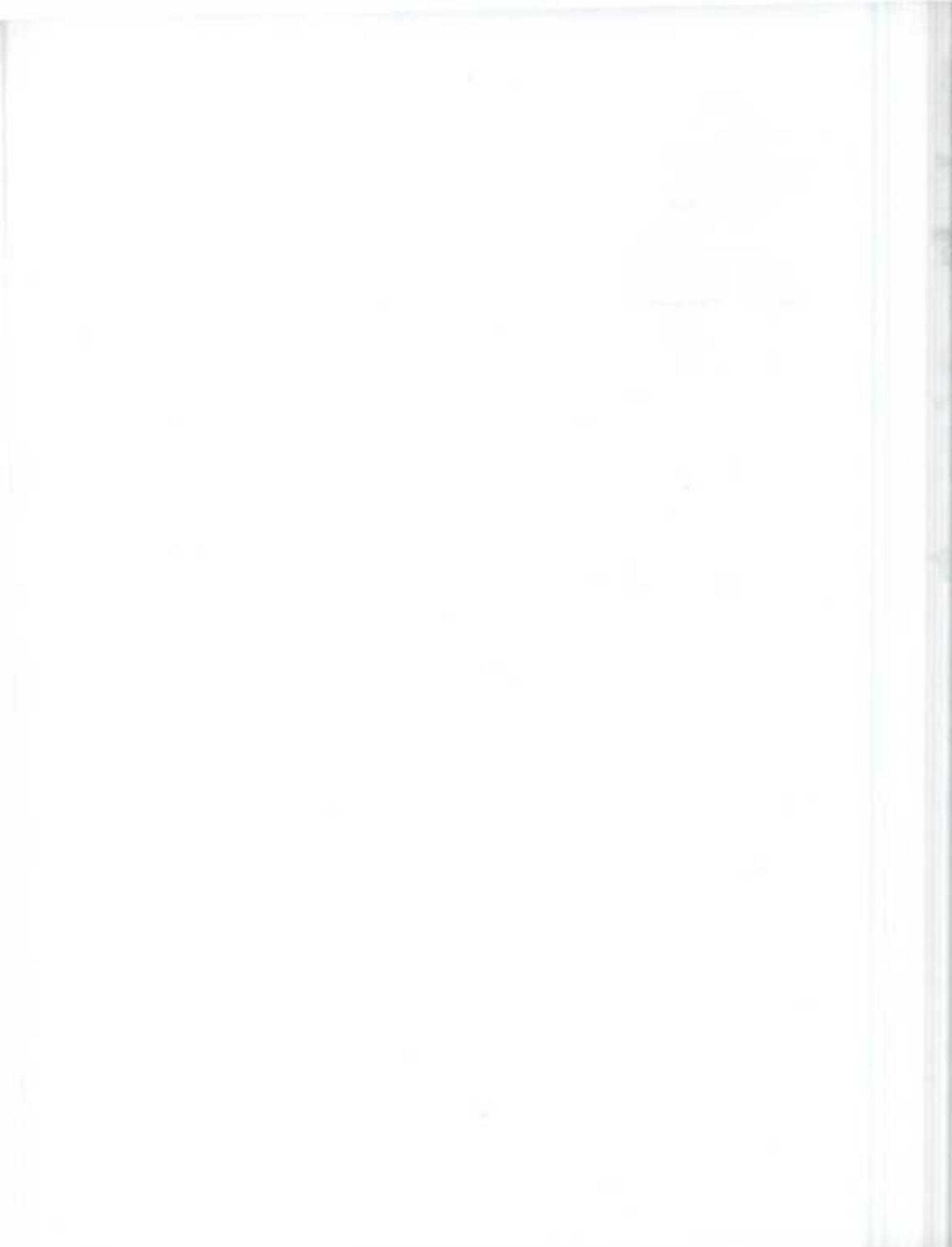
We all know that on the eve of our graduation from a low income country to a middle income one, Bangladesh needs a globally competitive higher education. SPHE 2018-2030 will no doubt assist us to achieve that goal and the SDGs within its time frame.

I would like to extend my heartfelt thanks to all who are involved in the preparation of this valuable document. I strongly believe that all the stakeholders will now work closely together to successfully implement the plan in phases. Thus the country will attain the goal of Sonar Bangla dreamt of by Bangabandhu Sheikh Mujibur Rahman, Father of the Nation.

I wish the Strategic Plan for Higher Education in Bangladesh: 2018-2030 a grand success.

Khoda Hafez, May Bangladesh Live Forever.

Md. Abdul Hamid





بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



PRIME MINISTER
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF
BANGLADESH

19 Ashar 1425
03 July 2018

Message

I am happy to know that a book is going to be published on the recently approved 'Strategic Plan for Higher Education in Bangladesh: 2018-2030 (SPHE: 2018-2030)'. On this occasion, I would like to thank all the academics, representatives from different stakeholders, government officials, University Grants Commission and our development partners.

The greatest Bangalee of all times, Father of the Nation Bangabandhu Sheikh Mujibur Rahman, realizing the paramount importance of education, constituted Dr. Qudrat-e-Khuda Education Commission in 1972. The Commission submitted its report in 1974 to suit a nascent state that would eventually be transformed into the Golden Bengal as envisioned by the Father of the Nation. But the report was shelved by the regimes which benefited from his tragic demise in 1975. The nation had not seen any education policy as such till Awami League, back to power in 1996, came up with Education Policy 2000 that was based on the Dr. Qudrat-e-Khuda Education Commission report. It met with the same fate due to political changeover. Resuming office in 2008, the Awami League framed Education Policy 2010 which stipulated the principles and strategies for a massive reform of the age-old education system so that the nation could be blessed with a forward-looking, innovative and knowledge-based society. The policy, welcomed across the board, outlined the kind of higher education that needs to be pursued to make the citizens capable of facing the challenges of the 21 century.

The recently approved 'SPHE: 2018-2030' is a step forward in embodying our determination to help evolve a human capital on par with the global standards. It aims at establishing Bangladesh Higher Education Commission, National Research Accreditation Council, a World-class Flagship University, introducing Umbrella Legislation for Public Universities and a Trust Fund for the students to promote a more enabling environment for higher education. The Strategy will help make the higher education of Bangladesh globally competitive and ease our journey towards fulfilling the dream of Bangabandhu Sheikh Mujibur Rahman.

I hope that all concerned will put in their best efforts to see the objectives of the Strategy achieved.

I wish the 'SPHE: 2018-2030' an effective and efficient implementation.

Joi Bangla, Joi Bangabandhu
May Bangladesh Live Forever.

Sheikh Hasina



Minister
Ministry of Education
Government of the People's
Republic of Bangladesh

Message

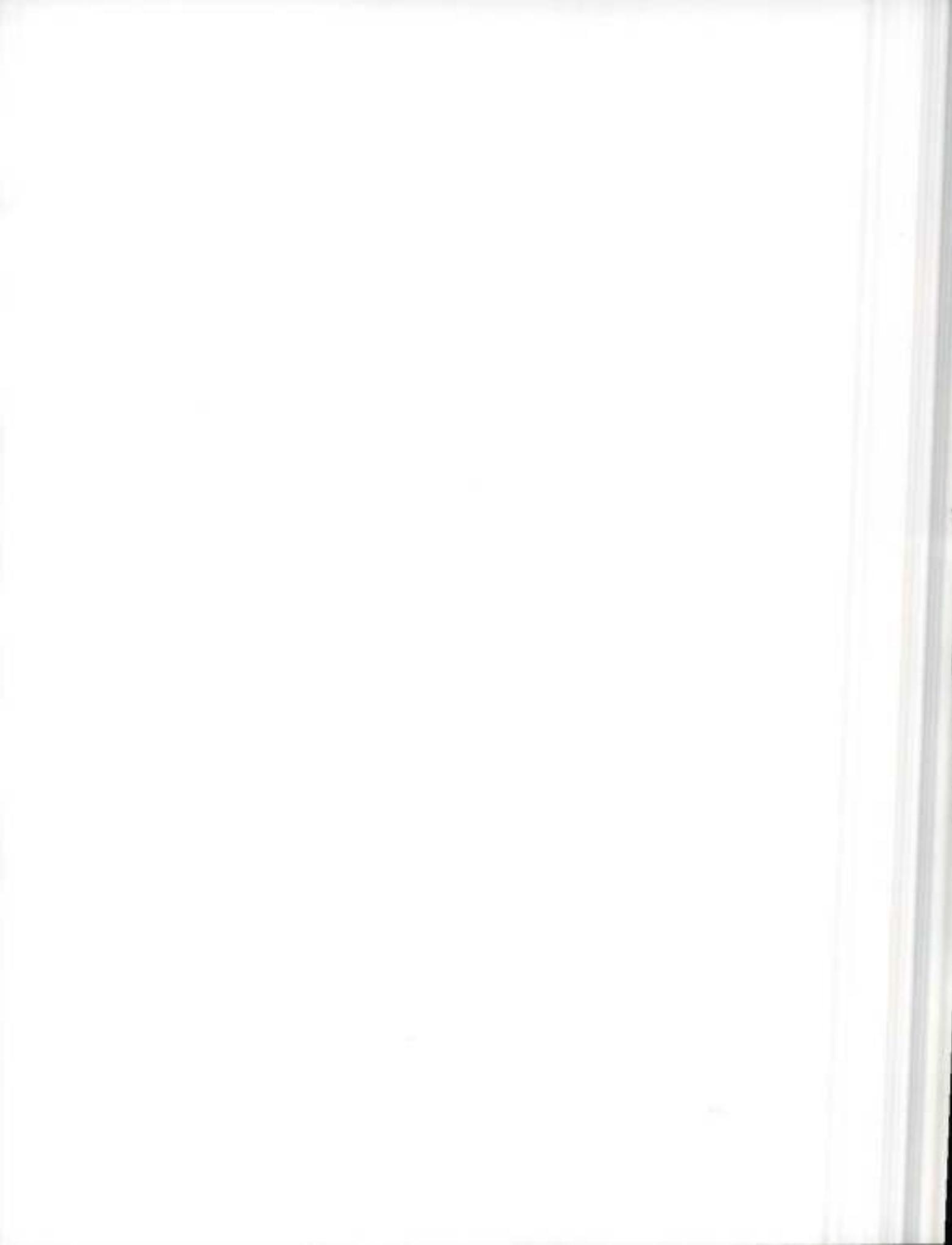
I am happy to note that the government of Bangladesh has formulated a 13 year Strategic Plan for Higher Education in Bangladesh, SPHE 2018-2030, to raise the standard of our higher education to the global level. Our government is successfully pursuing its Vision 2021 to make Bangladesh a poverty-free and prosperous nation by 2021. SPHE 2018-2030 has been formulated in conformity with Vision 2021 as well as Vision 2041, the National Education Policy 2010 and Sustainable Development Goals 2030. I would like to highlight some major actions the Plan proposes such as the establishment of a national accreditation council, a national research center and upgradation of the present UGC into a Higher Education Commission (HEC) which will play a vital role in building a knowledge-based society and coordinate the implementing of the Strategic Plan. I am happy to report that Bangladesh Accreditation Council Act 2017 has already been passed in the parliament while the Hon'ble Prime Minister has given her approval to set up HEC. Our government is committed to implement all the recommendations of SPHE 2018-2030 in phases.

SPHE 2018-2030 focuses on increasing government's budgetary allocation and improved academic and financial management of the public universities. It also emphasizes enhancing our universities' ICT capabilities for fulfilling the vision of Digital Bangladesh by 2021. The Plan also aims to improve the governance and financial management of the private universities through amendment of the Private University Act 2010.

We are proud to declare that our government is committed to establish a world class flagship university by 2022 which will be a pioneer of excellence in the country. The Strategic Plan recommends enacting an umbrella legislation for the public universities which will cover their common basic functions. The government will also formulate a clear policy guideline for Islamic Arabic University to make madrasa education compatible with our mainstream education. The government will also establish a Trust or Company to operate a loan program for the poor and meritorious students of the universities. SPHE 2018-2030, which incorporates a fast track five year plan, will be implemented in three phases.

I thank the concerned experts, academics, researchers, officials, the business community, and the national consultant who were involved in preparing such a worthwhile Plan.

(Nurul Islam Nahid, M.P.)





Secretary

Secondary and Higher Education Division
Ministry of Education
Govt. of the People's Republic of Bangladesh

Message

I would like to thank the Hon'ble Prime Minister for approving the visionary, long-term Strategic Plan for Higher Education (SPHE): 2018-2030 which is a milestone among government achievements in the higher education subsector. I believe that a successful implementation of this plan will fulfil the aspirations of Bangladesh through quality improvement of our higher education and research. I am sure, the vision, mission, objectives and proposed actions of SPHE 2018-2030 will guide the implementers to the highest level of success.

One of the major recommendations of the plan is to establish a national research council which will identify national research priorities and help the universities with their research. Another of its recommendations, setting up an accreditation council to ensure the quality of our higher education, is already in the process of being implemented with the passage of the Bangladesh Accreditation Council Act in the Parliament in 2017. The government has decided to establish a residential pedagogical training academy for the university teachers. It will conduct year round training in skill development in all areas of pedagogy and some specialized areas like governance, financial management and communication. Currently, the public universities are largely dependent on the government's budgetary allocation. SPHE 2018-2030 focuses on University-Industry collaboration for generating funds, particularly for research. It also proposes setting up an Office of Intellectual Property Management (OIPM) / Technology Transfer Office (TTO) for taking necessary measures to protect Intellectual Property of the teachers. The strategic plan has a pragmatic action to formulate a uniform recruitment rule for the public university teachers. It also has a provision to formulate a separate uniform recruitment rules and service rules for the private university teachers. SPHE 2018-2030 also emphasizes improving madrasa education both in terms of quality and delivery, and infrastructure. Thus the plan adopts a holistic vision for taking our higher education to a truly global standard. It will certainly help the government design future implementation plans for enriching higher education in Bangladesh.

I would like to extend my heartfelt thanks to the concerned academics, researchers, government officials, experts, business community representatives, World Bank and national consultant for successfully preparing the plan. I seek all sorts of cooperation from concerned Ministries/ Divisions, UGC and the universities to implement this long term plan.

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(Md. Sohorab Hossain)





Professor Abdul Mannan
Chairman
University Grants Commission of Bangladesh

Preface

Higher education in Bangladesh has witnessed a phenomenal growth in the last two decades -both in terms of number of universities, facilities and student intakes and the courses being taught. Starting with only 6 public universities in 1971, the country now has 45 public and more than a hundred private universities with a combined student population of 4.1 million (2017). The emergence of private providers in our higher education sector in the 1990s was a significant development that made education accessible to many students who could not be accommodated by the overcrowded public universities. There has been a shift towards science and technology education along with a growing demand for specialized disciplines such as medicine, pharmaceuticals, agriculture, textile and ceramics. Every year a large number of students also go abroad for higher education. With an increasing number of students passing out from higher secondary institutions every year going for higher education, it can be safely predicted that the sub sector will see more expansion in the future. The tertiary stage of Madrasa education is also witnessing a growth both in the number of students and institutions that provide such type of higher education

Growth alone however cannot be the sole criterion to measure either the effectiveness or relevance of higher education; it has to be supported by excellence in teaching and learning, research and ICT application, and most importantly, required funding. Unfortunately, our higher education still lacks the quality to be globally competitive. We also lack advanced management capabilities and true collegiality to foster an ideal learning environment. Government funding in higher education has remained in the same level for the past few years in spite of increasing needs.

With the arrival of the new millennium, which brought with it great expectations in every field of our national life matched by increasing economic development, these problems appeared to major roadblocks in our journey towards the future. There were attempts, both within the government and -the higher educational institutions to identify the nature and extent of the problems and find solutions. In 2005, the World Bank, which is a major partner in our pursuit of quality education, helped the Ministry of Education and UGC to investigate six areas of our higher education and come up with a strategic plan for development. The six areas were Vision, Mission and Direction; Governance; Quality; Future Funding; Research, and ICT. Accordingly, six committees were set up with noted academics and experts to generate reports, which were compiled and presented as a twenty year Strategic Plan for Higher Education 2006-2026 . However political and other developments that followed led to the abandonment of the Plan.

When the present government came to power in 2009, it felt the need to revive the plan, expand on its scope and recommendations in light of the changes that had taken place in the country in the intervening years. The government however couldn't immediately begin the work as it got preoccupied with such urgent tasks as reviving the economy, restoring law and order and establishing social harmony. Under the leadership of the Hon'ble Prime Minister Sheikh Hasina, the country is making impressive gains in economy, social development, health and nutrition, education, women's empowerment, ICT and every other field of our national engagement. In her vision of a prosperous Bangladesh, higher education has assumed a prominent place. In 2015 the Ministry of Education (MoE) asked UGC to start working on a strategic plan for higher

education for the future. The World Bank once again came forward to help the ministry and UGC to work on preparing a strategic plan to reflect the growing abilities and aspirations of the country and the need for quality and better governance.

Six expert committees were set up to generate reports in the same areas identified by the earlier strategic plan. Leading scholars, academics, researchers, experts, government officials and businessmen were invited to sit on the committees and prepare reports. The MoE formed a Strategic Planning Committee as proposed by UGC in 2016. The six reports were discussed, analyzed and commented on in a series of meetings with different stakeholders. Their recommendations and suggestions were incorporated in the final report which was compiled by a national consultant who was also asked to improve the reports where necessary. The final draft of Strategic Plan for Higher Education in Bangladesh 2018-2030 reflects the higher education ideals of National Education Policy 2010, the 7th Five Year Plan, the UN's SDGs and other relevant public documents.

The Plan was submitted to the Hon'ble Prime Minister who kindly gave it her approval.

SPHE 2018- 2030 has made extensive recommendations in all the six areas and has provided a detailed and phase-wise implementation plan. The major actions proposed include operationalizing the Bangladesh Accreditation Act 2017; setting up a Higher Education Commission to replace the existing University Grants Commission; increasing government funding; setting up a world class flagship university; enacting an umbrella legislation for public universities; amending the Private University Act 2010 to remove anomalies and encourage private universities to be more responsive to quality and students welfare ; improving management and delivery of National University and Bangladesh Open University; encouraging private participation and endowment support; ensuring proper, merit based and transparent faculty recruitment; enhancing financial management and transparency in the universities; introducing a need based scholarship program; setting up a Trust/Company for operating students loan program; setting up university-industry linkage; ensuring intellectual property rights; setting up a residential Pedagogical Training Academy for the university teachers and creating an ICT strategy for each HEI.

The Hon'ble Prime Minister has approved the upgrading of UGC into HEP which now awaits implementation. The government is very positive about all other actions proposed.

I am happy and proud to present SPHE 2018-2030 to our countrymen as it has been the result of long and strenuous labors of our educators, scholars, policy planners, researchers and academics. It lays the ground for a world class educational plan for our higher educational institutions which, when fully implemented with support from all the universities, the private sector and all other stakeholders will bring about a quantum leap in our higher education to make it globally competitive.

I am grateful to our Hon'ble Prime Minister for her support to our efforts to achieve excellence in education. I thank all the committee members and all those connected with the production of the plan and the report. I thank the national consultant for compiling and improving on the reports and coming up with the final report.

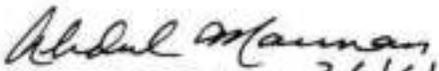

Professor Abdul Mannan 26/6/18

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Lists of Abbreviations

BAC	Bangladesh Accreditation Council
BASIS	Bangladesh Association of Software and Information Services
BCC	Bangladesh Computer Council
BdREN	Bangladesh Research Education Network
BNQF	Bangladesh National Qualification Framework
BOU	Bangladesh Open University
BPO	Business Process Outsourcing
BUET	Bangladesh University of Engineering and Technology
DPP	Development Project Proposal
DSHE	Directorate of Secondary and Higher Education
ECNEC	Executive Committee of the National Economic Council
GDP	Gross Domestic Product
GoB	Government of Bangladesh
HEC	Higher Education Commission
HEI	Higher Education Institution
HEQEP	Higher Education Quality Enhancement Project
HSC	Higher Secondary Certificate
IAP	Industry-Academy Partnership
IAU	Islamic Arabic University
ICT	Information and Communication Technology
ISPAB	Internet Service Providers Association of Bangladesh
IQAC	Institutional Quality Assurance Cell
IT	Information Technology
KPO	Knowledge Process Outsourcing
LMS	Learning Management System
MIS	Management Information System
MoE	Ministry of Education
MOOC	Massive Open Online Courses
NEP	National Education Policy
NRC	National Research Council

NQF	National Qualification Network
NTVQF	National Technical Vocational Qualification Framework
NU	National University
OBTL	Outcome Based Teaching Learning
OER	Open Educational Resources
OIPM	Office of Intellectual Property Management
PBF	Performance Based Funding
PEO	Program Educational Objectives
PMO	Prime Minister's Office
PPP	Public Private Partnership
QA	Quality Assurance
QE	Quality Enhancement
RMG	Ready Made Garments
SDG	Sustainable Development Goals
SPC	Strategic Planning Committee
SPHE	Strategic Plan for Higher Education
SPO	Software Process Outsourcing
TVET	Technical, Vocational Education and Training
UGC	University Grants Commission
UMS	University Management System
VC	Vice Chancellor

EXECUTIVE SUMMARY

A major involvement of the World Bank in Bangladesh's higher education has been Higher Education Quality Enhancement Project (HEQEP) which follows up on the suggestions and recommendations of the 2006 Strategic Plan prepared and based on a national consensus. In early 2007 the government of Bangladesh (GoB) approached the World Bank for providing assistance to design a development project to improve the higher education subsector. The HEQEP was launched in May 2009 and is scheduled to fold its wings in December 2018. With a financial outlay of US\$238.1 million, the project's main objective is

"To improve the quality and relevance of the teaching and research environment in higher education institutions through encouraging both innovations and accountability within universities and by enhancing the technical and institutional capacity of the higher education sector."

Source Development Project Proposal, HEQEP, UGC

In 2015 the UGC, considering the rapid changes in the country's economy, labor market and higher education, felt that an updating of the 2006 Strategic Plan was in order. The UGC began to take a close look at the 2006 report and recognized that the report's insights, findings and recommendations could be built on, expanded and streamlined for a more effective engagement with the rapidly evolving environment of the country's higher education subsector. As a result, UGC took the initiative to come up with an updated and comprehensive strategic plan for 2016-2026. However, the commencement date of the plan period was shifted to 2018 as it became apparent that finalizing the plan would take some time. The terminal date was also extended to 2030 in light of the higher education objectives of the government and in keeping with the aims of *Sustainable Development Goals (SDGs)*, a set of 17 global goals with 169 targets launched by the United Nations in September 2015, to be achieved by 2030. Bangladesh is pursuing the higher education objectives of the SDGs which are broadly similar to the ones set out in its *National Education Policy (NEP) 2010* and the *7th Five Year Plan (2016-2020)*. The extension also allows the Strategic Plan to add a comprehensive third phase of action plan (2028-2030) that makes SPHE 2018-2030 an achievable agenda.

This time, the aim has been to draw from the vision and insights of the 2006 Strategic Plan. Six committees were set up to look at the six broad areas that the 2006 Report covered. The six committees are

- Vision, Size and Direction Group
- Quality group
- Governance and Management group
- Future Funding group
- University Research group
- ICT in Higher Education group

Each group was given a specific set of terms of reference and was asked to review the 2006 Report and come up with recommendations and suggestions about major steps to be taken.

Although the six committees were given the task of looking at specific areas of higher education that fell under their broad focus, some areas, by their cross-cutting nature, were dealt with by more than one group. The enhanced role of UGC, or the need to have an accreditation council, for example, appeared to be shared concerns among most groups. In preparing the Executive Summary of SPHE 2018-2030, observations made in these areas in several committee reports have been mentioned only once in order to avoid repetition.

A. Vision, Size and Direction

A.1. Low budgetary allocation, higher enrolment

Despite the low budgetary allocation to higher education, enrolment in public higher educational institutions crossed 4 million in 2017 according to UGC, NU and BOU statistics, compared to only 31,000 in 1972, with strong growth in science and technology. This has been possible largely because of the higher success rates in Higher Secondary Certificate (HSC) and equivalent examinations and the contribution of science and technology universities set up by the government.

A.2. Contribution of private universities

Private universities which were set up under the 1992 Act have largely supplemented the crowded public universities. By enrolling our prospective graduates they also significantly decreased their flow to overseas universities. Some of these private universities have attained reasonable standards, with their graduates successfully competing with those of public universities for corporate sector jobs. In the last 25 years the total annual budget of the private universities has exceeded the total revenue budget of the public universities.

A.3. Need for an accreditation council

A major shortcoming of our higher education sub-sector has been the absence of an institutional mechanism such as an accreditation body to guide, supervise and monitor the programs of universities to ensure that they come up to globally accepted quality standards. That wait however finally ended when the *Accreditation Council Act* (Bangladesh Accreditation Council Act 2107) was passed in the national parliament on 7 March 2017. The Act has the following provisions (the text has been translated from Bangla)

- *Definition of Accreditation: An accreditation will be the recognition given to a higher education institution (HEI) or the curriculum prepared for any of its programs after the Council scrutinizes and evaluates them and ascertains that the HEI or the program fulfills the requirements of qualification framework.*
- *The appointment of a Chairman, four full-time and eight part-time members for the Council*
- *The Chairman will be a distinguished academic with experience in administration, quality assurance and accreditation, and at least 25 years of teaching experience in a university (of which at least 10 years as professor).*

- *The full-time members will be distinguished academics with 20 years of teaching experience in universities (with at least 10 years as professor), or individuals with 25 years of experience in working in the administration of the government.*
- *The part time members will be i) a full time member of the UGC, ii) an official not below the rank of Joint Secretary iii) the President of the Association of Private Universities of Bangladesh or a member of its executive committee nominated by the President, iv) A quality assurance and accreditation expert from abroad nominated by the government, v) a representative from the professional bodies nominated by the government, vi) a medical educationist nominated by Bangladesh Medical and Dental Council, vii) a distinguished academic nominated by the government, and viii) an experienced IT expert nominated by the government.*
- *Responsibilities: The Accreditation Council will ensure that the HEIs and the programs they offer conform to the qualification and quality assurance standards set by the BNQF. On receiving an application from an HEI, the Council will set up separate committees for each discipline applied for, and depending on their report, will either provide or deny accreditation to the programs. The Council will lay down conditions for the provision of Accreditation and Confidence Certificates. It can also cancel or revoke the accreditation given to an HEI or program on specific grounds.*
- *Transparency and accountability: The Council will be accountable to the government for all its activities. The application process for an accreditation certificate, granting or rejecting accreditation, the validity of the accreditation certificate, audit and assessment, and cancellation of accreditation will be done strictly according to the Council's rules and regulations.*
- *The accreditation certificates of the HEIs will also be posted on the Council's website for information of the general public.*

Source: Bangladesh Accreditation Council Act 2107 Translated from Bangla.

A.4. Vision 2021

One of the significant developments that took place in the last ten years – and which has added strength to the need of quality higher education – has been the vision of *Digital Bangladesh* to be achieved by 2021, which was later extended to 2041 in favor of a more comprehensive plan of action. The vision has sparked a spectacular progress in the Information Technology (IT) sector of Bangladesh.

It is necessary that our vision for higher education is compatible with the vision of a Digital Bangladesh. Our universities should be true centers of excellence where, along with acquiring knowledge, skills and competence of the highest level, students will practice democratic norms and cultural values and will be conversant with economic development issues.

A.5. Three streams of higher education

University education in Bangladesh may be divided into 3 broad streams (i) The National University (NU) which had 59.68% of the total higher education enrolment (according to UGC Report 2015), (ii) the public and private universities, which together had 17.11 %, and (iii) the Islamic Arabic University (IAU) which accounted for 17.22 % of the total aggregate students pursuing higher education. In addition,

Bangladesh Open University's higher education segment accounted for 5.98 % of the total student population in higher education.

A.6. Need for quality education for future progress and for better jobs

Although Bangladesh has achieved remarkable growth in its GDP over the past 15 years (5.5% – 7.05%), to take the rate into 8% and beyond we need to enhance the quality of higher education, increase the graduates' skills and competence, integrate technological content into curricula and ensure the conversion of a very large number of people into human capital who can compete successfully in the global knowledge economy.

A.7. Rationalizing enrolment in higher education

The total higher education enrolment over the next decade (2016-2026) will see a significant increase. However, we need to rationalize the intake into public universities so that students do not crowd into subjects and disciplines which do not impart the required skills in a rapidly changing economy and production system to adequately prepare them for productive careers. To that end we will strengthen Technical, Vocational Education and Training (TVET) thrust which will take a good segment of HSC and equivalent stream students away from the path of universities to vocations. Rationalizing the higher education intake is also closely linked with the diversification of the tertiary education sub-sector in its entirety to make it more responsive to the needs of the labor market. A holistic approach is needed to address all the areas of improvement in this regard so that the country can have a resource base from which to draw to fulfil the requirements of our knowledge industry, economy and development¹.

A.8. Need for a Higher Education Commission (HEC)

When UGC was set up in 1973 (according to a Presidential Order) it had only six public universities to supervise in addition to performing its other statutory duties. Over the years however, not only has the number of public universities increased manifold, a large number of private universities have emerged with a combined student population larger than that of the public universities (except for the National University). Besides, UGC is entrusted with the responsibility of monitoring progress in our higher education sector in line with the *National Education Policy, 2010* and other government development plans which include specific instruments and goals for the country's higher education subsector. UGC will also have to oversee the implementation of the *Strategic Plan for Higher Education 2018-2030*. In its current set up and with its capacity, human resources and legal authority UGC is not in a position to carry out its responsibilities as effectively and efficiently as these are needed to be done. UGC is therefore, expected to be transformed into a Higher Education Commission (HEC), with vastly enhanced financial and human resources capacity and legal authority to play a pivotal role in taking Bangladesh higher education to global standards. HEC will have a vision and a set of specific objectives concerning higher education. It will be given broad based responsibilities for monitoring activities in the universities, ensuring quality higher education for all, and facilitating research.

A promising development in this area has been a recent confirmation by the Minister, Ministry of Education (as reported in *Daily Samakal* on 9 March 2017) that plans for setting up a higher education commission are "in the final stage."

A.9. Shape of our higher education in the next 13 years (2018-2030)

The Strategic Plan period spans the most challenging years for the nation during which it will have to speed up its development process and raise the standard of higher education to produce graduates who will have wide ranging skill sets and competence to thrive in the highly competitive global environment.

¹ In 1962 Fritz Machlup, an Austrian-American economist, in his book *The Production and Distribution of Knowledge in the United States* (Princeton University Press) introduced the concept of knowledge industry to mean a sector that comprises education, research and development, information technologies and services and mass media.

The world has witnessed a shift towards innovation-mediated production system which considers knowledge more important in the production system than labor or capital. The paradigm shift entails that our graduates must have the ability to acquire and utilize new knowledge; match global standards in education and research; have the highest skills and competence in areas ranging from science and technology, business, communication and ICT to agriculture and life sciences and have advanced management capabilities. To achieve these goals, the government will have to increase education's share in GDP to 6 %, and the national budget allocation to higher education also to 6 % by 2030.

SHED will encourage UGC to periodically study the labor market, monitor demographic changes and other issues that may impact our higher education and suggest ways of turning this into an advantage.

B. Quality enhancement

B.1. Institutional Quality Assurance Cells (IQACs) and quality enhancement mechanisms

In the backdrop of mounting concerns for quality in our higher education, the University Grants Commission (UGC) has established a Quality Assurance unit under HEQEP which has set up Institutional Quality Assurance Cells (IQACs) in public and private universities. The IQACs in turn have initiated Self-Assessment (SA) exercises in university departments and institutes. By 2017 about 810 departments in 69 universities have undertaken SA. It is expected that these exercises will lead to quality enhancement at all levels of university education, teaching-learning and assessment systems. These exercises would be further strengthened through the implementation of the *Bangladesh Accreditation Council Act, 2017*.

Once a long term strategic plan has been adopted, quality enhancement mechanisms will be set up to carry out continuous assessment of all academic activities. This will involve initiatives to introduce, improve, promote and update programs and activities that cover internal and external quality assurance initiatives, financial transparency, student and faculty intake, research, institutional autonomy, faculty development, assessment and examination, ethics and values and a host of other areas that together constitute the world of higher education.

B.2. Key areas of innovation

Many aspects of higher education that are standard exercises in the globally ranked universities are missing in our country's universities, such as setting up guidelines for planning and developing strategies for the future, establishing standards in curriculum and research, setting up clear learning outcomes as well as securing excellence in governance and management through transparent mechanisms. We have not only to introduce the exercises as part of our quality engagement, but to innovate on ways to make them effective. These and other such areas, such as periodic monitoring of outputs and assessment of student learning outcomes will be among the areas of key innovation in the coming years.

B.3. Need for a long term strategic plan

Each HEI will prepare a long term, 5-years thematic strategic plan with specific targets and objectives which will be crucial for improving its educational standards and continued development. The plan will show phase wise activities in all aspects of university management including teaching-learning, research, student and faculty intake, new courses and departments planned, construction and financial outlay, etc.

B.4. Setting up a world class flagship university

Strong initiatives will be taken to set up a world-class flagship university which will further Bangladesh's intellectual capital. However, given the country's resource constraints and the novelty of the concept in the context of our higher education, it is proposed that one new world-class flagship university will initially be set up, which may be replicated later to meet emerging national research needs. Upgrading an existing university into a world class flagship university will not be a feasible option as it will involve

shifting and relocating existing undergraduate student populations and junior faculty (as well as some staff) to other universities. Such a move will have legal complications that may not be easy to solve. The flagship university will thus be a new initiative and set up with all the infrastructural, research and other facilities in keeping with those that similar regional and international universities enjoy. Besides, special recruitment and service rules, and a separate pay structure for local and foreign academics and researchers will be introduced.

B.5. Strengthening distance learning

The distance-mode of higher education will be strengthened. The principal institution imparting distance education in Bangladesh is the Bangladesh Open University (BOU) which was set up under *Bangladesh Open University Act, 1992*. Ever since its inception, BOU has been slowly building on its student enrolment, expanding its reach and the areas of teaching. In 2017 it had twelve Regional Resource Centres, eighty Sub Regional Centres and about 1600 Study Centres geographically distributed all over the country and has so far introduced forty-three formal academic programs and nineteen non-formal programs in agriculture, primary health care, nutrition and some other areas. But BOU needs to improve its higher education component in terms of quality, course content and mode of delivery. It is expected to acquire adequate technical facilities and logistics to launch massive open online courses (MOOC), a highly qualified resource pool of teachers and researchers and other facilities. Private universities offering distance learning courses will also be strictly supervised for meeting quality standards.

B.6. Linkages with higher education institutions (HEIs) abroad

Linkages with higher education providers in the region and beyond, particularly with those known for academic and administrative best practices, are important for sharing experiences, understanding limitations as well as how best to overcome them, and making the best use of the high-performance connectivity and big data. This will also contribute to our efforts to achieve sustainable human development through education.

B.7. Short- and long-term teaching strategies

Both short and long-term strategies (1-year and 5-year) for teaching are necessary for bringing university teaching skills up to the regional and eventually global standards. To do so, the following steps will be taken

- Periodic review and self-assessment of faculty teaching, and periodic curriculum revisions and upgradations. Besides, developing virtual classrooms, online learning and teaching, and developing outreach programs to maximize the delivery of distance education will be given importance.
- Adoption of Bangladesh National Qualification Network (NQF) in keeping with International Qualification Framework. The Quality Assurance Unit (QAU) of UGC is currently drafting the National Qualification Framework. The Accreditation Council, Bangladesh will supervise its compliance by the universities and update it from time to time. A national technical vocational qualification framework (NTVQF) approved by the government in 2011 is being implemented and supervised by the National Skills Development Council Secretariat under Prime Minister Office (PMO). There is need to synchronize NTVQF and the proposed NQF

B.8. Strategies to improve research skills

Both short and long-term strategies for research (1-year to 5-year) having clear objectives and focus on outcome that will support teaching-learning and innovation – that will also reflect the country's drive for skills development and high-value research – will be developed for the universities. This will necessitate providing facilities and funding for research and publication, periodic review and self-assessment of faculty research, and rewards/ recognition for high quality research.

B.9. Setting up a Central Research Laboratory

Steps will be taken to set up a Central Research Laboratory for enhancing quality in scientific, industrial and technological research. The Bangladesh Council of Scientific and Industrial Research (BCSIR) with its four regional laboratories may be upgraded into a state of the art Central Research Laboratory and provided with the latest equipment, facilities and logistical support.

B.10. Training operations / maintenance personnel

An overlooked aspect of our research is the need to train operations and maintenance personnel for ensuring proper and uninterrupted functioning of all the equipment, machineries, instruments and systems. Training the operations and maintenance personnel on a continuous basis will be a priority area in the research programs of our HEIs.

B.11. Upgrading feeder systems' curricula

The curricula of the secondary and higher secondary education will show a consistency and a gradual approach towards enhancing knowledge and skills so that a student enrolling in higher education does not face a steep quality jump.

C. Managing the systems of the universities

C.1. Autonomy

It is generally believed that greater institutional autonomy increases flexibility, which in turn improves relevance and quality, and enhances productivity. At the same time, the importance of governance and respect towards regulation is extremely crucial. Autonomy can be academic and financial – regardless of who is financing. Public universities can also exercise financial autonomy for their self-financed/generated funds. However, universities still have to depend on government financing which sets a limit to their autonomy. To be autonomous in the real sense, universities have to be financially solvent. They will therefore try to generate as much funding on their own as possible.

C.2. Need for an umbrella legislation for public universities

The existing Acts of the universities lack uniformity and cohesion and are, at times, anomalous. The University of Dhaka, for example, is governed by *President's Order of 1973*, while Rajshahi, Chittagong and Jahangirnagar universities are run under three different Acts. Each new university is also governed under different legislative arrangements. There are many points of difference among these legal provisions. There is thus a pressing need to develop and bring the many laws of different universities under a single “umbrella legislation” which will clarify, among others

- The respective roles of the Secondary and Higher Education Division (SHED), Ministry of Education, UGC (or HEC) and the governing bodies of the institutions.
- The governance structures of the public universities.
- Composition of the senate and syndicate of public universities with a balanced representation of all possible stakeholders, such as teachers, alumni, employees, industry, civil society, sponsors, students' union and the government.
- The roles and accountability of different stakeholders, and
- Uniform rules for recruitment and promotion of teachers and the overall academic administration of the universities.

The umbrella legislation will cover the basic functions of the public universities while each university will be free to perform other functions not mentioned in the umbrella legislation according to the legislation governing it. The new umbrella legislation will need to be passed in the parliament. This will require discussion with all the public universities to reflect their aspirations.

C.3. Amending the Private University Act 2010

The Private University Act 2010 needs to be amended to include representation of the government and other stakeholders in the Board of Trustees to ensure better management, quality assurance and good governance, and remove irregularities. Such an amendment will clearly define the roles of private university stakeholder groups (e.g. Board of Trustees, Syndicate). The UGC/HEC will be expected to show a firm determination to take action against delinquent universities as and when necessary and withstand political pressure to ensure that no university is allowed to operate or open which does not fulfill the requirements laid down in the amended Act.

C.4. Supervising private universities

Private universities will be supervised more closely to restrict interference by sponsor groups and trustees. Currently, Vice Chancellors do not enjoy adequate freedom to take decisions and decide policy matters in respect of academic and institutional development matters. The UGC/HEC will, in the light of the

National Education Policy 2010, revisit the *Private University Act 2010* and suggest necessary changes to make the universities truly dynamic where individual autonomy is respected.

C.5. The National University (NU)

According to data provided by the NU Vice Chancellor, the National University in 2017 had 2249 affiliated and incorporated colleges (of them, 275 are government and 1974 non-government colleges, 770+ imparting only BA Honors programs, 145 both MA Preliminary and Final programs and 123 are exclusively for women). It is thus a key player in providing higher education to a large number of students, but it needs to be restructured for better and quality enhanced delivery of education. The operational structure of the university will be further streamlined. The university has 6 regional centers in 6 administrative division headquarters of the country (excluding the central campus at Gazipur) which are placed under a Director level official. Their primary function is to supervise colleges to ensure proper academic and administrative functioning and managing examinations. With the shifting of these regional centers to permanent facilities (at present they operate from rented premises) more academic activities including training of college teachers will be delegated to them. In its meeting of 17th October 2017, the ECNEC gave approval to three permanent regional centers in the first phase. The university needs further decentralization of its activities; and the regional centers, to be placed ideally under a Pro-Vice Chancellor, will be empowered to administer examinations and manage the affiliated colleges.

Among NU's affiliated colleges, the larger ones in the district headquarters, especially where there are no public universities, will be given all the infrastructural, academic and other facilities along with a fair degree of autonomy with the aim of upgrading them into public universities. A majority of these universities will focus on science and technology and specialized subjects.

It should be noted here that under the College Education Development Project, MoE and NU, together with other relevant agencies, are drafting a College Education Strategic Plan which is expected to be in line with the SPHE 2018-2030.

C.6. Government colleges' affiliation with public universities

A new development that reduces NU's hold over the colleges will be closely studied for its implication both for the new affiliating universities and NU and the capacity development of the colleges. The government is planning to de-affiliate, in phases, a number of government colleges from NU, and re-affiliate them with public universities (initially Dhaka, Rajshahi and Chittagong universities) for administering their examinations and managing their academic affairs. This will no doubt put additional pressure on the public universities which do not have the manpower or the expertise to run the colleges. The combined student population of the colleges is many times larger than some of the universities they will be affiliated with. Unless the universities, especially the examination sections, are adequately staffed and necessary funds are made available, the move might destabilize the higher education scene of these colleges. Besides, the Bachelor's and Master's programs of the colleges need to be streamlined in the light of the syllabi of the respective departments of the universities (where they exist) of the affiliating public universities. These issues will be adequately addressed.

There is also the problem of dual administration of the colleges that has made NU's effort to enhance quality in the education provided by the colleges difficult. While NU administers the academic and examination related matters of colleges, the Directorate of Secondary and Higher Education (DSHE), under the Secondary and Higher Education Division of MoE, administers the recruitment/selection of teachers and their placement, promotion etc. The problem will persist after the public universities take on the responsibility of the government colleges. Since the government aims to enhance the quality of the colleges and plans to upgrade some of them eventually into public universities, it will draw up a plan to give the responsibility of teachers' recruitment/selection and other matters to the public universities. This might take some time as many legal and procedural matters are involved, but eventually this will have to be done to take our higher education to global standards.

When the government decision to re-affiliate government colleges is implemented in phases, the newly affiliating public university/universities may set up a special cell/wing under a Pro-Vice Chancellor to deal with the colleges, with sufficient human resources and trained personnel to supervise and monitor the academic activities of the colleges and conduct the examinations. The Pro-Vice Chancellor will liaise with DSHE and Secondary and Higher Education Division (SHED) of MoE to ensure the best management of the colleges.

C.7. Bangladesh Open University (BOU)

The BOU will further upgrade and modernize its distance education programs to bring them in line with global standards. It will eventually delegate its HSC and SSC programs to selected schools and higher secondary institutions and shift towards professional skill focused learning.

C.8. Islamic Arabic University (IAU)

The government will develop a clear policy guideline and supervision as it is the apex body that oversees the academic activities of Aliya Madrasas which offer Fazil (Bachelor's) and Kamil (Master's) programs to a large number of students. IAU is expected to bring the higher education component of the two main streams of Madrasa education — the Aliya and Qawmi madrasa based education — under its jurisdiction. Their curriculum will be modernized and continuously updated in light of the *National Education Policy 2010* so that their students can compete in the job market, pursue productive careers and serve the society. Dealing with the *Qawmi* madrasas may prove to be difficult though, as they prefer to remain independent. The government recently accorded post-graduate status to *Dawrah-e-Hadith* certificate conferred by the Qawmi madrasas on students with the fundamentals of *Darul Uloom Deoband* as the basis. This was confirmed by a gazette order issued by the Ministry of Education on 13th April 2017. The government has plans to bring the Master's stream of the Qawmi madrasas under the supervision and control of IAU to give the students wider options in choosing their career.

C.9. Encouraging private participation and endowment support

The Secondary and Higher Education Division (SHED) of the Ministry of Education (MoE) is responsible for policy formulation in regard to the vision, size, shape and direction of the higher education sector. The Division transfers government funding to the universities through UGC. The Division will encourage private participation and endowment support in key sectors of higher education but the universities will also play an important role in mobilizing resources and funding from the private sector.

SHED may encourage UGC to undertake periodic research to determine the demand for human resources and review university curricula to make them responsive to this area. With MoE's support, the universities will widen their training, seminar and other research and development activities. At the same time, universities will start building their resource base by selling intellectual property and offering consultancy services, through technology transfer to industry and business entities, and by generating income from sharing research outcomes and designing innovation ecosystems. This will reduce quality gaps between and within universities.

C.10. Governance of public universities, doing away with political interference

The governing bodies, i.e. the Syndicates of public universities will have the full responsibility of governance of their institutions, although they will be accountable to the UGC/HEC and SHED. The universities will resist political interference in their academic affairs and management. Students' politics will not be discouraged but it will be directed towards the welfare of the university community, the people and the country and not affiliated to narrow, partisan politics of the country.

C.11. Standard Operating Procedure (SOP)

There will be mechanisms for evaluation of students and faculty for optimizing their performance. Universities will outline and submit an SOP (standard operating procedure) to UGC/ HEC for every academic and administrative position, which will be considered a by-law.

C.12. Better management of semester system

An important area which will be closely looked at is the semester system in the public universities. No public university is in a position to ideally run the semester system. Apart from large student populations and teacher-student ratios, inadequate logistics and digital support, and short teaching hours which go against an effective semester system, the completion period of semesters is often extended by late publication of results because of the dependence on traditional method of question setting and script checking (double examiners). The semester system does not suit many science subjects. It needs to be streamlined and reformed to conform to global practices.

Most private universities offer three semesters (actually trimesters) covering one academic year. This has contributed to quality loss as completing a full credit course in a trimester (usually 14-weeks) is not possible without compromising on the course content. The private universities will adopt a 6-month long semester system for delivering quality.

C.13. Faculty management

All the universities will draft and maintain a robust faculty management system for efficient delivery of services and to prevent wastage of resources and system loss. The universities will prepare a Faculty Management Manual to this effect.

C.14. Autonomy and collegiality Individual autonomy of faculty will be respected but it will in no way affect collegiality.

C.15. Separation of academic and administrative functions

The administrative and academic functions within an institution of higher education will be separated and monitored by the Coordination and Development Committee (C &D) and Academic Committee (AC) of every university department and institute.

C.16. Financial transparency of university units

Strengthening the capacity of institutional financial management is a critical issue in managing our higher education institutions in a transparent and accountable manner. Departments / Institutes / Schools / Faculties / Centers / Universities must maintain a book of accounts for better financial management of the university. To this end there will be a proper budgetary planning reflecting the financial situation of the university, which will be reevaluated and revised whenever necessary. Besides, attempts will be made to develop financial goals, and create and implement a financial action plan. But transparency and accountability will be maintained in every step of the implementation of the budget and other financial instruments.

C.17. Democratization of universities

The 1973 President's Order and the three Acts which govern the four large public universities (Dhaka, Rajshahi, Chittagong and Jahangirnagar Universities) stress democratization of higher seats of learning, but the public universities established after the independence of Bangladesh remain outside their purview. It is therefore essential to bring all public universities under a single framework for democratization to work, ensuring individual ownership, sharing of authority and responsibility.

Democratic principles will be reflected in the appointment of Vice Chancellors and other important functionaries of the universities.

C.18. Sharing a common vision and values

A consensus among stakeholders will be developed to share a common vision, values and norms for transforming the higher education institutions into centers of excellence, i.e., institutions with a proven record of best practices in teaching, learning and research and other areas of competence and capability such as in ICT and global connectivity.

C.19. Managing dormitories

Dormitories / hostels / halls will have improved governance to ensure the best possible delivery of food and nutrition, living standards, health care and IT/Wi-Fi facilities.

C.20. Academic calendar An academic calendar will be prepared and maintained by every Department / Faculty / Institute.

C.21. Cluster-wise admission system for all public universities

A cluster-wise admission system will be introduced for different categories of public universities (such as General, Specialized, Engineering and Technological). Each cluster of universities will arrange unit wise admission tests on the same day based on the same set of questions. This will reduce wastage of time, money and hassle of the admission seekers. Eventually however, universities will devise ways of administering admission tests online.

C.22. Campus security

Specially trained campus security teams / campus police will be raised to maintain peace in the campus. Such teams will ideally include university graduates possessing advanced communication skills, as well as extensive training in maintaining security.

C.23. Digitalization of BOU and NU

The UGC/HEC will take into account the vast benefits offered by digitalization and the need to improve both the delivery and quality of Bangladesh Open University (BOU), as well as National University (NU). If a set of quality control and quality enhancement criteria is applied and enforced in BOU, open learning will see vast improvements. Similarly, connectivity among all the colleges of NU will significantly improve their academic and management capabilities.

C.24. Improving financial management

Financial Management in the universities—now, and when government funding is increased along the line suggested in the Strategic Plan – will be strengthened through proper planning, organizing and monitoring of the fund; adopting a zero based budgeting²; harnessing outside resources (such as endowment, foreign funding); proper resource allocation; developing financial accountability and forging partnership with industry, business and public services. All transactions will be automated including all types of in-ward and out-ward transactions.

C.25. Monitoring extra-academic activities of students and faculty

Extra academic activities of students and teachers will be monitored as far as practicable to ensure that no one has links to any outfit promoting a destructive ideology or hatred and intolerance. No one will be allowed to destroy the social and constitutional fabric of the nation.

² Zero based budgeting (ZBB) is a method of budgeting in which all expenses must be justified for each new period. ZBB starts from a “zero base,” and every function within an organization is analyzed for its needs and costs

C.26. Recruitment of faculty

Universities will insist on recruiting teachers with the highest levels of qualifications and achievements in their respective areas. To this end, existing recruitment rules of the public university teachers will be revised. Possession of a Ph.D. degree will be a requirement for a teaching provision. However, to draw outstanding graduates, provisions will be made for them to work as teaching/research assistants - which will involve some teaching - while doing their Ph.D. research. If a World class flagship university and a National Research Council (NRC) are set up, getting faculty with Ph.D. degrees should be easier.

UGC in its Annual Report 2015 suggested recruiting entry level faculty (Lecturers) through a combination of written test, demonstration class and interview. UGC/HEC will start a dialogue with the universities to come up with a recruitment and promotion system that best serves their requirement.

C.27. Reorganizing the governing bodies of public universities

The governing bodies of public universities will be reorganized to accommodate wider representation of stakeholder groups (including members of civil society, sponsors and Industry) to make them more transparent and participatory.

D. Future funding strategies

D.1. Streamlining funding strategies

University funding, particularly public university funding, is complex because it covers a range of different activities which are not always transparent in a given political context. Besides, policies and programs change over time. Inflation and enrolment figures also complicate the picture. But funding strategies, despite these problems, will be streamlined and enhanced to address changing needs.

D.2. Government funding of public universities

The major share of higher education in Bangladesh is almost exclusively borne by the government. However, in recent years, the public-sector funding is seeing a decline. And in spite of the increase in the total number of students entering the universities (244,363 in 34 public universities in 2015) government funding for the public universities has remained at the same level⁵.

D.3. Increasing government funding of public universities

Considering the fact that sufficient investment is required to maintain and enhance the quality of education, there is no alternative to increasing government budgetary allocation for public universities. UGC reiterates the need for increasing government non-development (recurring) expenditures from the 0.12% of GDP in 2015 to at least 1% of GDP by the end of 2018. While government allocation for education in the 2015 budget was 8% of the national budget, it is unlikely that the target can be achieved very soon, but the government will aim to do so by 2021 to reflect the spirit of Vision 2021. A graduated plan to raise higher education's share in the GDP will be taken up so that by 2030 higher education gets 6 % of the national budget allocation.

D.4. Performance based funding

The distribution of government funds to the public universities follows a historical pattern where allocation is made on the basis of manpower and establishment costs, leaving out the fund requirements

⁵ In FY 2015/2016 the 2014/2015 total size of the GDP (in current price) was BDT 17295 billion; in the same FY government allocation for public universities was BDT 24.45 billion; Bangladesh Economic Review, 2016, Finance Division, Non-Development and Development Budget, 2016, UGC. In FY 2016/17 total allocation for education in national budget (both non-development and development) was BDT 269 billion which was 8% of the national budget (BDT 3406 billion); Ministry of Education website <http://www.moedu.gov.bd/site/page/2d6>

for academic development and research. But a more pragmatic and satisfactory approach could be Performance Based Funding (PBF) which allocates government's education budget according to specific performance measures (such as enrolment, course completion, retention, degree completion, etc.). If funds are allocated on the basis of the outcome/output model, the government allocation will have to be doubled since the pass rate in the universities is 99% which is regarded as excellent.

D.5. Increasing education efficiency

Apart from government's funding, education efficiency is considered an alternative source of funding in many countries. Increasing efficiency is seen as a decreasing resource wastage which implies generation of additional resources which leads to savings.

D.6. Increasing cost efficiency

In Bangladesh it is possible to increase cost efficiency by exploiting economies of scale and allocative efficiency.

D.7. Alumni support

The Alumni of the universities will be tapped to build resources. Each university will ensure that fund raising and outreach efforts concentrate most strongly on those areas where the need is the greatest. The alumni who invest in their university are expected to be given tax benefits or recognitions.

D.8. Endowments

Big industrial and business houses will be approached by the universities for endowments to enrich their resource base as practiced in many universities around the world.⁴

D.9. University-Industry linkage

A strong university-industry linkage and collaboration for research and institutional arrangements for commercialization of university research outcomes will be established. However, this will necessitate putting into place a legal instrument. Bangladesh can follow the *Bayh-Dole Act of USA* to set up such an instrument. If universities collaborate with industry, a range of formal activities such as collaborative research, contract research, consultancy and the provision of ad-hoc advice and networking with practitioners can be accomplished with the aim of generating additional funds for the university.

D.10. Community level fund generation

The government will formulate a policy guideline under which the public and private universities may generate funds at the community level. The policy will specify terms of engagement, modalities, ethics and other aspects of fund raising, and maintaining the rationale, transparency and accountability in fund use.

D.11. Need based scholarship

Need based scholarships will be provided to those who fulfill eligibility requirements. A sizeable government budget is expected to be earmarked for scholarships, and other means of funding. Private universities will also earmark at least 2% to 5% of their total revenue collection in a financial year for scholarships / grants.

⁴ In 2015 Harvard University's endowment amounted to US\$ 37.6 billion

D.12. Strengthening financial management capacity

Financial management capacity of the public universities will be strengthened and automatized/digitized. A set of sound uniform financial management guidelines and accountability mechanisms will also be in place for all universities. They will follow a uniform format of financial reporting and use a mechanism of independent external audit. Universities will adopt a state of the art accounting software to make the management of funds very accurate.

D.13. Diversifying revenue sources by private universities

Private universities will try to diversify their sources of revenue (currently student fees are their only earnings). They universities will strive to create additional funds as endowments from alumni and wealthy members of the community and by offering non-degree training courses and receiving research funds from home and abroad.

D.14. Student loans

The government will explore the possibility of arranging student loans. It will consider setting up a Trust/Company with enough endowment to provide loans to the needy students. The Trust/Company will also raise funds from development partners but the loans will be provided on soft terms, the interest being not more than 1 %. The Trust/Company will formulate its operating modalities including disbursement and recovery strategies based on international experiences.

The government will encourage banks/financial institutions to provide soft loans to students with a low interest rate and a flexible recovery plan. The loans currently provided are consumer loans whose interest rates are quite high.

D.15. Student fees

Student fees may be rationalized according to parents' income. A regulatory body will be set up which will decide the principles and operating mechanism for deciding student fees and waivers. UGC will start a dialogue with students, parents and stakeholder groups for arriving at a consensus on these matters.

E. University research

E.1. Current state of research in HEIs

The current status of research in the higher education institutions of Bangladesh is unsatisfactory. Universities do not have facilities to do research for a lack of funding; research goals are also missing and heavy teaching load of the faculty impedes research. Recruitment and promotion do not always depend on research – political consideration, indeed, often plays a part in this regard. There is also no staff development program. Entry level (lectureship) recruitment does not require a doctorate degree, and many senior level faculty members also do not hold doctorates. These issues will be addressed to significantly enhance the quality, need and relevance of university research.

E.2. Increasing budget for research in HEIs

Budget for higher education in Bangladesh is meager, compared to those in other Asian universities. The amount of money allocated to research (by SHED through UGC) was BDT 120 million in 1980-81, BDT 247 million in 2000-2001, BDT 1000 million in 2006-2007 and BDT 2087 million in 2013-2014. From 2011 HEQEP has disbursed BDT 7008 million (US\$ 89 million) to the universities under three rounds of AIF. A round 4 was recently launched with allocation of about BDT 600 million (US\$ 9 million). The HEQEP fund instilled a research and innovation culture in the universities which will be institutionalized for the knowledge economy of Bangladesh to flourish. The total amount provided to subprojects is BDT 3534 million. It is important that such funding is continued in the future.

E.3. Setting up a National Research Council

Bangladesh needs to set up a National Research Council (NRC) under an Act of parliament to provide research the priority it demands if we expect our higher education to reach global standards. NRC will set up a national research strategy to formulate policy guidelines, research activities in all institutions of higher education and organize funding from all possible sources. It will also work as a feeder body to the various centers of excellence and learned societies and support research done in government ministries and the private sector. Its main role then would be to evaluate, allocate, coordinate and harmonize nationwide research programs. There have been many suggestions about the placement of NRC -- whether it should be a part of UGC/HEC or placed under the Prime Minister's Office as a special entity or any other specialized ministry. But considering the limitations of UGC/HEC in supervising a research organization of the magnitude of NRC, and the different mandate NRC will have, and the fact that the Rules of Business under which the PMO functions do not have scope to operate a research institution of the nature of NRC, it will function as an independent body with the required autonomy to achieve its operational goals.

E.4. Establishing a world-class flagship university

Strong initiatives will be taken to set up a world-class flagship university (and eventually, when the need arises, one or more such universities) in the country. The flagship university will provide advanced education in specialized areas such as science and technology, energy, environment, social sciences, green architecture etc. and facilities for high value research. It will also train policy makers and public and private sector professionals involved in the complex, globalized economies of the 21st century. The university will also play the role of a cultural institution, a center for social commentary and an intellectual hub. The world-class flagship university will concentrate on post-graduate education and offer research based Master's and Ph.D. degrees with a strong focus on high quality research. The flagship university will be established as a new university with all the necessary infrastructure support and state of the art facilities and with academics/ researchers/ scholars with the highest distinctions.

Upgradation of an existing university into a world-class flagship university, which some consider an option, will be a difficult task involving shifting / relocating the university's undergraduate student

population and junior faculty (and some staff) to other universities. There may also be legal issues involved. Considering all these factors, it is better to make a fresh start with the concept of Flagship University, setting up a new one at a convenient location, with the intention of making it a world-class flagship university in the country and the region.

The flagship university to be effective and truly representative of our higher education ideals will maintain the highest standards in its research goals and outcomes and emphasize proper recruitment and selection, group climate, mentoring, communication resources, etc. It will have a considerable degree of autonomy, liberal funding support and faculty resources. To build research as a core activity in the flagship university key partnerships will be built with other universities, research institutions and academic community of the country and abroad, as well as the industry and social development agencies.

E.5. Teaching-research universities

All the public universities of the country other than the specialized world class flagship university will fall in this category. These universities do both teaching and research and training, but their research approach, focus and outcome will have to be vastly improved to match national expectations. Research done in these universities will be of high standard although it will vary in intensity and scope from research done in the world class flagship university. These universities will build excellent teaching-learning environments.

E.6. Basic and applied research

The debate between basic and applied research will be kept in view while setting research priorities in our higher education sector. Basic research seeks to produce new knowledge without any application in mind. It is also costly and time consuming. The universities may engage in “strategic” research that combines application needs of the country and take up basic research collaboration with international universities.

E.7. Incentive for research

Research activities will be rewarded for providing desired results. Potential rewards will include money, promotion, new responsibilities and status. Other supports may include sufficient budget, seed grants, venture capital, funded research chairs, fellowship programs, conference travel, international publication support, short-term releases and other facilities.

E.8. Intellectual Property Rights (IPRs)

An important concern in higher research is intellectual property rights. Intellectual property – intangible products resulting from creative efforts (information, invention, soft wares, databases, designs, models, methods, literary works, services, etc.) – should be protected and ownership safe guarded. All intellectual property will be owned by the university if creators used significant university resources and facilities and are funded by sources administered by the university. The creators may however retain ownership where the university is not involved in funding or providing facilities.

Upon mutual agreement, creators may assign their intellectual property to the university to be managed by an Office of Intellectual Property Management (OIPM) or Technology Transfer Office (TTO). There will be clear provisions related to publication, income sharing, university administration, intellectual property, and disclosure to be followed.

Bangladesh may benefit from the *Bayh-Dole Act of 1980* of USA for fine tuning terminologies, procedures and policies of IPR. According to the Act, US universities and small businesses can own inventions made from federally-funded projects. This has been an important step in technology transfer among the universities and between industry and university. The Act encourages universities to build partnership with commercial concerns for utilizing the inventions arising from government funding. Universities may file patent rights to inventions they prefer to retain and are encouraged to give licensing

preference to small businesses. The government, in its turn, retains march-in rights and a non-exclusive license to use the patent anywhere in the world.

This legislation is relevant to UGC as it is awarding grants to the universities to conduct research in partnership with industry under HEQEP. The legislation will help create a uniform patent policy among universities to retain ownership of inventions made under government-funded research programs.

Ensuring timely and effective legal protection for intellectual property and ensuring strategic alliances for enhancing its value will maximize benefits from the intellectual capital for the university system of Bangladesh. This will also encourage the publication of research results in scientific journals after a careful consideration of the consequences on IP rights. An effective system will be in place in each university to scrutinize the scientific papers, research outcomes and inventions in terms of the IP rights. It is therefore important that our universities have the capability to understand the techno-legal and business information contained in IP documents and draft IP documents. They must invest liberally to enhance the skills and knowledge base of scientists through structured in-house and external professional training programs in every aspect of IP rights.

F. Achieving ICT parity

F.1. Need for ICT strategies

In the context of the global surge in ICT and the evolution of a multi-billion-dollar ICT industry, a growing number of universities in Bangladesh are offering undergraduate and graduate degrees in ICT related subjects. They must keep track of the recent developments, trends, changes and prospects of ICT; try to bridge the gap between industry and academia; set up advanced e-learning and distance learning facilities and virtual classrooms, carry out unified curriculum development, update facilities for ICT based pedagogical development and enable ICT program application in teaching and learning.

F.2. Creating ICT professionals

Tholons, a leading full-service strategic advisory firm for global outsourcing and investment, in a recent report, maintains that there has been an upswing in the global services outsourcing market despite stiff competitions in the sector.

This has opened up the supply side market, which Bangladesh can successfully exploit. Already there are more than 1,500 registered *IT / ITeS* service providers in the country employing over 250,000 ICT professionals. A close linkage between the ICT industry and academia can ensure and sustain enhanced entry of Bangladeshi professionals in this crucial sector, which may push the revenue from this sector to US\$1 billion by 2018, with employment of 1.0 million software and *IT / ITeS* professionals.

F.3. Bangladesh in the global outsourcing market

The IT based services sector, more particularly the outsourcing business, has the potential to accelerate economic growth. Bangladesh is already taking advantage of some of the globally proven models of outsourcing services such as Business Process Outsourcing (BPO), Knowledge Process Outsourcing (KPO) and Software Process Outsourcing (SPO) where the country's footprint is still small, but the potentials are huge.

BPO has already been declared a thrust area by the government. Business earnings from this sector are rising steadily — from US\$ 4 million in 2008 to US\$ 130 million in 2014. The government expects the earnings to reach US\$ 1 billion by 2021 when the total earnings from the ICT sector are expected to be US\$ 3 billion. The government has decided to set up 554 BPO offices across the country soon, which will boost the sector's performance, according to the State Minister of the Ministry of Post, Telecommunication and Information Technology.

KPO is the next stage in the evolution of the outsourcing market which requires much higher levels of skill and expertise as it involves value addition to some core functions. Bangladesh is also doing well here, with earnings rising from US\$ 100,000 in 2010 to US\$ 4 million in 2012. The next higher level of outsourcing services is SPO where a range of specialized Internet delivery functions are performed. However, in addition to a lack of highly skilled ICT professionals and an efficient delivery architecture, there are other needs that have to be met if we aim to become a high bracket outsourcing destination. These include the need for image branding, developing infrastructure for IT and ITES, tapping new markets, increasing government incentives to the IT sector (reducing tax and vat, arranging online payment facilities, etc⁵. PayPal is already here but other online payment models will also be harnessed); developing competence in modern world languages, providing state of the art technology etc.

Our HEIs will play a proactive role in producing professionals for these thrust areas. They will

- Update and modernize their ICT curriculum, teaching and learning programs
- Provide internship programs to train and turn their graduates into competent ICT professionals
- Brand outsourcing business for it to achieve further growth and profit.

F.4. Creating a common e-learning platform

Implementing a common e-learning platform for all universities is important to ensure cross learning. Such a platform could be based on a software, e.g. 'Moodle' which will be developed by each university according to its academic needs. Besides, the e-learning platform may create a digital content repository and opportunities for a world class virtual learning environment as well as an online repository of questions and testing platforms shared across universities.

F.5. Curriculum to reflect international accreditation standards

The curriculum of the universities will be based on international accreditation needs and needs of Hi-tech parks. Vendor certification examinations such as ITEE, CISCO, Microsoft, etc. will be maximized.

F.6. Pedagogical /teachers' training academy

The government will set up an institute with full residential facilities to train teachers of all universities in different aspects of pedagogy, based on the advanced application of ICT. The institute will also train university faculty in governance, financial management and communication including language skills. It will also organize seminars, workshops and international conferences on pedagogy. The institute will ensure digital content creation and instructional design.

F.7. Developing digital and interactive content

The ICT application in teaching and learning will be further enhanced by developing digital and interactive content for each program. University Digital Libraries (UDLs) will be made more interactive and participatory. The provision of inter-library loans will also be introduced.

F.8. Campus networking (BdREN)

Most public and private universities have established campus networks. Bangladesh Research and Education Network (*BdREN*) with its multi-gigabit capacity has provided very high performance dedicated broadband connectivity to all public and one private university.

⁵ *The Daily Star*, 10 December, 2015

F.9. Current Support of BdREN for higher education

BdREN aims to connect all higher educational and research institutions across the country and to support geographically dispersed academics, scientists and researchers. *BdREN* is providing access to commercial Internet user institutions, and supporting them to use virtual classrooms, create a platform for academic and research collaboration, share scientific databases and access research facilities all over the world.

F.10. Potential use of BdREN for high quality research

BdREN is expected to help avoid the congestion, delays, hassles, interruptions and other limitations due to overbooking and competing traffic in shared commercial Internet. It will guarantee dedicated capacity and end-to-end support for time-critical research applications. The *BdREN* data center with its high-performance computing machines will facilitate quality computing required for research projects on modeling complex physical phenomena in different areas of research.

Besides high-speed connectivity, *BdREN* has also established real-time, distant based teaching-learning facilities through the countrywide virtual classrooms in 34 public universities. With the necessary infrastructure and network in place, courses/lectures can be conducted online with the help of virtual classrooms. As a result, remote video lecturing, a common tool of sharing resources, can be introduced in the universities located in the remote areas. Tools like MOOC (Massive Open Online Courses) can also be introduced with the help of *BdREN* infrastructure.

F.11. Developing national educational network options

There are various technical options for Bangladesh for developing a national educational network (a) the Power Grid Company, (b) the Bangladesh railway, satellite, etc. These options will be explored and utilized for the opportunities and strengths they offer.

Creating effective educational network Issues The following aspects will also be looked into for creating an effective education network and fast global connectivity creating data centers, setting up an ICT research wing in HEIs, setting up an ICT academy, publishing of books and manuals on ICT, holding model workshops in every district, outsourcing business and deciding financial and economic models. A strong ICT division of UGC/ HEC will supervise and monitor these activities.

F.12. ICT vision

The ICT vision of Bangladesh has set clear goals for ICT in higher education which includes guaranteed access to broadband Internet connectivity with good speed and bandwidth by 2021, so that all graduates majoring in any field have the required competence in ICT. All teachers will be trained in ICT based pedagogy, and all higher education institutions will establish ICT based MIS. ICT examination standards will be set up along with global skills assessment standards. Access to higher degree programs at home and abroad will also be ensured.

F.13. ICT strategy for each HEI

Each institution of higher education will have a well-defined ICT strategy. The strategy will cover teaching, learning and research, and management of information. The strategy will also help institutions from missing opportunities for new learning, develop student centered learning and efficiently use resources along with many other advantages.

F.14. NU colleges and ICT

The colleges under the National University will be collectively made into a hub of ICT learning and teaching with the provision of all necessary facilities.

INTRODUCTION

1. Higher education

Higher education in the context of Bangladesh and the neighboring countries primarily means the education that is provided following the completion of Class XII – that is, the post-secondary phase of education – usually in the universities, as well as colleges and institutions affiliated with a university. Higher education typically consists of a 4-year undergraduate program with the provision of a terminal degree at the end, and a 1-year graduate (which is also known as post-graduate) studies and involves teaching and learning, research and applied work. It also involves such advanced and research based degrees as Master of Philosophy (M.Phil.) and Doctor of Philosophy (Ph.D.) The aim of higher education varies from institution to institution, but there is a broad consensus across knowledge communities that it should pursue certain core objectives, such as

- Creating patriotic citizens imbued with strong ethical and cultural values and leadership qualities in education, governance, politics, business, science and technology and other related areas.
- Developing a range of core competencies, skills and capabilities (such as critical thinking, communication, problem solving and decision making) to make students productive members of the society.
- Preparing students to address development issues and perform specialized social functions.
- Ideally, after completing higher education, students are expected to be able to think creatively, synthesize knowledge, express themselves effectively, assume leadership roles and contribute to the development of society. They are also expected to be able to access, acquire and utilize new knowledge in advanced fields and be globally competitive.

2. Higher education in Bangladesh

Higher education was made available for the first time in undivided Bengal (the larger part of which is today's Bangladesh) in the middle of the 19th century with the establishment of Calcutta University (1857) and a number of degree awarding colleges.

Although students from all over Bengal and beyond could take admission in these institutions provided they had the entrance requirements, very few students from East Bengal (today's Bangladesh) could avail the opportunity because of poverty, lack of awareness, physical distance and resistance from certain conservative quarters (who were against any form of 'English' education – their preference being madrasa education, which the Calcutta Aliya Madrasa, established as early as 1780 as Calcutta Madrasa provided, and which saw quite a few East Bengal students enrolling every year). During the British colonial rule, a number of colleges were set up in East Bengal either through government initiative or by local patrons for the spread of education and as a step towards achieving higher education – such as Dhaka College (1841), Chittagong College (1869), Eden Girls' College (1873), Rajshahi College (1873), Murari Chand College, Sylhet (1892), Comilla Victoria College (1899) - to name only a few. What these colleges did was to encourage families, mainly middle class and Muslim – who were substantially backward economically as well as in education compared to their Hindu neighbors – to educate their children for jobs and social mobility. The colleges were affiliated with Calcutta University, but they set the ground for the advent of higher education in the region.

Although there were demands for a university in Dhaka following the establishment of colleges in East Bengal, these became more insistent once the city became the capital of the new province of East Bengal and Assam in 1905 after the partition of Bengal. The British government however, did not consider it a priority until the political situation became agitated with the annulment of the partition in 1911. Largely to quell the anger of the Muslim elites, who considered themselves deprived and double crossed by the annulment, the government set up the University of Dhaka in 1921. The university, since its inception, not only began to provide opportunities of higher education to students who were not otherwise able to access it, but also instilled in them ideals of social responsibility, freedom of thought and proactive action where it was necessary for people's emancipation. It was no wonder that the university played a significant role in our struggle for decolonization during the British and Pakistan times.

The University of Dhaka was set up as a teaching and residential university, with house tutors monitoring and mentoring students, and a tutorial system (in addition to class lectures) providing learning and assessment opportunities to students (the Oxford model). It became the model for subsequent public universities in Bangladesh which emerged from the 1950s. By the time the country achieved independence in 1971, it had six public universities.⁶

After 1971, the country's higher education began to see strong demands which led to a phenomenal growth in the subsector. Not only did the number of higher education institutions increase, the subjects and fields taught also multiplied. There was a steady growth of degree colleges; universities (private universities began to operate from 1992); engineering, medical and agricultural colleges and universities and other professional and vocational institutes. Overall enrolment and women's share in higher education saw a substantial increase. The growth obviously was made possible by an increasing awareness about the value of education and the economic and social benefits of higher education; the expansion of the economy and the job market; opportunities of self-realization through higher education and the association of prestige, privilege and respect it carried, and improved delivery. The spread of globalization also meant that higher education was not seen only through a local or national lens; but was valued as a globally important asset which would enable graduating students to become competitive world wide and move across borders in search of a better future.

Today the higher education landscape gives a promising picture, both in terms of the number of institutions providing higher education and the student population, as Table 1.1 shows

⁶ Dhaka, Rajshahi, Chittagong, BAU, BUET and Jahangirnagar University

Table 1.1 Total number of students and teachers in Public and Private HEIs

		Private Universities	Affiliated Madrasas under Islamic Arabic University	Bangladesh Open University	Affiliated Colleges Under NU	Public universities (excluding National University, BOU & Islamic Arabic University)
Number of institutions		85	1,285	01	2,223*	34
Number of students	Male	255,750	400,646	126,733	1,146,501	165,987
	Female	94,380	197,385	81,096	926,568	78,376
Total students		350,130	598,031	207,829	2,073,069	244,363
Number of Teachers	Male		7,518	85	32,000	9,314
	Female		15,403	51	12,000	2,817
Total number of teachers		15,058	22,921	136	44,000**	12,131

Source: University Grants Commission Annual Reports 2015, p. 130

*Source: MIS database, NU, February, 2017.

**Source: Teachers MIS database, NU, March 21, 2017. These are registered teachers, additionally there are around 10,000 unregistered teachers who are also included in the total teacher population of NU. Therefore, the total number would be around 54,000.

The NEP 2010 (p.23) proposes that higher education should have the following **aims and objectives**

- to help the students in the acquisition of world class education; to generate inquisitiveness among them and to help them grow up with human qualities;
- to help in the unhindered practice of intellectual exercises and growth of free thinking;
- to relate the realities of the country with higher education in all conceivable areas; to identify the problems of the society and state and to find out solutions to them;
- to expand the horizon of knowledge through ceaseless cultivation of knowledge and through multidimensional, original and practical research;
- to effectively introduce students to the knowledge of the modern and fast advancing world;
- to build up citizens who will possess scientific, secular, liberal, humane, progressive and forward-looking mindset;
- to innovate new areas of knowledge through cultivation, research and creativity;
- to build up a citizenry inspired by wisdom, creativity, human values and patriotism”

The *NEP 2010* ((pp. 24-25) lists a number of strategies of higher education. The more prominent ones are given below

- All necessary steps and care will be taken to improve the standard of higher education.
- Measures will be taken to provide residential facilities, special help and scholarships for the children of freedom fighters, of small ethnic communities and socially backward groups.
- 4-year Honors degree will be considered the terminal degree and acceptable/required qualification for jobs in all sectors excepting teaching positions at higher education institutions.
- Masters, M.Phil. or Ph.D. will be considered specialized education. Only those interested in research and teaching positions at tertiary level will seek admission for post-graduate degrees. To ensure pursuance of research, graduate programs will be introduced in all departments of all universities. They will offer regular programs for Masters, M.Phil. or Ph.D. degrees. General duration of Masters course will be one year, for M.Phil. 2 years and for Ph.D, it will be up to 6 years from the date of registration.
- Colleges now offering Masters degrees under National University will continue to do so. But the libraries, laboratories and infrastructural facilities of these colleges have to be improved. Teachers of these colleges must have the opportunities of wide-ranging teachers’ training.
- English will be taught as a compulsory subject at the degree level of all colleges and universities.
- Teachers and students together have to take part in research. At the universities, special emphasis will be given on original research. Sufficient and attractive funds will be made available to the brilliant students to carry on innovative research. There will be larger number of fellowships beside the recently introduced Bangabandhu fellowship. At the same time, steps will be taken to create necessary facilities for research in the degree colleges.
- Curricula and syllabi of higher education will be updated to meet international standards. In order to expand tertiary level education, it is essential to translate standard books of modern knowledge and science into Bangla. Recognizing the national importance of such a program, urgent steps will be taken.

- Necessary investment in the education sector will be ensured to maintain international standard of higher education. Besides government funds, institutions of higher education will have to make use of students' fees and collect funds at personal levels to meet expenditures. At present, admission and tuition fees at public colleges and universities are nominal. Tuition and other fees will be determined as per the financial solvency of the parents. Poor parents and students will benefit from such a system.
- Scholarships will be awarded to the students according to their merit and financial solvency of their parents. Moreover, provisions will be made for meritorious students for academic bank loans at soft terms.
- Refreshers teachers' training is an urgent issue. With this in view, seminar or subject based training will be organized in the universities during the long vacations. The teachers of colleges and universities can work together in such programs.
- Every university and college will follow a planned and fixed academic calendar. Academic calendar, containing the date of beginning of new classes, examinations and all annual activities, will be published in printed form before the commencement of the academic year.
- To uphold the quality of higher education, the private universities, proposed or approved, must maintain the standard of education, curriculum, syllabus and recruitment of teachers of high academic qualifications at par with the public universities. These universities cannot discriminate students in respect of race, religion, caste, socio-economic conditions and physical disabilities. Such institutions will not be established and conducted for profiteering. They cannot advocate anything against our freedom, spirit of war of liberation and Bengali culture.

5. Other higher education goals and objectives

Worldwide, a number of international human rights instruments aim to ensure access to higher education. The United Nation International Covenant on Economic, Social and Cultural Rights (1966) which came into force from 03 January 1976, declares, under "Right to Free Education," in Article 13 that

"higher education shall be made equally accessible to all on the basis of capacity, by every appropriate means and in particular by the progressive introduction of free education."

Earlier, in 1950, the First Protocol to the European Convention on Human Rights, in Article 2 reiterated that an individual's right "not to be denied an education." Although the article says that "*It does not guarantee any particular level of education of any particular quality,*" it quotes from the European Court of Human Rights' rule on Sahin vs. Turkey to emphasize that "*any state*" setting up institutions of higher education "*will be under an obligation to afford an effective right of access to them.*"

The Sustainable Development Goals (SDGs) set by the UNO for 2016-2030 include making education equitable and accessible, and achieving gender parity in higher education.

Although in Bangladesh the constitution does not recognize the right to education as a "*fundamental human right,*" education, in all intents and purposes, has been considered a right, and access to education is encouraged and actively promoted. The Education Policy 2010 makes primary level education for all streams (general, madrasa, vocational) compulsory up to grade 8.

vocational, and tertiary education, including university." Goal 4 of SDGs aims to ensure inclusive and equitable quality education and promotes lifelong opportunities for all. More specifically, Target 4.5 aims at eliminating "gender disparities in education" and ensuring

*"equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations"*¹⁰

The *SPHE 2018-2030* keeps the objectives and targets of NEP 2010, Vision 2021, the proposed Education Act, the 7th Five Year Plan and the SDGs in focus and proposes a restructuring of our higher education for achieving them. It aims to address the issues of inclusivity, equity, access, quality enhancement, lifelong learning and improved funding and management. It recommends that the Bangladesh Open University model of open and distance learning should be substantially improved to ensure lifelong learning opportunities of a large number people both in the villages and the cities. Once the Accreditation Council starts functioning, HEIs will have to come up with quality enhancement measures and overall development of their education. The setting up of NRC and a world class flagship university (eventually more than one) will open pathways to research. Gender equity is already being addressed by our HEIs and is expected to be a priority concern in higher education (as indeed in all the levels of our education). As the 7th FYP targets show, the government is already feeling the importance of de-politicization of our HEIs and merit based appointments and promotions of their faculty. Reform measures to bring student and faculty politics back to the welfare oriented, ideals driven frame from its current national party affiliated one will have strong public support.

10. How we see our graduates coming out of HEIs

Our vision is to see our higher education graduates as critical, conceptual and reflective thinkers possessing advanced technical competence and an understanding of the broad conceptual and theoretical aspects of their fields of specialization; possessing effective communication, management and problem solving skills; committed to the pursuit of excellence and prepared to thrive in a globally competitive environment; ethical and sensitive to the environment and are driven by the desire of lifelong learning.

11. How we visualize our HEIs

Our vision projects our universities as creative and future oriented places of learning where the highest quality of teaching and learning is provided and new knowledge is generated; where independent thinking is promoted and future leaders are created; where the culture of lifelong learning is instilled in the learners; where infrastructure and support systems are of high quality; where management is effective and transparent and which are integrated with the community.

¹⁰ *Support to Sustainable and Inclusive Planning (SSIP) Project*, General Economics Division [GED], Planning Commission, Government of the People's Republic of Bangladesh; pp. 26-28

CHAPTER 1: PROGRESS OF IMPLEMENTATION OF STRATEGIC PLAN FOR HIGHER EDUCATION 2006-2026

1.0. Introduction

Ever since Bangladesh emerged as a sovereign nation in 1971, there has been a realization that it needed to restructure its educational system, including higher education, for human resource development, for achieving economic growth and global competitiveness, and for realizing the ideals of democracy and social justice that inspired us in our struggle for independence. The setting up of *Kudrat-e- Khuda Education Commission* soon after the country's independence proved that the government was determined to bring expected changes in our education sector; but this was not possible to achieve because of resource constraints. Education however remained high in the national policy agenda, and with donor funding complementing government's efforts, many improvements were made in different areas of education.

Over the last four decades, the World Bank has been a close development partner of Bangladesh, providing assistance to a host of development programs, including education. The World Bank is the largest external funder in education in Bangladesh, providing US\$700 million to support the Primary Education Development Project 3 (PEDP 3). The PDEP 3 activities include efforts for universal enrolment in primary schools, text book development and quality enhancement. Additionally, the World Bank is currently providing \$2 billion for secondary, technical and higher education development projects of the government.

1.1. Preparing a strategic plan for higher education

In 2005, the World Bank responded to a request by the government to help streamline its higher education, which, the government felt, was failing to “bring out enlightened, skilled, trained, motivated and ethically committed individuals to meet the development needs and challenges of the new millennium.” The World Bank formed a partnership with the University Grants Commission (UGC) and began to prepare a strategic plan aimed at improving our higher education. A Strategic Planning Committee (SPC) was set up with seventeen representatives of different key stakeholders “to develop an overall vision and develop indicative targets for the growth of public and private providers over the next twenty years”¹¹.

Accordingly, six expert groups consisting of scholars, academics and researchers were formed to look into six broad areas of intervention and development. These were

- Vision, Size and Shape
- Quality
- Governance and Management
- Future Funding
- University Research
- ICT in Higher Education

¹¹ University Grants Commission of Bangladesh (2006), 34th Annual Report, p.i

In addition, the experts researched on how effectively the two large providers of higher education -- the National University and Bangladesh Open University-- could be better managed and developed.

All six groups were given a specific set of terms of reference for conducting their activities. Broadly, these were to¹²

- draft an overall vision for higher education and to develop indicative targets for the growth of public and private providers over the next twenty years;
- recommend ways in which the quality of the provision of higher education could be improved in all parts of the public and private sectors;
- review the current legislative framework governing public and private higher education;
- recommend options for developing the strategic direction and overall management of the sector;
- review the forecasts for the provision of higher education and identify the options for funding from all sources;
- identify the options for a research strategy for the higher education sector and suggest ways of enhancing capacity to international standards; and
- devise a strategy for strengthening the capacity of higher education to contribute to the country's skills in ICT and to use ICT effectively in all its learning and teaching processes.

The study investigated the public and private universities of the country, including engineering, medical and agricultural universities, the National University and Bangladesh Open University.

After an intense series of discussions, dialogues, workshops, consultations and research the committees came up with their reports which were compiled and submitted to the government in 2006. Among the observations and suggestions made in the final report were the following

1.2. Projections of student population and new universities

The Strategic Plan for Higher Education (SPHE) 2006-2026 projected that between 184,548 and 369,095 students would be enrolled in the public universities by 2026. In consideration of a fast-growing number of graduates, it was proposed that the higher education participation rate of 20% --in contrast to the existing 4.04% -- would be the target to be achieved by the year 2026. It was expected that the question of gender parity and equality would be adequately addressed.

Need for new universities

It was estimated that between 12 and 28 new universities would have to be set up in the public and private sectors by 2026.

Priority areas for new universities

The SPHE 2006-2026 suggested that in setting up new universities, emphasis should be given on production of skilled manpower in the field of agriculture, bio-technology, forestry, livestock and fisheries, mining, petroleum and gas exploration, marine fisheries, leather technology, textile engineering, ceramic, pharmaceutical, automobile engineering, marine architecture, marine biology, oceanography, etc. Besides, professional fields such as medicine, nursing, engineering, law, etc. could also be given adequate emphasis.

¹² Source: *Strategic Plan for Higher Education 2006-2026*, University Grants Commission of Bangladesh, 2006, pp. i-ii

Private universities

The SPHE 2006-2026 predicted that the number of private universities would increase significantly. Public universities would also be set up in the regional towns. The SPHE 2006 suggested that a strategy should be devised to ensure that these universities would enforce quality in both teaching and governance.

1.3. Strategic options for the future

The SPHE 2006-2026 suggested formulating a strategic option for the next twenty years and beyond, which should broadly reflect the imperatives of making higher education an engine for growth and development, reducing poverty and achieving gender parity and equity. To that end international standard education would have to be provided in all areas including thrust areas that have the potential to lead the country forward (such as ICT, health services, pharmaceuticals, energy, mineral and power). Liberal arts education also should be given due emphasis to prepare creative leadership for the country.

1.4. Governance and management of universities

Enacting an umbrella legislation for public universities

The SPHE 2006 felt that there was an immediate need for streamlining different public University Acts into a single legislation for all the public universities, which would also address all the special needs of the universities depending on their program focus.

Strategic role of SHED, Ministry of Education

The report suggested that SHED should be proactive. It should undertake necessary measures for enactment of laws and regulations pertaining to establishment, operation and management of universities. The Division should encourage private participation and promote endowment support for competitive scholarship for students and the development of key sectors of higher education and research.

Strengthening the UGC

The SPHE 2006-2026 observed that the UGC, with its existing set up and logistics, could not discharge its statutory obligations effectively. It proposed that UGC should have enough authority to assert its regulatory and facilitative position and should be restructured as Higher Education Commission (HEC), which would give the commission a better image and operational focus. It should have well-trained human resources and improved logistics.

Re-defining accountability and institutional autonomy

The SPHE 2006-2026 felt that accountability of teachers and staff needed to be established together with a well-defined system of rewards, incentives and penalty.

Reduction of external influence on university administration

External influence on the governance of the universities has been one of the reasons for their declining performance. Interference in the system– from students' seat allocation to faculty recruitment to office policies – has become a consequent fallout. This situation needed to be urgently corrected.

Governance of the universities and de-politicization

The SPHE 2006-2026 noted that the way the public universities were governed left a lot of scope for political interference from outside and politicization of even purely academic matters – such as selection of teachers. Election of Vice Chancellors, and in particular the Deans of different Faculties, was usually contentious, with partisan politics often overriding considerations of merit.

Table 2.1 Implementation status of SPHE 2006-2026

Time Frame	Specific Actions of Strategic Plan for 2006-2026	Implementation Status	Rescheduled in SPHE 2018-2030		
			Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
2006-2007	1. Review of legislation (public and private universities)	Private University Act 1992 has been revised and Private University Act 2010 has been enacted	✓	✓	
	2. Enactment of Umbrella legislation for all public universities	Not done	✓		
	3. Enhanced Government funding in proportion to GDP	Not done	✓	✓	✓
	4. Setting up a National Accreditation Council	Accreditation Council Bangladesh Act 2017 has been passed in the National Parliament	✓		
	5. Restructuring UGC	UGC has made some restructuring within. It has taken action for establishing Higher Education Commission	✓		
	6. Operationalizing all the universities for which laws have been passed	Ongoing	✓	✓	✓
	7. Improving logistic support for teaching	Ongoing	✓	✓	✓
	8. Establishing network infrastructure and connectivity for a national educational and research network	BdREN is operational	✓	✓	✓
	9. Creating an ICT in Higher Education Fund	BdREN Trust fund has been created	✓		
	10 Restructuring National University	Some restructuring has been done. 6 regional centers have been established in 6 divisional headquarters. Ongoing	✓	✓	

Time Frame	Specific Actions of Strategic Plan for 2006-2026	Implementation Status	Rescheduled in SPHE 2018-2030		
			Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
	11. Initiating action for setting up 6 regional operational centers of NU in the divisional headquarters	6 regional centers in 6 divisional headquarters have been established and these are functioning	✓		
Short-term 2008-2013	12. Accelerating internal resource mobilization by the universities.	Ongoing but needs policy guideline which may be formulated by UGC.	✓	✓	✓
	13. Providing ICT facilities to all public universities and affiliated colleges	BdREN is working on it	✓	✓	✓
	14. Establishing National Research Council.	Not done	✓		
	15. Setting up Research Coordination Cells in Ministries.	Not done	✓	✓	✓
	16. Establishing National Research Laboratory	Not done	✓	✓	
	17. Supporting Ph.Ds. and new researchers	UGC is doing it but needs more support for Ph.D. degrees for university teachers and researchers	✓	✓	✓
	18. Setting up new universities, as required	Ongoing	✓	✓	✓
	19. Rationalizing student fee structure in public universities	Not done	✓	✓	
Mid-Term 2014-2019	20. Setting up a Post-graduate University	Not done	✓	✓	✓
	21. Adopting zero based budgeting	Not done	✓	✓	✓

Time Frame	Specific Actions of Strategic Plan for 2006-2026	Implementation Status	Rescheduled in SPHE 2018-2030		
			Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
	22. Setting up new universities, as required	A number of new universities have been established	✓	✓	✓
Long-Term 2020-2026	23. Setting up the remaining new universities	Will be done in course of time	✓	✓	✓
	24. Uniform recruitment rules for public university teachers	UGC finalized a policy for public universities	✓		
	25. Setting up a Regulatory Commission to rationalize student fee structure in the universities	Not done	✓		

CHAPTER 2: WHERE WE STAND, WHERE WE LIKE TO GO VISION, SIZE AND DIRECTION

A.1. Introduction

Higher education in Bangladesh needs to be redefined in terms of need, relevance, mission, quality, direction and delivery. There should be a vision that defines and drives our efforts towards achieving these objectives which aim at a global level competitiveness and quality. It will be synchronized with the aspirations of the National Education Policy 2010, the draft Education Act, educational objectives of the 7th Five Year Plan 2016-2020 and the SDGs, and the goals of Bangladesh's achieving the middle-income country status by 2021 and that of developed country by 2041.

Vision

To achieve excellence in higher education comparable to global standards; to establish equity and guarantee access to higher education by anyone qualified to pursue it, and to prepare the learners as ideal citizens.

Mission

- To upgrade higher education to global standards
- To synthesize eastern values, culture and requirements within the framework of western discipline and innovation
- To establish a mechanism for the students to enroll in the institution of their choice for excellence in learning, teaching and research
- To enhance the ability of students by providing advanced knowledge in their respective subjects, ICT and other related fields and by developing their skills and competence and communication abilities to be globally competitive
- To enhance quality and to ensure advancement.

How we see our graduates of the future

Our vision is to see our higher education graduates as critical thinkers with an analytical mind, who have the ability to work and think independently, have the highest commitment to the ideals of education and the pursuit of excellence; possess the highest skills and competencies in their respective fields; are self-reliant, ethical and sensitive towards the environment; are compassionate towards their fellow citizens and are driven by the desire for lifelong learning.

How we see our universities of the future

We like to see our universities as generative, creative and future oriented where new knowledge is generated and where the highest quality learning and teaching are ensured; where independent thinking is promoted and future leaders are created, where the culture of lifelong learning is instilled in the students; whose doors are open to all with special assistance provided to differently challenged students; where infrastructure and support systems are of global standard; where transparency and the highest ethical standards are maintained in every aspect of administration and management, and which are integrated with the communities. The universities will be centers of innovation and research for the creation of wealth for the nation.

which specific programmes have attained a minimum benchmark of quality and standard. However, operationalizing the newly sanctioned Accreditation Council and drafting the national qualifications framework for higher education by UGC may lead to significant improvement in the area.

Another challenge for students in selecting an institution is that most of the private universities are located in the urban areas – approximately 45 of the 68 or so in 2013 were located in the capital city of Dhaka. Apart from better infrastructure facilities, Dhaka provides better opportunities to access the job market. Besides, many teachers from different universities in Dhaka teach in the private universities on a part time basis.

Enrolment in different categories of universities

Enrolment in the public and private universities reached nearly 3.5 million by 2015. The Table 3.1 shows the total number of students in different categories of universities and also the share of each category

Table 3.1. Student enrolment in universities and affiliated colleges

Categories	Number of students	Share in %
Public universities	244,363	7.03
National University (affiliated colleges)	2,073,069	59.68
Open University	207,829	5.98
Islamic Arabic University	598,031	17.22
Private universities	350,130	10.08
Total	3,473,422	100.0

Source: University Grants Commission (2016), *Annual Progress Report 2015*, pp.130-32

On 1 November 2017, the VC of National University provided the following updated data

- Number of affiliated colleges 2249
- Total number of students 2,813,630 (Male 1,508,116; Female 1,305,514)
- Total number of teachers 60,000 (Male 45,000; Female 15,000)

Similarly, according data provided by the VC of Bangladesh Open University, its latest total student population (both undergraduate and graduate) stands at 342,803. The updated figures suggest an increasing trend of enrolment in both NU and BOU. Table 3.2. shows the trend of student enrolment in private universities in Bangladesh.

Table 3.2 Year wise growth of student enrolment in private universities

Year	No of universities	No of students	Growth %
2007	51	170,505	+37.00
2010	51	220,752	+9.86
2012	60	314,640	+12.04
2014	80	330,730	+0.61
2015	85	350,130	+5.87

Source: University Grants Commission (2016), *Annual Progress Report 2015*, p. 236

The enrolment of students in private universities was 170,505 in 2007 and 350,130 in 2014 but the growth of student enrolment gradually decreased in 2014 compare to the previous years. This reflects the fact that private universities have also reached a saturation level in enrolment.

The Strategic Plan for Higher Education 2006 was formulated for a twenty-year period ending in 2026. The plan argued for the necessity of higher education for national development and cited our constitutional obligation to provide access of all citizens to higher education. The argument remains not only valid today but has become much stronger. In a period of ten years, there have been a lot of changes both nationally and internationally, and the developments which took place in our higher education sub-sector and other related areas far exceeded the projections made in the Strategic Plan 2006. A groundbreaking development has been the formulation of the vision of “Digital Bangladesh” (Vision 2021) to be achieved by 2021. Subsequently, reflecting Bangladesh’s aspiration and resolve to transit to the developed country status from a middle-income country by 2041, Vision 2021’s terminal year has been extended to 2041. The vision has inspired the nation so much that progress in the Information Technology (IT) sector has already exceeded all expectations and has made it essential to review the higher education plan much earlier than originally planned. The plan projected the student enrolment in the universities to rise to 369,095 by 2026. It also proposed the setting up of 28 additional universities by 2026. There are already 37 public and about 94 private universities in the country in 2017, and the number is on the increase. In the interest of quality however, the growth may have to be moderated at some stage.

It is well-perceived that the people of Bangladesh put high value on higher education. It has been seen that after the establishment of private universities – which charge exorbitantly high tuition fees – many parents with low-income pull all their resources together to send their children to these universities. Over the last 25 years the total annual budget of the private universities of the country has exceeded the total annual budget of the public universities.

It is necessary to review the existing higher education scenario in the country and put forward a vision which will be compatible with Digital Bangladesh and a “middle-income” - better still, a developing – country as early as 2021. In this vision, universities will be centers of not only knowledge generation and dissemination, but also of nurturing young minds to achieve the best of their potentials. Essential elements of employability of graduates will thus be incorporated in the curriculum of every degree program. Award of degrees will be made not only on the basis of knowledge acquired, but also on the acquisition of substantive skills. Every university will offer opportunities for extra-curricular activities including practice of democratic norms, cultural activities and first-hand knowledge about the socio-economic development issues. Since the four-year degree program of the universities leads to a terminal

degree that qualifies a graduate for the job market, the admission to the next higher level, e.g., Master's or M.Phil. would preferably be restricted but accessible to all qualified graduates.

The government spending of 0.12 % of gross domestic product (GDP) for higher education is quite low. Besides, out of the total allocation as much as 90 % goes to pay the salary of teachers, officers and staff. The budget allocation should be substantially increased if we expect our higher education to reach global standards. The strategic plan should have a clear vision for financing higher education in the country.

Quality enhancement in the higher education provided under the National University (NU) has become a priority issue now, since the large number of graduates who pass out of its affiliated colleges every year fail to compete on an equal footing with the graduates of the country's top universities. A plan for restructuring NU into fully functional regional campuses needs to be drawn on an urgent basis. The ethics of employing "surrogate" supervisors for M.Phil. and Ph.D. students also needs to be examined as well. Remembering the scarcity of qualified faculty members, the need for restricting graduate programs (such as M.S., M.Phil., and Ph.D.) must be reviewed. The most serious challenge faced by the colleges is that many faculty members do not have a sense of belonging to the institution. This needs to be addressed on an urgent basis. Table 3.3. shows the number of students having completed a degree program in 2013

Table 3.3 Number of students completing degree programs in 2013*

Name of degree	Public Universities	National University	Islamic Arabic	Bangladesh Open University	Total
Degree pass	236	122,955	0	29,482	152,673
Degree Honors	18,205	126,567	0	3,183	147,955
Technical degree (BSc/MBBS/BDS equivalent)	11,386	0	0	589	11,975
Master's degree	16,590	120,014	0	478	137,082
Technical Masters	2,108	0	0	0	2,108
M.Phil. / Ph.D.	1,039	0	0	0	1,039
Diploma / Certificate / post-graduate	1,035	742	0	575	2,352
Total	50,599	370,278	0	34,307	455,184

*The table doesn't include data from private universities firstly, because these were not available and secondly, because many of the degrees are not offered by them.

Source: University Grants Commission (2016), *Annual Progress Report 2015*, p. 307

A.4. Higher education socio-economic impact on Bangladesh

Bangladesh has recorded an impressive annual growth in its GDP. For a developing country to achieve a consistently average GDP growth rate of 6% for nearly a decade since 2007/8 is regarded as a remarkable achievement. The World Bank has declared Bangladesh to have graduated out of the low-income category status to the low-middle income category. The journey from low-middle income to middle income is a very challenging one requiring, among others, higher rates of literacy both in terms of quantity and quality.

Despite the commendable GDP growth rate for the last 25 years since the restoration of democracy in the country in 1991, Bangladesh seems to be handicapped by low productivity of its labour force, coupled with unemployment and underemployment.

A reason for this stalemate seems to be a less-than-optimal quality of higher education, absence of skills and the lower technological intensity of education compared to the other fast-growing Asian countries, such as South Korea, Singapore, Taiwan, China, Malaysia, and Vietnam. There is thus an imperative to enhance the quality of higher education for ensuring the conversion of a very large number of people into human capital for more rapid and sustainable development. Bangladesh has roughly half its population of 160 million below the age of 30, and one estimate suggests there are 100 million people between 15-59 years of working age. To benefit from the demographic dividend, the country needs to improve the quality of higher education, increase its technological content and widen vocational education and training (TVET) at the secondary level.

Incremental Capital Output Ratio (ICOR) in Bangladesh – that is, the ratio of the quantity of capital needed to produce an additional unit of output at the margin – has increased from 4 in 2000 to 4.5 in 2015. As a result, although the investment GDP ratio of 22 in the year 2000-01 produced a GDP growth rate of 5.5%, the investment GDP ratio of 29 in 2014-15 has not produced the 7.25% GDP growth rate it should have. The GDP growth rate has been estimated by the Bangladesh Bureau of Statistics (BBS) to be 6.8 in 2014-15 and 7.05 in 2015-16. This has been possible through a combination of factors such as an increase in the quality of higher education, enhanced public investment, high export earnings, increased remittances etc. Along with pursuing sound economic policies, the country will need to ensure further and continuous enhancement in higher education to accelerate the annual GDP growth rate to 8% in the years to come.

A.5. Reality check

As of 2015, total university enrolment in the country was approximately 3.56 million¹³. Of these, public and private universities cover roughly a quarter of the enrolment. This section primarily focuses on this category of higher education.

It is important to note that the size of current total higher education enrolment depends on (i) the size of the birth cohort 18-24 years previously; (ii) survival proportion of the birth cohort to age 6; (iii) primary school cohort enrolment and subsequent graduation proportion (classes I-VI); (iv) secondary school cohort enrolment and subsequent graduation proportion (classes VII-X); (v) SSC pass rate; (vi) proportion continuing on to classes XI and XII; (vii) HSC pass rate and (viii) proportion continuing on to post-secondary education (from classes XIII-XVII). Of all these factors, the validity of projections of future enrolment is most dependent on primary and secondary school completion rates and the associated SSC and HSC pass rates. Under any scenario, total higher education enrolment over the next decade (2016-2026) will show an increase. If survival rate among the age group 0-5 increases from 90% to 92%, primary and secondary school completion rates remain static (primary-class 65%; secondary-class 6-10

¹³ Source: University Grants Commission (2016) *Annual Report 2015*, University Grants Commission, Agargaon, Dhaka.

69%) and SSC and HSC pass rates (already very high 80% and 75%) and higher education entry level enrolment of 14% remain stable. Changes in birth cohort sizes for 1998-2008 (size of which is already known) will drive a modest expansion. Our baseline projection under the static scenario suggests that higher education enrolment in 2016 would have been 3.3 million rather than 3.0 million. On the other hand, if survival rate among the age group 0-5, increases from 92% to 97%, and if primary and secondary school completion rates rise significantly (primary school completion 65% to 75%; secondary school completion 69% to 80%); with all other rates remaining stable (i.e. SSC pass rate-80% to 90%; HSC pass rate-75% to 75%; higher education entry level enrolment-16%, total enrollment may rise to as much as 4.6 million in 2026. It is quite possible that the TVET thrust will succeed and a good segment of the HSC and equivalents will enroll in TVET institutions rather than seeking university education. This will significantly reduce the number of university education seekers.

A.6. Quality issues in higher education

While Bangladesh has done an excellent job with regard to increasing higher education enrolment and completion rates, there remains a lot to be done to address quality concerns. Much of the focus appropriately has to be on ensuring a national accreditation scheme which will ensure a basic, minimally acceptable standard for the universities to address the issues of admission process; curriculum content; teachers' professional development to deliver the curriculum, examination and student evaluation criteria; research productivity assessments; class sizes; teacher-student ratios; teachers' qualifications and promotion criteria; classroom and laboratory infrastructure levels, etc. This accreditation requirement by itself will hugely advance quality of higher education. However, despite accreditation requirements, there will remain considerable variations in university graduate skills and competence reflecting significant heterogeneity in initial student quality and institutional value addition.

A.7. Accreditation and beyond

In Bangladesh, the absence of any indicator to judge the standard of education provided by a particular university has meant that there have been no indicators for the employers on the one hand and the guardians on the other to determine the quality of a higher education institution. Bangladesh has been among several South Asian countries that did not have an accreditation apparatus to assess which of the universities and which of the specific programmes of a university meet a minimum standard or quality of education. As a result, we also lacked national qualification framework for assessing quality against such benchmark.

All this is going to change with the *Bangladesh Accreditation Council Act, 2017* having been passed in the parliament on 7 March 2017 with the support of HEQEP. The Bill proposes that BAC will have a Chairman and four full time and eight part time members. Setting up and operationalizing BAC will lead to an overall improvement in our higher education. BAC will compile a set of indices on various aspects of higher education mentioned above. The overall objective scores attained against each of the criteria would then indicate which of the universities or programmes meets the predetermined threshold for accreditation. The process of accreditation starting from the determination of the indices to an evaluation of self-assessment by each university or a specific programme by a high-powered, neutral and autonomous body would enable the accredited universities or the specific programmes to be more proficient.

A.8. What can be done

The urgency for a strategic planning for a sustainable quality enhancement of higher education has never been felt as strongly in Bangladesh as it is now in the context of unprecedented spurt in economic growth and a heart-warming social transformation of the fruits of growth. In the welfare state of Bangladesh, the vow taken by its founding father to remove hunger, illiteracy, deprivation, homelessness and ill health

cannot materialize without a top-quality education at the tertiary level. The instances of Sri Lanka tending towards hundred percent literacy and India facilitating quality jump in university education by offering state facilities of land grant and technology hubs should encourage us to put all our efforts for a paradigm shift. Pitching public universities against private universities on the issue of quality has to come to an end. On a rather pragmatic basis, differential attention and action planning will be necessary for the public and private universities. These and all the other higher education providers have to be brought under a unified focus under a Higher Education Commission.

A.9. Major steps to be taken

Promotion of scientific knowledge: The First Five Year Plan (1973-78) recommended that “Promotion of scientific knowledge and development of technology, which, through their increasing application pave the way for socio-economic development in the country should be revived.” This not only remains valid today but has become more urgent as the world witnesses a techno-economic paradigm shift necessitating countries like Bangladesh to be globally competitive in ICT and science and technology based education.

State sponsorship for specific subjects in higher education: The possibility of the state taking the responsibility of financing higher education at the public universities in specific subject areas, considered essential for rapid socio-economic advancement, should be seriously examined.

Cooperation type higher education: A cooperation type higher education should be established wherein the employment providers i.e. the industries and the universities will jointly (a) formulate curricula reflecting the requirements of Bangladesh, (b) initiate rotation between classroom academic learning and practical apprenticeship in the industrial units for cross checking and (c) applying theoretical knowledge in practical situations.

Apprenticeship socio-economic development: All university students should be placed under a nine-credit residential winter semester in rural Bangladesh. Students, under faculty supervision will undertake (i) resource mapping, (ii) birth registration, (iii) motivation work in population planning, (iv) awareness generation in environment safeguards and adaptation in the circumstances of climate change, (v) reforestation, (vi) hands down training in crop rotation and agro based micro and small industrial units and solar, biogas and other types of renewable energy, and (vii) use of ICT for development. They will also familiarize themselves with project identification and monitoring and supervision of publicly funded projects. The concerned university will meet the board and lodging expenses of each student from the tuition paid or from a general education improvement fund. For the public university students, the modus operandi for the financing of such a practical training for creating future leaders of the country will have to be evolved by the government.

Quality enhancement of teachers: A major area overlooked in higher education is teacher training. A systematic institutionalized program of nationally accredited, discipline specific teacher training must be instituted which will guide both entry level and experienced teachers in the latest, most effective pedagogical techniques. No teacher should go to the classroom without the required professional qualification of teaching and learning.

Broadband internet connectivity: High speed broadband Internet connectivity needs to be massively expanded. This will help to level the playing field with regard to access to information and will jump start research productivity. In addition, universal access to massive open online courses (MOOCs) taught by renowned teachers in world class universities with appropriate local adaptation will bring high quality teaching to every corner of the country.

Coordination between human resources demand and supply: An ongoing major complaint from industry has been the lack of co-ordination between industry with regard to employee skills and academic curricula. Although student internships which have become more prevalent over the years have helped familiarize students with industry needs, it is imperative that teachers spend more time to get relevant

B.2. Assessing institutional activities

Continuous assessment of all academic activities must be carried out on a regular basis to identify departmental and institutional weaknesses and strengths. Once the long-term strategic plan has been adopted, the need will be to assess all activities of institutions to ensure that quality enhancement guidelines are being followed. This will help identify areas of weaknesses resulting from failure to implement any earlier strategic goals. It is proposed that this be done through setting up mechanisms for self - as well external - quality assurance that will scrutinize all aspects of university administration and education. The principles of quality assurance will include

- Establishing mechanisms for internal quality assurance, i.e., self-assessment.
- Adopting effective measures for ensuring financial transparency.
- Developing programs to make students proactive in the learning process.
- Setting up comprehensive regulations to cover all aspects of university education including admission, year to year progression and issuance of certificates.
- Adopting mechanisms to recruit competent academic and support staff.
- Sanctioning funds for use of research and pedagogic activities on a regular basis.
- Ensuring funding for faculty development and research.
- Setting up clear research goals for all university departments and monitoring them to ensure effective implementation.
- Setting up mechanisms for continuous review of all administrative and academic programs and research programs / projects.
- Setting up a mechanism for reviewing grades based on assessment of appeals.
- Ensuring maximum transparency and accountability in all operations of the institution.
- Setting up mechanisms that will enable institutions to function autonomously.
- Putting into place a code of conduct and sexual harassment policy for effective and proper functioning of all personnel involved in teaching-learning and administration.

B.3. Program accreditation

There are six key areas against which an institution's program for accreditation will be considered. In awarding accreditation to a program, the Bangladesh Accreditation Council will have to be satisfied that the program meets the set standards and that teaching, learning and assessment are of high quality and fulfill the needs of students and employers.

Detailed information on each assessment criterion and the evidence that can be used to support it can be found in the Accreditation guidelines. Briefly, the program accreditation will include the following considerations

- Learning, research and practice – the program adequately addresses the curriculum or competence requirements outlined in the standards, reflecting best practice in teaching and assessment. Students' outcomes are positive in terms of program completion and employment records;
- Selection and entry—an approach to recruitment which welcomes diversity and actively promotes partnership;

- Supporting personal and professional development – students are supported during their program and towards further progression onto higher level programs or into employment;
- Teaching—students have access to suitably qualified and experienced teaching staff and a tutoring system that supports their personal and educational needs;
- Resources—students have access to appropriate resources to support their studies; and
- Quality management—a clear quality assurance framework is in place at departmental and institutional levels, and where appropriate, at inter-institutional level.

B.4. National accreditation policy

The *National Education Policy 2010* recommended that all universities and higher education institutions be “accredited and certified” by relevant authorities who will be able to assess the abilities of all institutions to develop the capacity “to deliver education” and “to conduct research” through an Accreditation Council. In keeping with the expectation of the National Education Policy 2010, UGC took the initiative to draft an Accreditation Council Act which has been passed in the parliament on 7th March 2017. The *Bangladesh Accreditation Council (BAC)* will be a high-powered body with a Chairman and four full time and eight part time members looking after its activities. It will set up a mechanism for (a) self-assessment by each participating university or by specific programs in the light of the national qualifications framework standards determined separately; (b) arrange scrutiny of the self-assessment study by external peer reviewers; (c) assess the universities on the strength or weakness of specific programs and determine which ones meet a minimum score for accreditation; (d) single out those which would require more time and effort to qualify for accreditation as well as provide necessary guidance and time frame by which to resubmit the next self-assessment study results. BAC will also frame its rules of operation for scrutiny and approval by the Ministry of Education before these are published in the official gazette. The Council will have the authority to frame an accreditation policy for higher education in all institutions to develop appropriate internal and external quality assessment mechanisms. BAC will perform, among others, the following functions

- Develop mechanisms to affiliate all institutions.
- Set up committees to review application for accreditation. The committees will review self-assessment documents, peer review reports and other relevant materials and will make spot visits to assess the institutions’ accreditation claims. The committees will then report to the council which will be the basis of accreditation of the institutions.
- Establish relation with other accreditation bodies.
- Ensure that universities have their own Institutional Quality Assurance Cells (IQACs) of international standards.
- Ensure a strong student assessment, academic progress monitoring and student counseling system in all institutions of higher education level.
- Set up external quality assurance mechanisms to apply national / UGC / HEC standards and to follow guidelines and criteria recommended by them.
- Adopt external quality assurance mechanisms to bring universities in line with international/global performing institutions.
- Ensure integrity and credibility in the dealings of all universities and set up standards for all operations.
- Develop quality assurance mechanisms after periodic consultations with industrial and professional bodies such as ICAB (in case of Accounting) and BCC (in case of Computer Science).

- To explore the possibilities of joint programs and to develop such programs so that teaching learning activities can take advantage of shared resources.
- To promote and sustain inter-university networks and connectivity with the UNESCO International Institute of Higher Education.
- To prepare personnel specialized in the management of horizontal co-operation with support of international organizations and experts.
- To facilitate joint publications as well as research outputs especially on issues of regional importance.
- To share best practices in university administration.
- To promote and sustain a program of development of skills in the use of the languages of the region within the higher education communities, both academic and institutional.
- To set up co-operative research centers, research parks etc., and linking university resources with government research laboratories and those of industries wherever applicable.

B.11. Strategies to develop teaching and research skills

Teaching and research are the primary goals of all higher educational institutions. Therefore, adoption of appropriate strategies, both short and long term, is essential if we have to attain global competencies. To develop appropriate strategies for enhancing teaching and research skills, higher education institutions should

- undertake periodic review and self-assessment of faculty research and set tangible goals;
- pursue curriculum revisions in line with international developments in curricula;
- develop new approaches to virtual classrooms, online learning and teaching activities as well as conventional classroom teaching;
- come up with outreach programs to maximize distance education teaching and learning;
- develop vocational educational programs and augment other traditional education systems;
- encourage blending of conventional classroom and distance learning wherever possible / applicable / appropriate;
- undertake periodic revision of all academic programs;
- enhance participation of minorities and students from remote and less accessible regions of the country in higher education;
- provide continuous training to teachers and technical and administrative staff to allow them to take advantage of communication technologies.

Efforts should be made to set up a Central Research Laboratory for enhancing quality in scientific, industrial and technological research. The Bangladesh Council of Scientific and Industrial Research (BCSIR) with its 4 regional laboratories may be upgraded to a state of the art Central Research Laboratory and provided with the latest equipment, facilities and logistical support.

Training operations and maintenance personnel. An overlooked aspect of our research is the need to train operations and maintenance personnel for ensuring proper and uninterrupted functioning of all the equipment, machineries, instruments and systems. Training the operations and maintenance personnel on a continuous basis should be a priority area in the research programs of our HEIs.

B.12. Contextualizing culture, political history and ethical questions

The higher education curriculum will reflect the history and the spirit of the war of liberation and the rich cultural diversity of Bangladesh. There will be a strong emphasis on ethics and moral values. These are essential for cultivating patriotism, humanism, democratic values and cross-cultural sensibilities among our students.

B.13. Major steps to be taken

Five-years strategic plan for the universities: It is felt that the adoption of long term, preferably 5-year strategic plans in line with the institutions' stated goals will be crucial for improving educational standards and for continued development of higher education institutions. University education should also reflect goals and priorities compatible with the national ones. The aim will be to ultimately make university education serve the principles of equity and justice. The aim here is to successfully address the following issues

Participation and access: Wider participation of students and equitable access to higher education must be ensured.

Removing inequality and injustice: Higher education should be used to help remove inequality and social injustice.

Addressing social and national concerns: University education should address national / social concerns and priorities.

Establishing partnerships with stakeholders: A strong collaborative relationship between university and stakeholders must be established and sustained. Each program should have Program Educational Objectives (PEOs) based on the mission of the department / program and the perceived needs of the stakeholders. The curriculum must support attainment of the program outcomes, which must foster attainment of teaching and learning objectives.

Operationalizing the accreditation council: Now that the Bangladesh Accreditation Council Act has been passed, the Council should be operationalized and should start functioning as soon as possible. The national qualification framework should also be approved so that BAC can begin monitoring the universities' delivery of programs according to quality standards set by the framework.

Reviewing and updating teaching-learning methods: Existing teaching and learning methods should be reviewed and regularly updated in light of new and emerging demands and by taking internationally accepted techniques into account.

Setting up mechanisms for attaining academic excellence: Mechanisms for ensuring academic excellence and institutional self-reform should be prepared and put into effect in all universities. For raising the standard of our higher education to a globally competitive level we must have a policy to make our learners proficient in English. To that end the universities will prepare appropriate courses and course materials for imparting the necessary skills in communicative English among the students.

Strengthening distance education: Distance education and online learning opportunities should be widened and made more accessible.

Introducing online/ Face-to-Face/ blended programs: Blended programs / courses should be introduced to make tertiary education more accessible and cost-effective. Learning Management Systems (LMS) should be activated in all the universities

Curricular and pedagogical reforms: There should be continuous reforms, upgradation and innovation in the area of curricula and pedagogy.

- evaluate development schemes submitted by the universities;
- allocate annual recurrent and development funds to institutions in accordance with policy guidelines set by SHED, MoE;
- supervise implementation of development projects; and
- collect and analyze statistical data on university education.

The UGC with its current setup and logistics cannot discharge its statutory obligations effectively. For the Commission to act as a strong supervisory body, it needs to have adequate legal backup to monitor and enforce academic norms and good governance standards in the universities. UGC should have enough authority to assert its regulatory position. It should also have well-trained human resources and improved logistics. UGC should develop a set of criteria against which it can assess performance of each university and thereby is able to allocate funds based on past and present performance.

The governing structure of UGC needs to be recast. In order to effectively carry out its executive and regulatory roles and functions, the present practice of appointing its Chairman and fulltime members from amongst reputed academics having wide range of experience in teaching, research and administration should be followed more judiciously. Search committees may be set up to prepare panels of potential candidates for these positions. The government should enhance the status and expand the role of UGC Chairman and its members so that they can exercise regulatory power against the parties who violate the rules. The fulltime members of the UGC should have the same tenure protection as enjoyed by the Chairman. The tenure of the Chairman and fulltime members should be five years. The rank and status of the officers should also be enhanced accordingly. There should be more functional divisions of the UGC to enhance its performance and efficiency. In order to strengthen the UGC as outlined above and upgrade it to HEC, a new Act will have to be in place.

Higher Education Commission (HEC)

The UGC may be restructured as Higher Education Commission (HEC) under a new Act. The proposed HEC should play its part in spearheading the building of a knowledge based society. In addition to other functions, it should focus more closely on the following

- Monitoring and encouraging institutions to pursue continuous quality improvement on their existing strength of teaching and research.
- Helping the universities to address the needs of the students, employees and members of the community at large, and ensuring that the universities are working towards equal opportunity for ensuring equitable access to quality higher education.
- Facilitating research endeavors of the universities to meet both local as well as global requirements.
- Preparing a long-term plan for higher education and keeping the government informed and updated regarding higher education in general.

In order to enhance the proposed HEC's capacity to oversee and monitor the activities of the universities, the following tasks need to be undertaken

- The government must strengthen the legal authority of proposed HEC so that it can help establish good governance in the universities.
- The government must allocate sufficient resources to the proposed HEC, both financial and personnel, so that it can fulfill its obligations and carry out its responsibilities without financial constraints.

- The government must focus on ensuring well trained human resources for the proposed HEC and its logistic capacity.
- The government must have trust in the functionality of the HEC and act as a facilitator rather than auditor and strengthen this institution through empowerment rather than weaken it through control

C.4. Re-defining accountability and institutional autonomy in universities

The governing body of a public university such as the Syndicate should be recognized as having full responsibility for the governance of the institution, subject to the accountability it has to the proposed HEC and MoE. Its role is to work for implementing the strategies of the institution and to supervise the Vice Chancellor, to whom it has delegated the operational management of the university. The governing body will also agree on appropriate structures of committees that allow them to be adequately informed and be advised on progress made.

The wrong kind of external influence on the governance of the universities has been one of the reasons for their declining performance. Political interference in the system – from students’ seat allotment to faculty recruitment to procurement of goods – has contributed to the overall decline of the academic performance of the universities. This situation needs to be urgently corrected.

The involvement of students in politics is important for developing their minds; however, there should be a clear definition of politics to ensure that it doesn’t become a tool for promoting narrow sectarian and party politics that leads to violence and anarchy. The universities should also be protected from the interference of national political parties whose programs carried out within the campuses often disrupt the normal academic activities of the universities. Thus, the universities should be free from divisive and often violent politics that tends to destroy the healthy academic environment of the universities.

All universities must outline and submit an SOP (Standard Operating Procedure) for each administrative as well as academic position (both statutory as well as non-statutory). This should be considered the by-law of the relevant tier (department or institute or school or faculty or university), as the case may be. Every administrative and academic personnel must be informed in writing about their responsibilities, while every position must also be informed in writing about its authority as well as responsibilities.

Every individual should be evaluated annually based on the SOP and such evaluation must also have due remediation measures with an aim to improving the performance of the individual as well as ensuring the sanctity of governance and sustainability of the organization or the administrative tier.

For their part, institutional managers must give attention to stressing the accountability of teachers and staff. But there should also be a well-defined system of rewards, incentives and penalties. Irregularities of any kind must be handled firmly and immediately within each institution’s code of conduct. Necessary changes in the institutional regulations and statutes may need to be made to that effect. Faculty deans, chairpersons and the directors of institutes should be given power to impose administrative sanctions. These new provisions will necessitate framing of new regulations and by-laws under the existing Act of the universities.

The role of the university administration (registrar/ controller of examinations/ director of accounts/ support services, etc.) requires further consideration. Though these positions may not be performing operational level execution at the levels of department/institute/faculty, they may however, be entrusted with some monitoring and evaluation functions.

Autonomy of individual faculty members and the administrative bodies should ensure that collegiality, and more importantly, imparting of knowledge, are in no way affected. Thus, though individual autonomy is important, respect towards collegiality (both administrative and academic) is imperative.

The administrative and academic functions must be clearly separated. For example, maintenance of grade sheets, class rooms, examination schedules, etc. are administrative functions; while teaching, grading, research initiatives, etc. are academic pursuits; and thus, cannot be supervised by the same authority.

University authorities must formulate a faculty management guideline for establishing discipline in teaching, research, assessment and other academic responsibilities among the faculty, especially in the public universities. This academic management tool will be commensurate with the best practices in renowned universities abroad. Some of the top ranking private universities in Bangladesh are already using it.

The department/institute/school/faculty/university, must maintain a book of accounts based on the financial statute of the university and each statutory or non-statutory body must be entrusted with the stated financial responsibility along with authority.

Good governance and congenial atmosphere in the universities are the key to productive and applied teaching and research. There should be accountability of all university teachers regarding their performance including timely completion of courses, evaluating examination scripts, and giving time to students etc. The performance of researchers should be assessed in terms of the number of publications in reviewed and ranked journals with related impact factors. In addition to pure academic journals, faculty members should also be motivated to write for professional journals and magazines as it happens in developed nations. This directly helps build an understanding of community needs and also helps develop appreciation and trust of the community, industry and other stakeholders towards academia.

C.5. Democratization of public universities

The governance process of the six old public universities (Dhaka, Rajshahi, BAU, BUET, Chittagong and Jahangirnagar) is based on the President's Order (PO) No.11 of 1973 (for Dhaka University), and the respective Ordinance/ Act of 1973 (for the five other universities). The PO 1973, and the Acts were promulgated for democratization of higher seats of learning in the country that matched the expectations of the newly independent nation. Thereafter, numerous public universities have been set up with varied policies that conflict with the basic essence of democratization. It is therefore essential that a single broad framework be developed for all public universities (including specialized universities).

The election processes for various statutory positions including those of Vice Chancellor and Deans of Faculties etc. of public universities have been criticized by some quarters on the ground that the universities have been heavily politicized through this process. This is, unfortunately, not far from the truth. But we cannot afford to defeat the purpose of democratization because of some practices that may be considered less democratic. University teachers are among the most precious assets available for any nation because they are involved in creating the human capital that forms the backbone of any nation. Furthermore, they are considered to be the most conscious group of citizens and are expected to provide direction during crises and help solve problems that surface from time to time. Therefore, keeping the spirit of the 1973 Act in mind, administrative problems of the public universities can be resolved not by abolishing the existing system, but by evolving newer ways and improved methods of university management. The democratization of universities implies that the characteristics be practiced through

- ensuring individual ownership
- focusing on transparency
- sharing authority and responsibility
- ensuring group decision making
- developing horizontal linkages of the management structure, and

- establishing quality based long term employment practices of university management systems.

The above can only be achieved through excellence in human resource management where the prescription of selecting/electing the right person for the right job through a judicious method results in sustenance of academic environment.

C.6. Appointing Vice Chancellors in public universities

The Vice Chancellor (VC), who is the principal academic and chief executive officer of a university, should be appointed for a term of four years by the Chancellor from a panel of three persons to be nominated by the Senate which ensures participation of graduates, teachers, students, officers and staff of the university and other stakeholders in the selection process. The VC will be an ex-officio member and chairman of the Senate, the Syndicate, the Academic Council, the Finance Committee and other statutory bodies. The other two such positions of the university are the Pro-Vice Chancellors (Academic and Administration for larger universities if deemed essential by the Chancellor) and the Treasurer. In smaller universities, the Pro-Vice Chancellors should perform their duties as delegated by the Vice Chancellor and the senior of the two shall act as Vice Chancellor in his / her absence. The Treasurer should have statutory responsibilities for the university's financial management. In the absence of the position of Treasurer, financial activities may be carried out by Comptroller/ Director of Accounts. However, the current process of appointing Vice Chancellor and other senior executives often makes them vulnerable to undue external political pressure that may hamper good governance. Thus, the onus of selecting/electing the right candidate falls on the stakeholders entrusted with this very important task.

C.7. Improving institutional management in universities

Reorganizing the composition of governing bodies in public universities

The composition of university Senates and Syndicates will be reorganized in keeping with the emerging demands and challenges of our time. The reorganization will aim at creating an enabling atmosphere in the universities so that these bodies can work in a neutral manner without any outside interference.

Furthermore, with regard to the election of academic representatives in the senate and syndicate, different categories of faculty should only vote for candidates from that category. For instance, a lecturer should only vote for a representative from the lecturer category and not for candidates of any other category. The composition of the governing body (Senate) should be directed by the stakeholders. This may be undertaken based on representation of various levels of academic and administrative staff, students, parents, employers, policy makers, sponsors etc. Each may be undertaken following a mix of democratic systems as well as selection (for example, the Chancellor may nominate some, while teachers, employees, registered graduates and student bodies may elect some).

The Senate, the Syndicate, the governing bodies of the Institutes, and the Finance Committee of the university will have representation from the civil society. This is expected to ensure wider social representation aimed at improving governance and transparency.

The existing Acts of the universities lack uniformity and cohesion and are, at times, anomalous. The University of Dhaka is governed by President's Order (PO) of 1973, while Rajshahi, Chittagong and Jahangirnagar universities are run under three different Acts. Each new university is also governed under different legislative arrangements. There is thus a pressing need to develop and bring the many laws of different universities under a single "umbrella legislation," which will remove many of the present anomalies. The proposed new legislation could be used to set out guidelines on the membership of university Senate and Syndicate. It could also include a requirement that a Code of Conduct be devised and followed by members of such bodies. This should remind members of the supreme governing body that they hold office as trustees of the whole institution and not as delegates of a particular interest group.

Developing consensus among stakeholders

Quality education depends on a number of factors, ranging from a congenial environment of learning to committed faculty to adequate support services to good governance. This requires sharing of a vision among the stakeholder groups (government, teachers, officers, employees, students, parents, beneficiaries, sponsors and the society). Sponsors are those who contribute substantial funds to the universities for research and other needs. Each group has a role to play in the smooth and effective functioning of a university. The preservation of values and norms depends on this sharing and togetherness. Achieving group cohesion substantially improves the governance in an institution of higher education.

Rotation of departmental chairperson and director of institutes

The current system of rotation of departmental Chairpersonship or Directors of institutes down to an assistant professor tends to undermine the role of an academic leader and does not give the signal of serious business in managing academic affairs. Departmental chairpersonship or the position of director of institutes therefore, should be rotated only among the professors and associate professors.

Differences exist in the appointment of Chairpersons / Directors in the public and private universities. While the private universities depend on the Vice Chancellor or the BoT for the final selection, the public universities undertake this through rotation.

In case of the private universities, the policy of appointment may be set by their governing bodies since there are no disagreements. However, for public universities, two things need to be considered first and foremost is the leadership capability of the person in charge, while the second is the authority of the position. The first implies that all members (academic and administrative) of the individual department / institute may initially nominate three individuals from among the faculty members who they consider to be capable of providing leadership and the second implies that these individuals must belong to the top one third of the total faculty members and are professors or associate professors. Once the short list is created, the senior-most among the list should be assigned the position. Further, a Chairperson / Director may be allowed to continue for a maximum of two terms if desired by the members. In case of departments which are new and thus are very small, the Dean or the Director (in case of institutes) may head the department (or institute) for a period that the academic committee of the department or the institute considers viable.

Appointment of provost and wardens

The halls / hostels of residence are managed by the Provosts / Wardens who are directly appointed by the Vice Chancellor/university syndicate. Most of these appointments are usually made on political considerations without due regard to the appointees' administrative capability. This discourages many able academics with recognized ability to handle sensitive student affairs from taking up such positions. Moreover, appointing Provosts/Wardens on political grounds may often create a situation where students not belonging to the party in power complain about being disadvantaged with regard to their "legitimate" benefits in the halls/ hostels of residence.

For residential universities, the appointment of Provosts and Wardens should be made through a process where the Pro-Vice Chancellor (Administration) in consultation with the various Deans nominates three names to the Vice Chancellor, who will finally select one for the position. In case of absence of a Pro-Vice Chancellor, the senior-most Dean will take the responsibility of initial consultation task. In case of hostels linked to a specific institute, the coordination and development committee of the institute will perform the above task. The performance of the provost / warden should be directly correlated to the performance of the various stakeholders of the residential unit. This is to ensure selection of the right leader for this very important assignment.

Improving governance in the residential units

Accommodation should be provided to students on need and merit basis, each student given a seat for the duration of his / her program. The system of attaching students to residential halls has become redundant and unnecessarily bothersome. These students can be monitored through the office of the Registrar in the course of administering other functions such as collecting tuition fees, examination fees etc.

The governance of the halls / hostels of residence should also undertake the following

- The halls / hostel must have in writing all governing principles of the residential premises and every stakeholder must be informed in writing regarding the principles.
- Students should be assigned seats based on need as well as merit. However, they should be evaluated based on their contribution towards maintaining discipline of the hostel and renewals thus should be undertaken on an annual basis. In addition, the renewals should take into consideration the performance of the student in his / her academic program during the period of evaluation.
- Food, nutrition, health, and hygiene are essential components of any residential setting. Thus, all residential accommodations must be evaluated in these areas based on a set standard. The performance of each unit should be undertaken through evaluation of individuals responsible for the assigned task. This also implies that each residential unit must have one or more canteens, a health center, a cleaning department, sports facilities, etc. and must operate under a detailed SOP.
- Residential units should be provided with high speed Internet connection, Wi-Fi connectivity and recreational facilities.

The halls / hostels also need to be freed from external intrusions which can be ensured by enforcing Electronic ID cards. The halls / hostels will have specific visiting hours, but visitors will have to collect special passes. Each residential unit should have a well-furnished visitors' lounge.

Defining the role of students in the context of politics

Although many shy away from or are even repulsed by the term politics, it cannot be gainsaid that politics influences every sphere of our lives. Not every student should necessarily join a political party's student wing, but everyone should be aware of how they are being led and what decisions concerning them are being made. It is everyone's fundamental right to decide their course of action, and by not being aware of politics in general we lose out on that right. However, even if one is associated with a wing of a political party, it is imperative that he or she doesn't allow the political agenda of that party to hamper - or be forced into - the academic affairs of a university. This in no way falls under the definition of student politics.

It is felt that the role of students in universities should be largely academic, with socio-cultural involvements. Students should not be forced to pursue affiliation with party politics of the country. A student is of course free to choose such an association, but it should not become a means of political activism leading to divisiveness, intolerance, conflict or violence. Actions detrimental to the smooth functioning of a university such as political meetings, slogans and processions must be restricted and should take place beyond academic hours. Such redefinition has to be done through a national level consensus. The role of students needs to be redefined in terms of their duties, obligations and rights and this could be done within the proposed Umbrella Act. Regular elections of students' unions need to be ensured. However, such elections must be based on representation through faculties, institutes, or departments and not on the basis of partisan politics.

Students should be allowed to undertake political pursuits with a view to improving the academic environment of the university and maintaining values that are morally right for sustenance and development of future citizenship. Activities that are directed towards a specific ideology of an individual

and encourage the existing universities to rationalize their course offerings in order to make better use of facilities.

While providing funds, the proposed HEC should focus on the performance of a particular university. The overall strengths of the universities should be made public on a biannual basis to help generate funds from various agencies. In addition, attempts should be made to create endowments within proposed HEC based on areas that require national academic attention and future research involvement.

Developing financial management statutes

There exist some concerns about the transparency of financial management at the universities. A set of sound guidelines specifying accountability, external audit tracks and internal control must be in place to ensure proper governance in financial management. In this regard each university should develop its own financial management statutes within national guidelines that could be set by the proposed HEC. A mechanism of independent external audit should also be introduced. All transactions of the universities must be done electronically under a digitized management system

All universities must present a detailed financial regulation / statute and develop an online system that can be audited on a regular basis. The planning of each of the universities must be linked to the financial performance of the university. All universities must follow a uniform financial management manual prepared by the UGC and approved by the Comptroller and Auditor General of Bangladesh. This will aid in attaining zero based budgeting. The zero based budgeting must also include distribution of funds at the micro level which may require inclusion of earnings by the members of the faculty and administration as a result of extra academic pursuits or professional consultations. The statute should include consideration of treatment of private collection of funds or assets from sources other than the proposed HEC, the government or university promoters.

Any institutional pursuit that results in additional earnings should be equitably distributed amongst those involved in the activity. The Chairperson of the department/ Director of the institute must create a budget that is duly approved by the concerned committee. In case of any activity that involves participation of academic personnel, the approval of the academic committee should be mandatory. All such activities must also ensure creation of internal funds for the said department / institute / faculty / university.

Rationalizing budget

Budget allocations should be linked to student enrolments by discipline, importance of course offerings in the context of job market, logistics requirements, research requirements and output, and compliance of academic norms and standards by the departments / institutes. The Treasurers of the universities should be empowered to have flexibility in reallocating funds based on the performance of academic units. They should develop systems of rewards and incentives for effective cost recovery. The funding process should be geared to rationalizing smaller departments, broadening specialties, eliminating duplication of programs, and making more effective use of staff and facilities across academic units. Central funds could be created from the allocation of the proposed HEC to encourage competitive bidding for activities that the universities wish to encourage.

The universities may rationalize their budget by setting flexible tuition structures depending on the demand and importance of the subject. The Treasurer of the university should be responsible for pursuing financial reports from all faculty, institutes, and departments. Every faculty, institute and department must have an assigned professional to maintain financial governance. The department or institute head should be given the liberty to access or create private funds and endowments through either their alumni or interested stakeholders or donors / philanthropists.

Fund raising by public universities

An important source of funding may come from the universities themselves. A university, with its finest intellectual assets, should be able to generate funds from outside the university by selling its expertise to the market. Some universities are doing this on a limited scale. BUET and other engineering universities are developing devices / instruments for the industry at a price; SUST has also generated some money by providing its services to a private company. The innovation ecosystem initiative introduced in selected universities by HEQEP is a step in the right direction. The initiative is based on university-industry collaborative research whose outcome would be commercialized by the university. In order to develop intellectual property management by the university and boost up the commercialization of research outputs created by the faculty, Technology Transfer Office (TTO) has been established in three public universities under HEQEP assistance. The TTO in Bangladesh Agricultural University (BAU) has already submitted patent applications for four technologies developed by its faculty. The intellectual property created in the process would remain with the university and the innovation would be commercialized in partnership with industries.

However, there should be a clear guideline under which such fund raising may be carried out for the sake of accountability, transparency and ethics. UGC should prepare such a guideline and encourage universities to follow it.

Designing and adopting a cost recovery system

Each public university should design a cost recovery system in conformity with its academic programs and ensure a balance between economic rationality and social considerations. It may not be possible to adopt a full cost recovery system for the public universities; however, they should attempt to recover costs as far as possible. This would require a wide spectrum consensus building with all political parties, students groups, civil society and public representatives. Without an agreement with all the stakeholders, this initiative will be impossible to implement.

In this regard, an awareness campaign may be launched by making clear projection of costs incurred for rendering quality education together with perceived benefits. Some modalities of

cost recovery may include increase in tuition fees, increase in fees for boarding and meals for the residential students, increased access to student's loans, establishment of academic chairs, cutting redundancies, etc. However, full cost recovery is not a feasible option and government subsidy in higher education must continue.

All departments / institutes / faculty should present an annual cost recovery plan and outline a justification for any proposed undertaking. This task should be performed by the accounts department of the respective administrative unit.

Financial accountability

The financial accountability for loan and disbursement must lie with the chairperson/director of the departments/institutes in case of public universities. In case of private universities, which can and do take loans from banks and other such institutions, accountability should lie with the promoters to ensure that financial defaults are duly addressed.

Funding to promote partnership with industry, business and public services

Universities have traditionally maintained some link with stakeholders, but these have not been substantial or structured. However, a partnership with the "real world" of industry, business and the public services is essential if our higher education institutions are to be nationally and globally competitive. An appropriate legal framework for university-industry partnership also needs to be established. To set up such partnerships

- The universities should have a proactive and well-defined system of linkage with stakeholders / employers / overseas agencies.
- The universities should keep constant contact with employers, so that changing standards are reflected in the universities' curricula.
- With external agencies, the linkages should be through clearly defined memoranda of understanding and contracts.
- Besides, the universities should also have extensive linkages with other universities, research bodies and learned societies and scholarship giving institutions both at home and abroad.

However, there needs to be a commitment for funding to build partnership from the universities as well as the stakeholders. If the governing body of an institution contains representatives from external stakeholders they will be able to ensure that relevant policies are developed for making the necessary partnerships and links. The funding from the stakeholders will be eventually ploughed back to them through improvement in their performance with motivated and skilled graduates joining their workforce. The purpose should be to undertake research and innovation collaboration (from patenting to commercialization), student training, industry strengthening, student exchange, faculty exchange, societal strengthening, etc. Every department / institute / faculty should place a collaboration plan to the statutory body of the respective unit on a biannual basis. This program should be self-funded.

C.10. Regulating private universities

The private universities began their journey in accordance with the provisions of the *Private University Act, 1992*. The Act was amended in 2010 where some improvements were incorporated.

The contribution of the private universities in the higher education sector since 1992 has been immense. Today, the overall student base of private universities far exceeds that of the public universities. In addition, the private universities play an important role in saving foreign currency as many students who would have taken admission in overseas universities enroll in these universities.

As per provisions of the *Private University Act, 2010* the Vice Chancellors, Pro-Vice Chancellors and Treasurers are appointed by the Chancellor upon recommendation of the Sponsors/Trustees. Apparently, some sponsors exert considerable influence in managing the academic affairs of the university. Moreover, the Act has included a provision that the Vice Chancellors, Pro-Vice Chancellors and Treasurers are primarily accountable to the owners.

In order to redress the present situation, the governing bodies or Boards of Trustees must have a wider representation including senior academics, prominent members of the civil society and the government. As in the public universities, the Vice Chancellor should chair the University Syndicate, the Academic Council, the Finance Committee and other statutory body meetings. This is already being practiced by a few universities. This will ensure better work environment in the private universities. The faculty should have the freedom to grade students according to their performance and merit, and no external consideration should be reflected in the grades. Most importantly, the proposed HEC should oversee and supervise the private universities emphasizing the public interest point of view.

The government will formulate a uniform recruitment rule for the private universities with the provision of a written test, a demonstration class and an interview for selecting faculty which the universities will closely follow.

The Private University Act should be revisited every five years and adjusted based on the socio-economic requirements of the country. The Vice Chancellor should be made responsible for any activities that directly or indirectly affect proper delivery of education. The Board of Trustees representing the promoters of the university on the other hand should be responsible for maintaining all the statutory provisions outlined for setting up and operating a private university under the *Private Universities Act*.

Foreign university branches in Bangladesh

As a policy option, the government may allow foreign universities to open their branches in Bangladesh. This will help meet the increasing demand for higher education in the country. In the age of globalization, shutting out outstanding regional and global providers from our higher education scene would be counterproductive. However, as this is going to be a new experience in the higher education of the country, it is important to lay down certain basic rules to help these universities start their operation with some ease, but there should be clear policies about the formation and operation of the executive structure, the Board of Trustees, the various bodies and committees that will be needed to run the institution, and the financial and legal management bodies.

C.11. Regulating National University

The National University (NU) was established in 1992 to act as the umbrella organization to impart graduate and post graduate level education through its affiliated colleges. These colleges have been the academic backbone for higher education in Bangladesh for almost two centuries. However, with the emergence of private universities, they have lost much of their footing, and there has been a substantial loss in quality of education they provide. NU, with a huge student population finds it difficult to address the issue of quality. However, the university is trying to enhance quality both among teachers and learners by implementing programs. It trains a large number of teachers annually in advanced teaching techniques in their respective subjects. Recently, the World Bank and the Government of Bangladesh have financed US\$ 100 million and US\$ 30 million respectively (totaling US\$130 million) for the College Education Development Project (CEDP) for 5-years from 2016 to 2021. The two objectives of CEDP are to (i) improve teaching learning environment of the participating colleges, and (ii) strengthen their strategic planning and management capacity. Under this project 16000+ college teachers including 700 Principals will be trained at home and abroad (at the University of Nottingham's Malaysia campus).

NU started conducting Master's and M.Phil. programs in some major subjects at its Gazipur campus from 2016. At present around 300 students are enrolled in these programs. NU is also streamlining its examination calendar for publishing results on time. It expects to be free from all session backlogs by 2018.

The following recommendations are made to ensure further strengthening of the National University.

- NU should operate on a regional basis – through its six regional centers rather than centrally. Already the 6 divisional centers (besides the central campus at Gazipur) are operating under a Director level official for inspecting colleges and supervising their academic programs. But the examinations are still conducted centrally from Gazipur.
- All regional centers should be turned into regional campuses and should be placed under a Pro-Vice Chancellor. These may eventually be developed as universities offering undergraduate programs while the Gazipur campus may be developed into a post-graduate university offering advanced Master's, M.Phil. and Ph.D. programs in selected subjects.
- All colleges should be autonomous in respect of institutional management.
- All colleges must be headed by a Principal supported by an academic committee with all teachers as members.
- NU must have a very strong audit board monitored by the proposed HEC and representations from various university level professors to ensure quality of education.
- It must also have a strong financial audit team monitored by the Office of the Auditor General.

- NU should focus on Bachelor's and Master's programs where students can affiliate with universities of their own choice operating within a particular division for M. Phil. and doctoral programs. This is essential to ensure focus of education and maintenance of cost efficiency. Once the Gazipur campus is turned into a post-graduate university, these students can enrol there in the programs offered.
- The colleges must impart professional education along with general education to ensure skills along with general education development and industry specific fields of study.
- The colleges must maintain an acceptable teacher-students ratio to ensure quality of education. This should be strictly supervised by the proposed HEC.
- All colleges under the supervision of the principal must maintain academic curriculum, academic calendar, evaluation of teaching and administrative personnel, discipline within student community and proper extracurricular agenda, etc.

A recent development has reduced NU's academic management role over some government colleges which have been assigned to Dhaka University (seven so far). According to a government decision, more government colleges will be de-affiliated from NU and given to public universities in phases for administering their examinations and managing their academic affairs. The move has far reaching implications both for NU's future role in our higher education and the capacity development of the colleges. Having to manage colleges with large number of students will no doubt put additional pressure on the affiliating public universities which do not have the manpower or the expertise to run the colleges. The combined student population of the colleges is many times larger than the universities. Unless the universities, especially the college inspection and examination sections are adequately strengthened and additional funds are made available, the move might destabilize the higher education scene of these universities and colleges. Besides, the Bachelor's and Master's programs of the colleges have to be streamlined in light of the syllabi of the respective departments (where applicable) of the affiliating public universities.

C.12. Regulating Bangladesh Open University

The Bangladesh Open University (BOU), a public university, was established in 1992 as the first university to introduce higher education through distance learning mode. The aim of the university is to transform the country's vast human resources into an educated and trained workforce by extending to them a wide range of academic programs, both formal and non-formal. BOU's programs target everyone who is interested to learn, particularly working people and women and the socially disadvantaged groups who cannot enrol into the academic and training programs offered by the institutions with on-campus facilities.

BOU is now offering 43 formal bachelor's and master's degree programs in addition to M.Phil. and Ph.D. programs. It also offers 19 non-formal programs in health care, nutrition, agriculture, poultry, livestock, energy, and environment. BOU plans to launch a number of fully online degree programs and Study Centres abroad for expatriate Bangladeshis (in UAE, Saudi Arabia, Malaysia and USA). The university has been serving about 600,000 students through 12 regional and 80 sub-regional centres in different parts of the country, with the assistance of about 26,000 tutors in about 1600 study centres. Out of the total number of students 342,803 are studying in the undergraduate and graduate level programs while others are enrolled in certificate level programs such as SSC and HSC, and certificate/diploma programs in Chinese, Arabic and English language, youth development, computer science, education etc. All the academic programs are run under six schools (equivalent to Faculties) Business; Social Science, Humanities and Language; Agriculture and Rural Development; Science and Technology; Education; and Open School. BOU has also started to explore 'niche markets' for special groups of potential learners. The first niche (Niche 1) is the HSC program for the Bangladesh Army for their newly recruited soldiers,

which started in 2014. Other niches are the SSC and HSC programs for Bangladesh Navy and Bangladesh Air Force.

BOU is now on a transition to becoming a virtual university through extensive use of ICT in education provision such as Learning Management System (LMS)/e-platform, Interactive Virtual Classrooms (IVCRs), web TV and web Radio (in addition to using the services of BTV and Bangladesh Betar), mobile technology (embedded with microSD cards containing video and audio lectures to be used without Internet connection), BOU Tube, YouTube, BOU Facebook, Twitter, BOU Education Apps, etc. It has uploaded over 450 video programs into YouTube and BOU Tube. All textbooks/modules are now available as e-books in the university's website. Mobile set compatible memory cards containing e-books and audio-visual materials are being provided to learners, who have also access to 'online service and payment system'. They can also get their examination results on their mobile phones. BOU's technology team has devised a way to provide provisional grade sheets and certificates with digital signature through the LMS.

BOU is contemplating to transform itself into a 'paperless university'. Several software have already been developed to this end such as Enterprise Resource planning (comprehensive university management software), Online Service and Payment system, Online Admission and Result Management Systems, Teachers/Tutors Tracking System, Examiners Tracking System, Online Student Complaints Management System, and Open Educational Resources Repository.

BOU has, with the purpose of rejuvenating the academic programs, has recently formulated Institutional e-Learning Policy, OER Policy, Quality Assurance Framework, and over 30 other administrative, financial, educational policies and rules and regulations including service rules. BOU has recently established a Quality Assurance Cell (QAC) with the financial and technical assistance from the UGC's Higher Education Quality Enhancement Project (HEQEP) sponsored by the World Bank. The QAC aims at undertaking situational assessment of the academic programs and management and thereafter developing a quality assurance manual which would serve as the framework for continuous assessment of the programs and maintaining quality of education.

BOU's formal programs consist of four levels – Certificate, Diploma, Degree and Masters. Learners enrolled in the formal programs collect books written specially for them from Regional Resource Centres (RRCs), Sub Regional Centres (SRCs) and Study Centres.

BOU's Non-formal Programs In the case of non-formal programs BOU does not conduct any examination. As nearly one third of the country's population cannot read or write, the main objective of non-formal programs is to let people be conversant with modern and sustainable techniques in agriculture, poultry farming, health and nutrition, environment protection etc. in a way which is comprehensible to them.

Although BOU's course materials are well accepted by the students, there exists a demand for further research in developing course materials to satisfy the growing needs of learners. BOU has already established LMS and drafted Moodle to deliver study programs online as part of a South Korean technical assistance program. BOU is going to expand the LMS in its 12 regional centres.

Despite the progress made BOU still needs to focus on further improving the quality of its programs. BOU can also add course packages based on recorded education system transferred through CD and operated at either off-peak hours or through rural digital centres. These attempts would surely improve the current delivery system in a cost-effective manner. Questions have been raised about the effectiveness of the practical sessions in science and technical courses. Attendance in tutorial sessions cannot be made compulsory for the learners in the old system. But missing practical sessions seriously hampers the learning outcome in a practice-oriented program like agriculture.

Ensuring autonomy of the universities: The autonomy of the universities and their institutional authority should be guaranteed, and they should be made more transparent, dynamic and sensitive to the needs of the students and the community. The universities should enjoy enhanced democracy but should exercise self-discipline and social responsibility. All appointments, including those of the Vice Chancellors and Pro-Vice Chancellors should be transparent and based solely on qualifications and merit.

Reorganizing governing bodies of public universities: The governing bodies of public universities should be reorganized to make them more transparent and participatory, with adequate representation from the stakeholders. The Senate should have more representatives from the civil society and Industry, and less from the teachers and registered graduates. Finance committees should also have outside representation for transparency and accountability. In elections for the Syndicate, teachers belonging to a particular category (e.g. lecturer, professor) should only vote for candidates from that category.

Bringing quality change in student politics: Student politics should be responsible and based on values and principles rather than on narrow sectarian outlook or party affiliation. Students should be encouraged to learn to exercise true democratic values and should avoid self-serving and destructive brand of politics.

Improving management capabilities: The universities should continually improve their management capabilities.

Ensuring campus security: The universities should consider the importance of campus security and act accordingly.

CHAPTER 5: SPENDING MONEY WELL

FUTURE FUNDING STRATEGY

D.1. Introduction

University funding, particularly public university funding, is complex because it covers a range of activities which are not always transparent in a given political context. Management, policies and programs change over time. Inflation and movements in enrolments complicate the picture further. This section looks at aggregate university funding, and funding for different university activities over time, adjusting for inflation and changes in student and staff numbers in order to develop a more informed and nuanced picture of trends.

D.2. Goals and objectives

United Nations Sustainable Development Goals (SDGs) (2016-2030) emphasize the need for quality education (and graduates) to improve people's lives and sustainable development, and equal access to affordable university education. In line with the SDGs, the university education system in Bangladesh has set the following objectives which however, are proving difficult to attain in terms of delivery, funding, resources and management

- Enhancing quality of university education
- Enhancing equal access to university education in terms of socio-economic and demographic characteristics
- Making university education affordable for all qualified students.

The *National Education Policy 2010* provides a guideline for generating funds to achieve the objectives of higher education which includes

- Necessary investment in education sector
- Government funds to be supplemented by students' fees
- Collection of funds at personal / institutional levels (endowments, alumni support, contributions from individuals and organizations).

D.3. Strategies

Increasing government funding for public universities

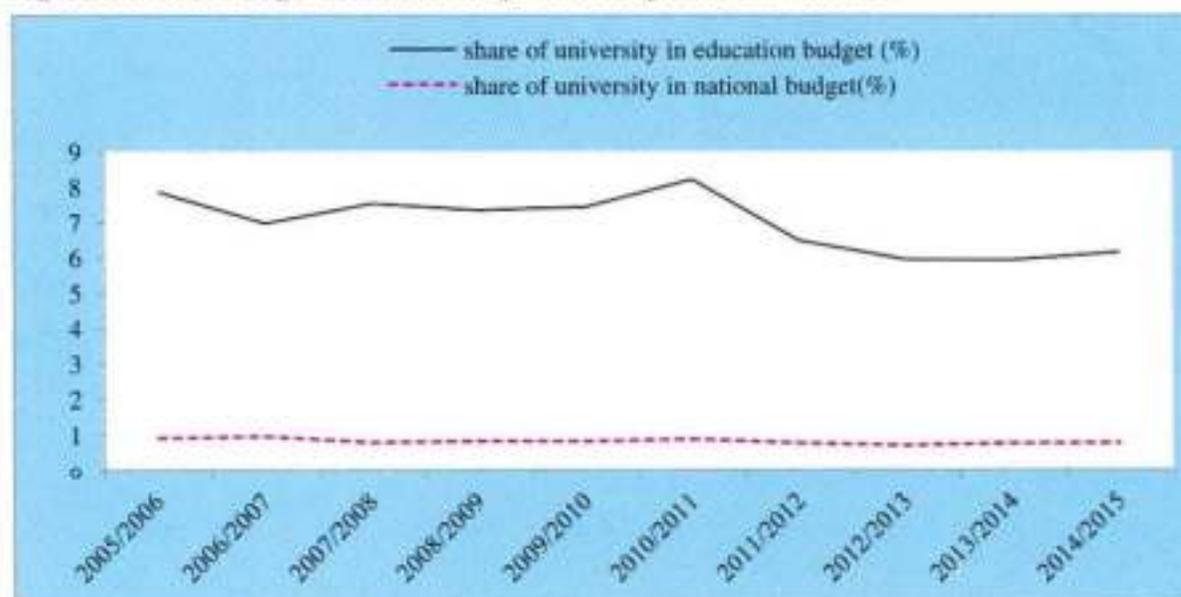
In a majority of developing countries, and in developed countries in Europe, the government finances the major share of higher education costs. Bangladesh is not an exception to this practice where the government entirely funds the total expenditures for higher education (with the exception of private providers). In the recent years, several changes have taken place in the pattern of funding higher education all over the world. In Bangladesh, government funding for the public universities has remained static over the last couple of years in terms of their share in the national budget (Figure 5.1), although the total number of student enrolment increased from 2,020,549 in 2013 to 3,373,422 in 2015. To realize the objectives of SPHE 2018-2030, the government will have to significantly increase funding to higher

education. A 2016 study of budget allocation to education by the Centre for Policy Dialogue (CPD)¹⁴ shows that budget allocation has in fact decreased over the years. In 2006-07 it was 15.9 % of the national budget, but in 2015-16 it came down to 11.6 %. Education's share in GDP has remained static at 2 % over the last 14 years. This, despite the government's commitment to Dakar Declaration (2000) which called for education's share in GDP to be at least 6 %.

In higher education, national budget allocation has also shown a downward trend. It was 0.92 % in 2006 and 0.73 in 2014-15¹⁵. Out of this rather meagre allocation, as much as 70 % goes for non-development expenditure, mainly in paying salary and allowances to teachers, officers and staff.

With the economic growth that Bangladesh has been witnessing in the past decade, and with prospects of even better growth in the coming years, it is not beyond the government's means to keep enhancing education's share in GDP and the national budget allocation to higher education. If we expect to achieve all the goals set out in SPHE 2018-2030, education's share in GDP will have to increase to 3 percent by 2021, 5 percent by 2026 and 6 % by 2030, and national budget allocation to higher education subsector to 2 % by 2021, 4 % by 2026 and 6 % by 2030.

Figure 5.1 Share of government budget for the public universities



Source: UGC (2016), *Annual Progress Report 2015*, p. 25

Given the assumption that maintenance of sufficient investments is required to ensure good quality education, the persistent status quo of government funding for the public universities demands attention from policy makers. In the universities, teaching and non-teaching staff and students need the best facilities for teaching and learning environments. The teaching and learning environments require well-equipped libraries, seminar rooms, laboratories, IT systems and research equipment. To ensure that, a significant amount of capital investment and a long-term strategic planning is required that will encompass but will not be limited to

¹⁴ Rahman, M., Khan, T., I., and Sabbih, M., A. (2016). *Budget for Education An Analysis of Trends, Gaps and Priorities*. Retrieved from Centre for Policy Dialogue, Bangladesh Website- <http://cpd.org.bd/wp-content/uploads/2016/04/Presentation-An-Analysis-of-Trends-Gaps-and-Priorities.pdf>.

¹⁵ UGC (2016), *Annual Progress Report 2015*, p. 25.

- Increasing the government budgetary allocation for the public universities. UGC reiterates the need for increasing share of higher education in GDP—from 0.73% of the current national budget to at least 6 % by 2030.
- Providing infrastructure support through PPP and tax exemption facilities to private universities.

Transparency in budget management

Budget management to be effective should have transparency and accountability mechanisms built into the system including monitoring, oversight and external and internal audit tracks; automation, electronic and online transactions, and periodic implementation reviews.

Performance based funding

The distribution of Government funds to the public universities is based on a historical pattern. The pattern follows the past trends rather than the current needs. Between the years 2012-2014, per student expenditure in some public universities increased, but in some universities it decreased. This scenario has persisted over the years because the distribution of public funds among the public universities does not follow any set principle. For example, per student expenditure in Bangladesh Agricultural University is the highest in the country (Tk. 231,795) which is followed by Bangabandhu Sheikh Mujibur Rahman Agricultural University (Tk. 223,571). On the other hand, among the general universities, per student expenditure is the highest in Khulna University (Tk. 106,283).

In the given context, performance based funding (PBF) can come up as a strategy for implementing a need based financing plan in the public universities. PBF in higher education is a funding system where a portion of a government's education budget is allocated according to specific performance measures such as course completion, retention, and degree completion.

There are three PBF models (i) Output/outcome based model, (ii) Performance set-aside and (iii) Performance contracts. In Bangladesh, the output/outcome based funding model could be implemented as a useful strategy. The strategy is to

- link funding formulas to increasing number of students who attain credit and degree completion milestones.
- link funding formulas to university's performance in research output

Increasing funding for research

University research in Bangladesh still remains unsatisfactory, despite the need to address a variety of emerging issues affecting our economy, trade and commerce, agriculture, environment, health and nutrition, communication and infrastructure development and so on. Allocation to research in university budget is meagre (less than 2 %); research facilities are poor, laboratories lack modern equipment and maintenance support, and industry-university collaboration in research has not yet taken off. Besides, there are hardly any incentives for research which discourages teachers from taking up research initiatives and projects that need substantial monetary investment. In 2013-14 MoE provided (through UGC) BDT 7008 million (US\$ 89 million) to the universities for research. The *UGC Annual Report 2015* (pp.272-77) shows that in 2015, the private universities spent a much higher amount, BDT 8000 million (US\$ 100 million) in research. These figures are however, quite inadequate for conducting cutting edge research in any field, least of all in the fields mentioned above, which the country is increasingly in need of.

The universities are receiving some much-needed research funds from the Higher Education Quality Enhancement Project (HEQEP). Under three rounds of its Academic Innovation Fund, HEQEP has disbursed BDT 7008 million (US\$ 89 million) to the universities. A 4th round recently disbursed BDT 600 million (US\$ 9) million.

There is no alternative to increasing government funding to research and development for the country's higher education to reach global standards.

Improving cost efficiency

Apart from government funding, education efficiency is considered an alternative source of funding in many countries.¹⁶ The argument is that an increasing efficiency means a decreasing resource wastage that implies additional resources generated by savings. Research evidence shows that there is a scope for increasing cost efficiency in Bangladeshi public universities by exploiting economies of scale and allocative efficiency.¹⁷

For instance, currently, in the thirty-four public universities (excluding the National and Open University) the total number of students is 244,363 with an average size (or scale) of 7187; students to teachers ratio being 201; and students to non-teaching staff ratio (officers and support staff) being 81.¹⁸ Research findings suggest that an estimated economically optimum size of a public university is 18,248 students¹⁹ given the students to teacher ratio being 161. Henceforth, there is scope to exploit scale efficiency and thereby to generate funds from savings.

Regarding students to staff ratio, evidence shows that the figure in the world's best universities like Oxford, Cambridge and London School of Economics is around 111²⁰. Although there is no standard to compare between the universities, the evidence is good enough to argue that there is a scope to exploit efficiency and redistribution of resources between teaching and support staffs in the public universities. Therefore, public universities should try to

- increase their average size keeping the student teacher and student staff ratios within acceptable and reasonable limits;
- rationalize recruitment of teaching and non-teaching staff, including upgradation of teaching posts;
- reduce overhead expenditures and promote a more proactive approach to value for money and shared services; and
- review investment in administrative and support services, including through benchmarking activities against similar organizations.

Income contingent fees

Two groups pay for higher education first, the population as a whole (i.e., all taxpayers), which provides support for higher education institutions through public or government programs; and second, the private or non-governmental sector. Private contributions to higher education can be further divided between that which comes from households (i.e., students and their families) and which comes from other private sources such as individual donors, business, and foundations.

Because the benefits of higher education are both public and private, contributions from the two sectors are solicited for higher education in most countries of the world. There are very large differences in the shares that different countries assign to the public and private sectors. For example, in South Korea, 84%

¹⁶ Windham, D.M. & Chapman, David W. (1990). The measurement and interpretation of educational costs. In D.M. Windham & David W. Chapman (Eds), *The evaluation of education efficiency Constraints, issues, and policies* (p. 150). London JAS Press.

¹⁷ Mamun, S. A. K. (2012). Stochastic estimation of cost frontier Evidence from Bangladesh. *Education Economics*, 20(2), 211-227

¹⁸ University Grants Commission (2012). *39th University Grants Commission Annual Report*. UGC, Agargaon, Dhaka, Bangladesh. 257-265

¹⁹ Mamun, S.A.K. (2010). *An economic analysis of the institutional costs of public universities in Bangladesh*. Ph.D. Dissertation Report. Institute for Economics of Education, Beijing Normal University, Beijing, P.R.China.

²⁰ Please visit <http://www.thecompleteuniversityguide.co.uk/league-tables/rankings?v=wide> for detailed information

of the total expenditures for higher education comes from private payments and only 16% from the public sector. In contrast, in Denmark 0.5% of the total expenditures for higher education comes from the private sector and 99.5% from the public sector. In the United States, 52% of the total expenditures for higher education comes from the private sector.

Students in the public universities of Bangladesh pay a very small amount of money for a relatively good quality education. Other than the Scandinavian countries like Finland and Denmark, Bangladesh ranks quite high in providing university education at a very low price students of public universities pay way less than US\$1 per month as tuition fees. However, if the amount of money students has to spend for other charges, cost of residence, food, books and stationery, transportation, clothes, photocopying, computer and other needs, the total amount they spend every month comes to quite a hefty figure. Many students have to offer private tuition or do other jobs to pay for their education.

In private universities however, students pay around US\$ 60 to US\$ 250 (BDT 5,000 to 20,000) per month as tuition fees and other charges. In contrast to the older public universities, the recently established science and technology universities in Bangladesh collect fees according to credit hours at a rate of BDT 75-300 per credit, thus generating a substantial amount of internal revenues. With 80 to 192 credits on offer for a Bachelor's degree, new universities generate a lot more than the existing public universities only through tuition fees. It is of interest to note that the country's older universities are heavily subsidized by the state, while the newer universities generate more funds by means of increased tuition fees. However, UGC is yet to draft any policy guideline about how and where the money thus earned should be spent. In the absence of such a guideline, there is little transparency and accountability about these earnings and expenditures.

Many developing countries have introduced the system of cost sharing to finance university education. In Vietnam, on average 22% of recurrent expenditure comes from tuition fees. In Chile, Jordan and South Korea it is 36%, 40%, and 46% respectively. Singapore raises its student tuition fees 5-7% per year. In Hungary, students who get high grades do not need to pay tuition fees. On the contrary, some developing and developed countries show a bleak picture in generating sufficient fund from tuition fees (e.g. Bolivia, France, Romania, Japan, Hungary etc.), where income from tuition fees is less than 10% of recurrent expenditure.²¹ *National Education Policy 2010* supports differentiated tuition fees on the basis of parental income. In line with policy guidelines, the strategies outlined are as follows

- Tuition and other fees will be determined as per the financial solvency of the parents.
- The guardians will have to produce proof of their financial insolvency.
- Appropriate rules and regulations for financial management will be formulated by each university
- Newly established public universities will rationalize their tuition and other fees.

Alumni relation building

The alumni have been one of the major sources of funding of universities in many developed countries. In line with the developed world, each university in Bangladesh will ensure that fundraising and outreach efforts concentrate most strongly on those areas where the need is the greatest and the strategic goals of the university are most strongly reflected. The strategies will be

- To develop and maintain relation with the alumni. Once relationship is built, the universities (both public and private) will attract investment from the alumni.
- To attract private investment in university infrastructure facilities.

²¹Nagashima, Yoko; Rahman, Mokhlesur; Rashed, Syed; Josh, Al-Zayed; S. Dhar, Subrata; Nomura, Shinsaku; Rahman, Muhammad Asahabur; Mukherjee, Hena. 2014. *A Study on National University and Affiliated Colleges in Bangladesh*, January 2014, South Asia Human Development, Research Paper No 65.

- To tap alumni investment in the universities.

Establishing university-industry collaboration

Knowledge creation is the main role of a university as traditionally understood. To play the role, teachers and students should be continuously involved in research activities. Globalization and ICT revolution however, have now changed the traditional role of the university. Under the changed circumstances, besides knowledge creation, universities should aim at market specialized knowledge for generating funds. According to R A Mashelkar, President, Global Research Alliance

"Education disseminates known knowledge. Research converts money into knowledge. Innovation converts knowledge into money."

For ensuring a combination of public and private funds

- The government may initiate projects like HEQEP to fund overhead costs of research.
- Universities should generate funds through university-industry research collaboration. The collaboration will include formal activities such as collaborative research, contract research, and consulting, as well as informal activities like providing ad hoc advice and networking with practitioners. The outcome of the research -- be it a product, technology, innovation, service or IP -- should be owned by the university and commercialized by setting up startup companies, or through joint venture with industry to generate funds. This process has been called building 'innovation ecosystem.'
- Financial incentives will be given to faculty members for publishing (or presenting) research output in high quality international journals (or international conferences).

Endowment funds

Endowment support to universities comes in many forms—as True, Term and Quasi endowments, mostly donor funded but some funded by the universities. Usually endowment funds are invested, so that after inflation rate adjustment, the return generates enough money in excess to the principal to disburse among recipients of endowment support. True endowments remain in perpetuity and inviolate, while Term endowments are meant for specific periods during which all or part of the endowment may be spent. Quasi endowments are often provided by the universities and are not donor supported. There are also endowment scholarships with stipulations for eligibility.

In our country however, endowment support to the universities is meagre. The amount given to the universities by donors (mostly for scholarship, but sometimes for research support) is usually small and does not support big projects. The universities should therefore take up programs to create awareness among prospective donors, begin conversation with industry and create endowment funds big enough to carry out meaningful research and projects. The UGC / HEC will have to prepare guidelines for such partnerships, which will assure donors that funds are spent for worthy projects with transparency and accountability, and more importantly, that their outcomes are available for their use.

Universities' autonomy for self-generated funds

SPHE 2018-30 recommends that the universities generate funds (research, endowment, etc.) on their own to cover part of their expenses. This has also been supported in NEP 2010 and other government development plans which have a higher education component. To do so, the universities will have to enter into partnership programs with industry for research for which industry will provide funding. Universities

will also commercialize their research outcomes for generating funds. Funds may also be raised from the local communities. UGC should prepare proper guidelines for university-industry partnership and fund raising from the community. The universities however should have autonomy to spend the fund in areas they consider important but should maintain transparency in all fund handling and financial transactions.

Need based scholarship

In most countries scholarship / grant allocation criteria are linked to either academic performance or socio-economic status. Bangladesh has both types of allocation at the government level but the total number of recipients is still very small. Moving towards demand-driven higher education, accessibility for everyone in light of the *National Education Policy 2010* will necessitate following certain strategies. These are

- A sizeable government budget will be earmarked for scholarship / grant etc.
- Scholarships, grants, and other financial aids will be provided to meritorious students coming from poor families.
- The number of scholarships and stipends in the private universities will be enhanced, and the distribution of merit based scholarships will be ensured.
- Need based student financing plan will earmark at least 2% of the total revenue collected by a private university in a given financial year.

Student loan program to increase equity and access

To encourage students from financially insolvent families to pursue higher education, a student loan program should be taken up. The existing loan programs offered by various commercial banks cannot serve needy students because of high interest rates and the absence of collaterals in most cases. Banks classify these loans as consumer loans which operate under a set of regulations that are quite different from those for student loans.

In a stakeholder workshop organized by HEQEP at UGC on 15th March 2017 attended by students, teachers, bankers and guardians the issue was discussed, along with the proposal for rationalizing student fees. The workshop offered the following suggestion for organizing student loans which appear suitable in the Bangladeshi context

- The government will set up a Trust / Company under law which will receive the required endowment from the government.
- The Trust / Company will also mobilize funds from development partners such as the World Bank, Asian Development Bank, European Union etc.
- Loans would be distributed to students on need basis (to be determined by the university the students are enrolled in) with a recovery plan to begin six months after the students' graduation or one month after the students begin a job.
- The loans would be soft with an interest rate below 1 %. The Trust / Company will formulate its operation modalities once it is set in motion.

Rationalizing student fees

A national workshop held on 15th March 2017 at the University Grants Commissions of Bangladesh drawing participants from university students and parents came up with the suggestion that student fees should be rationalized based on the income of the parents. It was felt that those parents in high income bracket should pay more for their children's education while students from poor families should either be given exemption or pay low tuition fees, depending on the level of income of their parents. The meeting suggested that each university should have a regulatory body to review and fix the fee structure.

Enhancing quality of teaching staff

Quality output (graduates) requires a corresponding quality input. In any education process there are four aspects of quality inputs which relate to students, teachers, curriculum and institutions.²² At a higher education institution, a teacher is an important input in the teaching process. General wisdom suggests that a Ph.D. degree is conferred after the recipient establishes comprehensive mastery in an area of knowledge. Currently, there is a shortage of teachers in public universities having Ph.D. degrees in their respective areas of teaching. In all the public universities fresh graduates without a Ph.D. degree are appointed at the entry level teaching positions. This is mainly because it is difficult to undertake research for a Ph.D. degree without institutional support. So, a strategy will be required which will encourage the entering faculty to go for Ph.D. research. Eventually, when a critical mass of Ph.D. degree holders is available, the bar of entry level requirements may be raised. To do so, an extensive support system has to be in place which will ensure that

- The public universities and the research universities have adequate provisions for Ph.D. research supported by a generous scholarship system.
- Overseas Ph.D. studies facilities are made available to scholars, particularly in areas where public and research universities do not have sufficient expertise.
- Linkages with universities / institutions and scholarship providing bodies abroad are established and strengthened that allow Bangladeshi scholars to pursue Ph.D. programs.
- Private universities which have built solid research infrastructure are allowed to offer Ph.D. programs.

Enhancing financial management capacity

An effective financial management requires judicious management of revenue and expenditure. There are concerns about budgetary deficit in the public universities in Bangladesh which are attributed both to insufficient allocation and weak management of revenues and expenditures. UGC in its annual reports repeatedly warns about unapproved staff recruitment and post upgradation practices in the public universities. In the light of these concerns, and for better financial management

- A set of sound uniform financial guidelines and accountability measures must be in place in each public university specifying punitive measures for violators. All transactions should be electronic and a robust digital financial management system needs to be activated. UGC has already drafted a set of financial management rules which should be strictly followed.
- Each university should follow a uniform format of financial reporting that could be set by the UGC.
- A mechanism of independent external audit should also be introduced for all the universities.
- Each university should train its accounts officers and staff to become familiar with financial rules and regulations of the government of Bangladesh.
- Each university should adopt a state of the art accounting software for accurate management of fund. Although private universities are non-profit organizations as defined by the law, these universities nevertheless should manage their financial affairs in a transparent and accountable manner. They should also keep in mind that they have sufficient revenue to meet their day to day expenditure, and occasionally, capital expenditure. Currently, the major source of revenue of the

²²Harvey, L. and Diana, G. (1993). Defining quality. *Assessment and Evaluation*, 18(1), 09-34

private universities is students' tuitions and other fees. They will have to diversify their sources of revenues. This may include

- Endowment funds
- Alumni contributions
- Funds generated by offering non-degree training courses
- Receiving research funds from home and abroad.

D. 4. Major steps to be taken

Increasing government funding: The government should increase its funding of the universities from the current 0.73% of the national budget to at least 3 % by 2021, 5 % by 2026 and 6 % by 2030.

Adopting a zero based budget: Universities should adopt a zero based budgeting.

Increasing university funding for research: Funding for university should be increased substantially to address the emerging research requirements in different sectors of economy, trade and commerce, agriculture, health and nutrition and a number of other areas

Developing financial management, rationalizing budget: Universities should develop their financial management statutes and rationalize their budget.

Ensuring universities' autonomy for self-generated funds: SPHE 2018-30 recommends that the universities generate funds (research, endowment, etc.) on their own to cover part of their expenses. The universities should have autonomy to spend the funds in areas they consider important but should maintain transparency in all fund handling and financial transactions.

Designing cost recovery plans: The public universities should design a cost recovery system and consider adopting income contingent fees.

Setting up university-industry partnership: There should be more meaningful and wider university-industry collaboration to generate research funds.

Mobilizing alumni support: The alumni and other sources should be explored for generating endowment and other funds.

Introducing need based scholarship: There should be a generous, need and merit based scholarship program for all public and private universities.

Concessional student loan: The government should set up a Trust/ Company and provide it a generous endowment fund to start a student loan program where deserving students will be given loans on very soft terms, and their repayment schedules will be drawn keeping in mind their ability and convenience. The banking sector and corporate entities should be encouraged to support higher education by way of setting up low cost and highly flexible student loan programs with repayment obligations preferably starting a month after the employment of the student taking loan.

CHAPTER 6: GENERATING NEW KNOWLEDGE UNIVERSITY RESEARCH

E.1. Introduction

The *National Education Policy 2010* espouses the need to generate and innovate knowledge in higher education. Three of its larger set of aims and objectives focus on knowledge generation and research to

- relate the realities of the country with higher education in all conceivable areas;
- identify the problems of society and state and to find out solutions;
- expand the horizon of knowledge through ceaseless cultivation of knowledge and through multidimensional, original and practical research; and
- innovate new areas of knowledge through cultivation, research and creativity.

The emphasis on research for higher education institutions is reflected in the understanding that research universities will have to play a leading role in fostering a new culture of research in academia and beyond.

Research universities provide advanced education for the academic profession, policy makers, and public and private sector professionals involved in the complex, globalized economies of the 21st century. In addition to their contribution to economic development, these universities play a key societal role by serving as “*cultural institutions, centers for social commentary and criticism, and intellectual hubs*”²³ In realizing the powerful role of research, Asian universities have made bold moves; in fact, Asia is being talked about as “the next higher education superpower”. Japan, South Korea, Taiwan, Singapore and Hong Kong, Malaysia and India have begun the competition for research supremacy with serious policy drives designed to “*promote world-class universities*” backed by serious funding.

The push to build world class universities that are research focused is clearly gaining momentum in Asia. The time is right for us to begin to build similar knowledge infrastructures with the goal of transforming Bangladesh into a knowledge based nation.

E.2. Current status of research

Kitamura (2006)²⁴ encapsulates some of the problems surrounding research in the Higher Education Institutions in Bangladesh that continue into the present. It is stated that

²³Altbach, Philip G. [editor]; Salmi, Jamil [editor] (2012). *The road to academic excellence the making of world class research universities. Directions in development*. Washington DC World Bank. Retrieved from <http://documents.worldbank.org/curated/en/584591468324279676/The-road-to-academic-excellence-the-making-of-world-class-research-universities>

²⁴ Kitamura Y. (2006). Expansion and quality in Bangladesh. *International Higher Education*, No.44

"Many of the faculty members in Bangladeshi universities appear unable to conduct research due to such problems as a lack of research funding, absence of labs with state-of-the-art scientific equipment and technical support staff, absence of a staff development program, heavy teaching load, and an unclear system of recruitment and promotion. At a majority of the universities, many faculty members do not hold doctorates, and those who have finished their master's program are generally hired as new teaching staff. Although the UGC has established rules and regulations for recruitment and promotion, an obscure system remains in place for such practices, based on political connections rooted in political parties rather than on merit. Many faculty members remain involved in university politics, which is closely linked with national politics. In such an environment, faculty members tend to lose interest and motivation in producing research."

Source: Kitamura, Y. (2006)

Budget allocations for research in higher education in Bangladesh are decidedly meager in comparison to those in the developed western countries and in some countries in Asia. The amount of money allocated for research was BDT 120 million (US\$ 1.5 million) in 1980-81, BDT 250 million (US\$ 3 million) in 2000-2001, BDT 1009 million (US\$ 13 million) in 2006-2007 and BDT 2086 million (US\$ 26 million) in 2013-2014. While growth has occurred over the years, the allocations are decidedly "paltry" compared even to some Asian universities. Some private universities in Bangladesh individually allocate more funds to research enterprise than the government's allocation for research.

In recent times, the government has been providing good funding for research in many areas. The Higher Education Quality Enhancement Project (HEQEP) disbursed nearly BDT 7088 million (US\$ 87 million) under three rounds of AIF and a 4th round is about to begin with the allocation of over BDT 600 million (US\$ 75 million). It is important to sustain this level of funding and ensure its long-term availability. It is also important to assess the outcomes and impact of this substantial investment in research.

To make serious research contributions, it is important to consider establishing a National Research Council (NRC) of Bangladesh. An initiative can be taken to set up an autonomous research council similar to National Science Foundation (NSF) of USA that will bolster research in higher education. To this end, the Ministry of Education may take the initiative to formulate and promulgate an Act, which may be known as Bangladesh Research Council Act.

E.3. Setting up a National Research Council (NRC)

The need to establish a National Research body (preferably a Council or Commission) had already been mentioned in the Strategic Plan 2006-2026. It was suggested that the NRC "will set the national research strategy, priorities, policies, and will also coordinate funding from different development partners and other sources." It was also advocated that the NRC "will work as a feeder body to the various centers of excellence." It will also use "an appropriate competitive funding mechanism to encourage basic and applied research in the universities and in different research organizations."

It may be mentioned here that a Social Science Research Council (SSRC) has been set up by the government, and located at the Ministry of Planning, has funded many applied research projects in social sciences. However, the council has not been very active and its impact has not been widely felt. The SSRC can be merged with the proposed NRC for organizing better delivery of research.

These suggestions bear similarities to the NSF of the USA, an independent federal agency set up by the Congress in 1950 “to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense”. The NSF supports basic research conducted by the America’s colleges and universities. In many fields such as mathematics, computer science and the social sciences, The NSF is the major source of federal research funding.

NRC and other national bodies

The NRC should be a separate and autonomous entity affiliated either with the Prime Minister’s Office (which will ensure it the highest priority, considering the importance of research it will conduct) or SHED. However, considering the fact that the *Rules of Business* under which the PMO functions do not have scope to operate a research institution of the nature of NRC. Under the given circumstances, SHED appears to be the obvious choice. The NRC ought to be given a fair degree of autonomy to carry out its mission / purpose.

In phase-1 of its activities, it will mainly work with the universities (both public and private) to support their research activities that are aligned with national priorities and interests. In phase-2, when sufficient experience is gained, the NRC may branch out to support the work of different ministries of the government that have sufficient financial allocations for research (e.g., the Ministry of Science & Technology, Ministry of Agriculture, Ministry of Commerce, etc.), as well as the private sector where research activities must be fostered and innovation strengthened. In phase-2 the NRC could provide monitoring assistance to all research projects and play a coordinating role that is aligned with national priorities.

The main role of NRC will be to evaluate, allocate, coordinate and harmonize nation-wide research programs. In particular, if the NRC is assigned to “set the national research strategy, priorities, policies, and programs” and to bring about long term, discernible, influential, and long-standing impact in areas delineated as priority national agenda items (human resource strategy, urbanization, scientific advancement, climate change agenda, economic policies, national security, etc.) it must be given the authority to make decisions and implement them efficaciously. With the power of quality research, the NRC could play a pivotal role in national affairs, guiding strategy, managing resource allocation decisions, and harmonizing national development efforts through a unified body of focused research.

Organization of NRC

The NRC will have a Governing Board comprising top ranking researchers and scholars from academia, research institutions; representatives from the private sector (banks, RMG, leather, ship-building, and other priority sectors) and government. The idea is that the composition of the Board should reflect merit, inclusiveness and authority to push forward NRC’s agenda.

NRC’s resource pool

The NRC will have a large internal pool of experts drawn from the priority fields, supported by research and administrative staff. But it may take the help of external experts drawn from various universities and research institutes from home and abroad. Collaboration with academic institutions in other countries may also be developed. Finally, at the very initiation, the NRC must have a large enough endowment fund to conduct its work outlined next.

NRC’s activities

Similar to the NSF in USA, the task of the NRC will be to

"fund-specific research proposals that have been judged the most promising by a rigorous and objective merit-review system. Most of these awards [will] go to individuals or small groups of investigators in academia initially. Other [awards] will provide funding for research centers, instruments and facilities that allow scientists, engineers and students to work at the outermost frontiers of knowledge."

Source: <http://www.nsf.gov/about/glance.jsp>

Lists of potential activities of the proposed NRC will be as follows

- Initiate and support, through grants and contracts, research projects to strengthen scientific and social science research and appraise the impact of such research on national development.
- Award funding to build graduate programs and provide graduate fellowships in the sciences and social sciences.
- Foster the interchange of scientific information among scientists within the country and abroad.
- Evaluate priority research projects intended for national impact and connect them with the research and educational programs of various universities.
- Introduce sector-wise competitive funding mechanism, coordination, monitoring and evaluation in the fields of health, national defense, information and communication technology, agriculture, engineering, social welfare and economy, basic sciences and environment etc.
- Serve as a central clearinghouse for the collection of research conducted under its auspices and provide a source of information for policy formulation by government agencies.
- Initiate and support innovative research at academic and other nonprofit institutions and, at the direction of the government, support special research projects.
- Engage in total grant administration from selection and inception of a funded research project to its impact assessment. Selection of projects must be impartial and based on merit with close monitoring of progress from a project management perspective. Quality control of research output would thus be an important task of this body by ensuring proper use of research methodology and instituting and monitoring plagiarism policies, etc. NRC will solicit competitive research proposals on a continuous basis driven by national and regional needs. Grant allocation will be overseen by a National Advisory Committee/ Proposal Evaluation Committee comprising experts in various fields.
- Provide training to researchers drawn from academia (and in phase-2 from the public sector research institutions, NGOs, and the private sector, including industry representatives) on matters of proposal writing, report writing, managing research projects, financial controls, etc. NGOs and private sector entities will pay for the training of their researchers.
- Mobilize research funding from the government, foreign entities, foundations, etc. Given the nascent stage of research in the country, the bulk of funding ought to come from the government in the initial stages as an endowment. In addition, fund requirements ought to be submitted to the government to be ultimately placed in the revenue budget for strategic implementation.
- Organize seminars and symposia regularly to disseminate state of the art knowledge in various fields to modernize the higher education system and motivate students and researchers to engage in productive research.

Basic vs. applied research

Another fundamental question to be pursued is whether these universities, especially the science and technology-oriented universities, will conduct basic or applied research. Basic research seeks to produce new knowledge without any specific application in mind. This type of research may in fact be undervalued in society. In this regard, Hunter Rawlings, president of the American Association of Universities, observes about the iPhone that (2014)

"It depends on seven or eight fundamental scientific and technological breakthroughs such as GPS, multi-touch screens, LCD displays, lithium batteries, and cellular networks. How many of those discoveries were made by Apple? None. They all came from research supported by the federal government and conducted in universities and government laboratories. Apple deserves credit for the final product, but it depends on government-sponsored research, much of it curiosity-driven rather than economically driven."

It may be emphasized, however, that basic research is costly (labs, libraries, resources, archives, personnel, training, etc.) and time consuming. China has jumped the time constraints by recruiting top scholars from across the world to spearhead research in certain selected areas. In this regard, it is important to engage in "strategic" research that combines application needs of the country, along with basic research in collaboration with overseas universities.

Institutional review board (IRB)

For addressing ethical issues in research, for example, where human participants are involved, the role of an Institutional Review Board (IRB) becomes important. IRB will protect the rights and welfare of human participants in research but will also look into other ethical aspects of research. In the Bangladeshi context, as we expect to see an expansion of industry funded and externally sponsored research which will be carried out in the university, IRB can ensure that the highest ethical standards in all aspects of research are maintained.

Capacity building

For research track faculty, it must be ascertained that they have the requisite methodological skills to conduct research and teach at the post-graduate levels. They must be given the opportunity to upgrade their research methodology skills through capacity building programs with the ultimate goal of being certified, unless they have attained higher degrees from reputed overseas universities and / or have a track record of high quality research published in recognized journals etc.

The larger universities of the country have set up a number of Institutes for advanced research and teaching in different subject areas, but because of a lack of faculty with adequate expertise, research and publications, the Institutes have not been able to function properly. Over the years, they have made teaching their staple, but hardly any advanced level research gets done by their faculty. They hold seminars and workshops, and publish the proceedings of the seminars; besides, they also publish occasional research work by the faculty. These Institutes however, need to be strengthened by an infusion of distinguished faculty with high value publications and experience in conducting research for them to make advancements in research.

Institutional characteristics

Bland, *et al.* (2005)²⁵ note several characteristics of institutions with high faculty research production. They include

- Recruitment and selection: Great effort is expended to recruit and hire members who have the training, goals, commitment, and socialization that match the institution.
- Clear coordinating goals: Visible, shared goals coordinate members' work.
- Research emphasis: Research has greater or equal priority than other goals.
- Culture: Members are bonded by shared, research-related values and practices, have a safe home for testing new ideas.
- Positive group climate: The climate is characterized by high morale, a spirit of innovation, dedication to work, receptivity to new ideas, frequent interaction, high degree of cooperation, low member turnover, good leader / member relationships, and open discussion of disagreements.
- Mentoring: Beginning and mid-level members are assisted by and collaborate with established scholars.
- Communication with professional network: Members have a vibrant network of colleagues with whom they have frequent and substantive (not merely social) research communication, both impromptu and formal, in and outside of the institution.
- Resources: Members have access to sufficient resources such as funding, facilities, and especially humans (e.g., local peers for support, research assistants, technical consultants).
- Sufficient work time: Members have significant periods of uninterrupted time to devote to scholarly activities.
- Size/ experience/ expertise: Members offer different perspectives by virtue of differences in their degree levels, approaches to problems, and varying discipline backgrounds.
- Communication: Clear and multiple forms of communication which makes all members feel informed.

E.5. Autonomy

A considerable degree of autonomy must be provided to the flagship research universities to make decisions about degrees, programs, and other academic matters. Central to building flagship research universities is academic freedom. According to the National Education Policy 2010,

"Autonomy is a must for the centers of higher studies including the universities. But it will be implemented under some set rules. A government monitoring system will be in place to monitor whether the allocated fund is being utilized in a proper way."

Faculty based (democratic) leadership team will delineate research priorities and budget allocations with the least amount of bureaucratic tie-up.

²⁵ Bland C J, Center B A., Finstad D A, Risbey K R, Staples J G (2005) A theoretical, practical, predictive model of faculty and department research productivity. *Academic Medicine Journal of Association of Academic medical Colleges*, 80(3)225-237.

E.6. Funding support

Flagship universities will require resources. Governments in the OECD countries rely on two main modes of direct R&D funding institutional and project based. Institutional funding can help ensure stable, long-run funding of research, while project based funding can promote competition within the research system and target strategic areas. Thus, some funding will come from the NRC through competitive research grants. However, a substantial source of funding could be the industry-sponsored projects taken up under university-industry collaboration, provided universities can attract industry support with cutting edge research proposals. Other funds may come from endowments, private grants, etc. Some typical funding sources include the following

- Public Sources / Government Agency
- Endowments
- Public-Private Partnerships on targeted research projects
- Grants (local and international)
- Intellectual Property
- Philanthropy
- Tuition

E.7. Faculty resources

Recruitment of research faculty will be key to building flagship research universities. The main source of recruitment ought to be local. It will be important to use two broad criteria for recruitment general characteristics (based on education, degrees, evidence of research output, overall philosophy, etc.) and special characteristics (based on area of study, journals published in, research innovativeness, etc.).

Outstanding researchers, scientists and entrepreneurs from Bangladeshi diaspora who have earned reputation as innovators should get the first priority in being invited and recruited to help build the capacity of world class flagship university. Additionally, exchange programs should be planned whereby renowned faculty from abroad will be invited to help develop a specific area of research, and faculty from the world class flagship university will go to reputed foreign universities to get specialized training.

The recruitment process is very important to selecting and finding the right match. This process must be strengthened to select the kind of faculty who will take the world class flagship university far.

E.8. Public-private partnership in research

To build research as a core activity, the research universities must address many challenges and build key partnerships – with one another, with the government, the industry, social development organizations, and also with the academic community abroad.

While a coordinating and funding body such as the NRC can play an important role in promoting research, it must also allow individual research universities to raise research funds on their own. Making research institutions dependent on the NRC for funding is likely to stifle creative endeavors of individual research institutions.

For example, there are many business firms in the country that are engaged in some way with research and development of products that have commercial viability. The private sector firms can engage the universities to contribute to the initiatives by offering Masters / Ph.D. level research scholarship to students who will be engaged in a particular research project. While science and engineering departments

may largely benefit from such initiatives, the NRC can come forward to engage universities to find solutions to social problems of the country in the areas of health, education, social issues, economic policy, etc.

An example is the setting up of Edu-city in Iskandar, Malaysia and Kuala Lumpur Education City (KLEC) where plans have been advanced to foster academic-industry collaboration through joint research laboratories and design centers where private universities are encouraged to meet the government's aspiration to build an environment of high quality education and transform Malaysia.

PPP models in education could be the most effective tools to smartly create knowledge bridges for Bangladesh to successfully navigate through the 21st century. For example, the RMG sector needs to harness knowledge, both local and global, to transform this industry from a labour-driven one to a knowledge-driven one. This knowledge can facilitate other growth nodes – a design industry, a fashion industry, many backward-integrated industries, a communication industry that is RMG focused, and service industries (banking, shipping, insurance, healthcare, education, hospitality, entertainment, advertising, brand marketing, designing, finance, technical services and so on) – all specialized in some way and backed by targeted research to serve the RMG sector and inject further dynamism into the economy.

Science-to-Business Marketing Research Centre has revealed that there are several ways in which industry-academy partnerships (IAP) take place in Europe. These include

- Collaboration in R&D
- Mobility of Academics
- Mobility of Students
- Commercialization of R&D Results
- Contract Research
- Consulting
- Entrepreneurship and Governance
- Curriculum Development and Delivery
- Lifelong Learning

A relationship has also been found to exist among these types of joint (PPP) activities. For example, when academic institutions engage in one type of cooperation, it is likely that they also undertake, to a certain extent, other types of cooperation. Clearly, there are many gains for both parties, as well as for society, when successful IAPs are fostered.

E.9. Strategies to promote research

When research is rewarded equitably and in accordance with defined benchmarks of achievement it can produce desired results. Potential rewards include money, promotion, recognition, and new responsibilities.

E.10. Intellectual property right

While giving priority to research and teaching universities should also encourage the faculty to develop intellectual assets through innovation and the use of technology which will drive the economic growth of the country.

This legislation is relevant to UGC as it is awarding grants to the universities to conduct research in partnership with industry under HEQEP. The legislation will help create a uniform patent policy among universities to retain ownership to inventions made under government-funded research programs.

Ensuring timely and effective legal protection for intellectual property and ensuring strategic alliances for enhancing its value will maximize benefits from the intellectual capital for the university system of Bangladesh. This will also encourage the publication of research results in scientific journals after a careful consideration of the consequences on IP rights. An effective system should be in place in each university to scrutinize the scientific papers, research outcomes and inventions in terms of the IP rights. It is therefore important that our universities have the capability to understand the techno-legal and business information contained in IP documents, and draft IP documents. They should invest liberally to enhance the skills and knowledge base of scientists through structured in-house and external professional training programs in every aspect of IP rights.

E.11. Major steps to be taken

Setting up a National Research Council: A National Research Council (NRC) should be set up under an Act with clearly defined objectives, goals, obligations, priorities, functions, operations, framework, and terms of engagement. NEC should enjoy full autonomy and receive adequate funding to function effectively.

Capacity building: Universities should continually assist their faculty to build and enhance their capacity and encourage them to follow best practices for high quality research production.

Categorizing public universities: Public universities should be placed under two broad categories to streamline research and teaching: Research Universities and Teaching and Research Universities. Research Universities will be flagship universities solely given to global standard research while Teaching and Research Universities will do both teaching and research. Since the concept of World class flagship university is new in the context of our higher education, initially a well-equipped World class flagship university should be set up which will concentrate on research and post graduate teaching in specialized areas. As the university attains a global standard in its research, and the need arises for its replication, one or more Research Universities may be set up. The strength of Teaching and Research Universities should be continually enhanced with quality standards in place so that they can also attain global standards.

Ensuring public-private partnership in research: Public-private research initiatives should be supported and encouraged.

Setting up Institutional Review Board: An Institutional Review Board (IRB) should be set up to protect the rights of participants in research and look into other ethical aspects of research.

Strengthening university institutes: University Institutes, set up to foster advanced research and teaching, are not functioning according to expectation. These Institutes should be strengthened by recruiting faculty with distinction and proven record in quality research and publication.

Protecting Intellectual Property Rights: Measures should be taken to protect intellectual property rights. *The Bayh-Dole Act (1980)* of USA may be closely followed for setting up policies and procedures of IPR.

Private universities: Private universities fulfilling conditions for awarding M.Phil. and Ph.D. degrees should be given permission to operate these programs in areas of their strength.

CHAPTER 7: ACHIEVING ICT PARITY

F.1. Teaching and research in ICT now

Over the last ten years (2006-2016), rapid developments have taken place in Information and Communication Technologies and many ICT giants around the world are continuously reshaping and evolving into a multi-billion-dollar ICT industry. To feed this industry, a growing number of universities both public and private are offering Bachelor's and Master's degrees in Computer Science and Engineering, Information and Communication Engineering, Software Engineering, Information Technology and other relevant subjects. For example, innovation and innovation funding have become widely accepted growth principles in such areas as business and industry. The global trend of ICT is continuously adding digital service innovation for efficient utilization as well as business growth.

The fast-changing structure of ICT industries worldwide demands that the universities keep track of changes and take necessary steps to help minimize the gap between university and industry.

In Bangladesh, over the last decade, the universities and advanced research institutes have made efforts to update ICT curriculum, harness the best practices in ICT teaching and mobilize resources for higher research in the field. But budgetary constraints have meant that success has been limited and less than what is needed. However, budgetary constraints alone are not the reason for less than satisfactory performance – one may indeed point at the knowledge gap that exists in relation to the latest inventions, developments, and production of equipment, which in turn leads to wastage or overspending in their procurement and operation. There is also a lack of seriousness about maximizing individual potentials and attaining institutional goals.

Studies conducted both at home and abroad have come up with important insights on the need and the means of developing ICT to eventually achieve global standards. Tholons, a leading strategic advisory firm for global investment (www.tholons.com), for example, conducted a survey in 2015 for monitoring the development trajectory of IT / ITeS players. The Tholons report²⁶ highlights the fact that

"despite the highly competitive nature of the global services outsourcing market, it has seen consistent growth",

and that IT / ITeS have grown not only in complexity but also in terms of demand. The IT / ITeS industry has become crucial to corporate success – contributing to improvements in efficiency, output, and process innovations. As the sector gathers strength it has opened up the supply-side market for competitive engagement by players expecting to establish their foothold in the vast services outsourcing market.

A BASIS report – *"One Bangladesh – Next Five Years' Vision of Bangladesh Software & IT Services Industry"*²⁷ – targets the year 2018 for the country to achieve specific IT / ITeS developmental goals. The following are the priority goals of the One Bangladesh Vision as it relates to the nation's IT / ITeS sector

- To train and create employment for 1 million software & IT / ITeS professionals.
- To expand Internet penetration and bring connectivity to 10 million people yearly.
- For Software, ITeS and Business Process Outsourcing (BPO) sector to reach export revenues of US\$1 billion.

²⁶ Tholons, "Bangladesh IT/ITeS Industry Development Strategy." Document Version FINAL 11, 15 December 2015 (www.licet.gov.bd/oldlicet/Draft_RIS)

²⁷ Source http://www.basis.org.bd/index.php/media/news_detail/230

- For Software, ITeS and BPO sector to contribute 1% of GDP.

Recently UGC, along with MoE has signed an agreement with the Asian Development Bank (ADB) to increase the ICT capacity of the universities with the help of high-tech parks. ADB has selected 9 universities — 4 public, 4 private and the Islamic University of Technology (IUT) at Gazipur -- for the initial intervention.

Bridging the gap between university and industry

The survey analysis and findings of Tholons' annual report suggest that the universities should take necessary initiatives to work to build a university-industry bridge to adapt to the changes based on market demand. This can be done in collaboration with the Ministry of Post, Telecommunications and Information Technology (MoPTIT), Bangladesh Computer Council (BCC), Bangladesh Association of Software and Information Services (BASIS), Bangladesh Computer Society (BCS) and Internet Services Providers Association of Bangladesh (ISPAB), keeping in mind the following recommendations

- Regularly review Tholon's report and IT / ITeS study reports of BCC, BASIS, BCS, ISPAB and other stakeholders to determine the new alignments required to bridge the gap between university and industry
- Hold advanced technology workshops / seminars on a regular basis
- Engage teachers and researchers in industry funded projects
- Bring industry experts in teaching and learning at the university
- Deploy final year students in IT / ITeS industries for projects and internships.

Based on the observations of BASIS, the following application areas should be incorporated in the CSE / IT curricula in order to meet the growing demands of the IT / ITeS industries in Bangladesh

- **Web Application Management** This is a growing application area of IT / ITeS industries based on PHP and .net (dot net) framework. The CSE / IT curricula need to be expanded by incorporating Java, Python and .net framework based professional courses.
- **Mobile Apps** Mobile apps development based on Android and iOS should be incorporated in the curricula to meet the growing demand of mobile apps developers.
- **Graphics Design and Animation** Photoshop, Illustrator, 3D Studio Max, AutoCAD, Maya, Lumion, Flash Animation etc. should be incorporated for graphics design and animation needs of the freelancing market.
- **Internet Marketing** Search Engine Optimization (SEO), Digital Marketing, and Affiliate marketing should be incorporated in different courses of the curricula.
- **Server, Big Data and Cloud Management** Server, big data and cloud management aspects in CSE / IT should be incorporated in the curricula for future development issues.
- **Game Development** Game development should be incorporated in the mobile apps platform as special module or stream in CSE / IT curricula to create potential resources for the game development industry.

E-learning / distance learning / virtual classroom

Implementation of a common e-learning platform for all universities sharing courses is important to ensure cross learning facilities. Such a platform could be based on open source e.g. "Moodle" or similar sources which could be deployed in the UGC data center and integrated with the BdREN facilities. The following recommendations are for e-learning platform which should be operated by UGC / HEC (which will have a separate unit with trained personnel to undertake the job)

- Creating a digital content repository based on intended learning outcomes.
- Opening up opportunities for virtual learning like Coursera and other world-class virtual learning environment.
- Ensuring a competitive learning environment using a common platform for academic excellence.
- Setting up an online repository of questions and develop online testing platforms shared by universities.

Unified curriculum development

Since quite a few recently established universities in Bangladesh have a shortage of experienced faculty, and since each of these universities has to formulate a syllabus, it would be wise for these universities to follow the CSE degree curriculum of universities with a lot of experience and expertise in the area e.g. BUET, DU etc. UGC can take initiative for such a uniform syllabus for these universities. Trained assistance from international IT firms or faculty from American, Korean and Japanese universities would be required to develop such curricula which would enable Bangladeshi IT graduates to enter the Silicon Valley and the country's high-tech parks. It is also possible to take up digital content preparations for courses designed by experienced teachers. These materials can be shared with young faculty of the universities. Unified curriculum development for CSE / Software Engr. / ICE and related programs at both Bachelor's and Master's level courses in different universities would play a vital role in maximizing the benefit of teaching and learning with skills development. UGC should take necessary initiatives to expedite the process of creating a unified curriculum for IT based programs for both public and private universities. The following recommendations are made in this regard

- A unified curriculum for IT based subjects for both undergraduate and graduate level programs should be made based on the present and perceived future market trends of IT/ITeS. The unified curriculum will have detailed resource links including both online and offline materials suggestions.
- Curriculum should be based on international accreditation needs e.g. ABET / ACM / IEEE etc. and incorporating outcome based teaching and learning (OBTL) methodology with clearly specified outcomes.
- Curriculum based on the needs of high-tech parks and incubation centers in Bangladesh should be prepared.
- Detailed lesson delivery plans with expected outcomes, resource requirements, progress tracking, course file etc. should be made for each course.
- Integration of vendor certification exams should be maximized.

Pedagogical / teacher training academy

The government should establish a new autonomous Residential Pedagogical Training Academy for the university teachers to mentor and train them in all aspects of pedagogy but with a strong ICT application content. The academy should organize regular seminars, workshops and international conferences on pedagogy and ICT in pedagogy.

The proposed Academy should also provide training in the following areas

- Governance and financial management
- Communication including developing language and presentation skills
- Skills development for teaching and learning using ICT
- ICT based teaching methods for effective learning outcomes
- Skills development for digital content creation and instructional design through workshops and seminars.

Besides, to encourage teachers to develop ICT based teaching and learning materials, the proposed academy will

- Arrange special seminars / workshops on digital instructional design
- Create a repository of existing digital educational materials

The university classrooms/ lecture theaters should also be IT enabled to allow ICT applications in teaching. Until the Pedagogical Training Academy is established and operationalized, training programs for the university teachers may be provided in any national level residential training institute such as the Bangladesh Public Administration Training Centre (BPATC) with the assistance of academics.

ICT program application in teaching and learning

The different ICT programs offered in different public and private universities have a huge potential to contribute to the development of teaching and learning using ICT. The primary constraints in this regard however, are resource and infrastructure. Technically sound resources are limited and not available everywhere in the country. On the other hand, infrastructure is not adequate for certain applications like video classroom, voice based interactive classroom etc. The ICT programs application in teaching and learning could be further enhanced if improvements are made in the following areas

Digital Content Development: Digital content for each ICT course of each program should be developed and shared using Learning Management System (LMS) portal by creating

- A digital content development framework which is a usable, readable and translatable
- Online documentation for global audience
- Digital content based on framework and Industry standards and using best practices and open educational resources (OER)
- Digital course file for quality assurance practices.

Interactive Content: Interactive learning content should be developed and delivered through different online channels by creating

- Social computing modules for the social media
- Interactive multimedia content for effective learning outcomes and the use of social media for aggregations.

Digital Services: Digital services should be developed for in-house automation of the respective department and / or institution of a university by creating deployable digital services for the automation of business processes in the department / institute and engaging students in the process of development. Cyber security measures should be implemented and ensured.

Strengthening the capacity of higher education for ICT skills and applications

Public and private universities are coming up with their campus networks. The Bangladesh Research Education Network (BdREN) has assisted universities in campus network design and implementations. This will definitely result in connected universities for better sharing of resources, collaboration and mutual development. Digital service provisioning is taking place rapidly as a consequence of campus network. This will further strengthen the capacity of higher education for ICT skills. Teachers, students, researchers and other academic people use social media, streaming media, Google classroom, and other online media applications for maximizing the facilities of learning and research activities. The following recommendations are made for effective ICT applications

- Google classroom / Eliademy.com / personalized customized platform should be used for online classroom activities
- Social media should be used for active collaborations with students
- Researchgate.com and other similar global research portals should be explored for research collaborations
- Professional networks should be utilized by the faculty for professional collaborations.

F.2. Vision for ICT in higher education

Given the present state of our ICT sector and the possibilities of its significant development, a vision for ICT in Higher Education can be laid out that encompasses the following aims

- There must be guaranteed access to computers, with broadband Internet connectivity with good speed and bandwidth for all students, teachers, researchers and administrators by 2021.
- All graduates, majoring in any field of study, must be competent to use computers in serving the purpose of business (e.g. use of word processors, MS Word, Excel, MS PowerPoint, Photoshop, Snipping tool and Internet browsers).
- All teachers of ICT based courses or those who use ICT as a tool in their courses must be trained in ICT based pedagogy to ensure effective teaching and learning.
- All HEIs must switch to ICT based University Management System (UMS) and online admission system. All HEIs are to have access to UDL (UGC Digital Library) through annual subscription (with full text of selected journals and courseware). There should also be provision for inter-university library loan.
- All HEIs must join BdREN through annual subscriptions for research, education exchange and development.
- All HEIs must follow a unified course curriculum (based on IT/ITeS demand of the country) along with the e-learning repository to ensure employability of the graduates.

F.3. Strategies and programs to be implemented

To widen participation in ICT, strategies and programs have to be implemented in the following areas

- Teaching courses that deal with ICT
- Extending access to computer resources
- Developing teachers for teaching basic ICT courses
- Developing digital course contents for effective learning outcomes

- Improving access to ICT courses
- Internship at IT/ITeS Industries
- Certification of ICT skills
- Scholarships for Master's and Ph.D. programs at home and abroad
- Sponsoring visiting professors from abroad
- Setting up ICT exam standards
- Setting up an academy on ICT based pedagogy for effective teaching & learning
- Setting up standards for IT course module development
- Setting up skill assessment standards based on international practices.

F.4. Academic network and fast global connectivity the options

There are various technical options for Bangladesh to develop a national educational network

- (i) The Power Grid Company of Bangladesh Ltd. (PGCB) has placed Optical Ground Wire (as OPGW) on its power distribution towers across the whole country which will facilitate spreading backbone communication throughout Bangladesh. PGCB will use only 5-10% of the communication backbone releasing the rest (90-95%) for building country-wide backbone of ICT in higher education. The optical network of PGCB will be much more reliable and safer in comparison to other optical fiber networks presently in use because it has been installed over high voltage transmission line and so it is free from most of the unwanted interruptions resulting from frequent digging of soil for construction work. The optical network of PGCB would be very robust, noise free and its reliability will be over 99.98%. The last mile access can be done through wireless links in the form of microwave, whose speed ranges from 34-155 Mbps.
- (ii) The Bangladesh railway has installed approximately 1,800-km optical fiber along the 2,900-km railway tracks for its own use. This network was initially underutilized and was later leased to Grameen Phone for their telecom business. This network could be utilized for Internet access and higher education purposes. The ultimate Internet backbone is connected to South East Asia-Middle East-Western Europe 4 (SEA-ME-WE 4), an optical fiber submarine communications cable system that carries telecommunications among Singapore, Malaysia, Thailand, Bangladesh, India, Sri Lanka, Pakistan, United Arab Emirates, Saudi Arabia, Sudan, Egypt, Italy, Tunisia, Algeria and France.
- (iii) Satellite is the second fastest worldwide telecommunication technology after fiber-optic communication. Both these technologies will be used in the decades ahead. We need to plan ICT infrastructure keeping satellite technology in mind. We have four Satellite Earth stations for international access, with 600 overseas circuits.
- (iv) Bangladesh Research Education Network (BdREN) was established in the year 2012 with support from the World Bank under HEQEP, and by 2016 it was functioning for 34 universities where international programs and virtual classes have been launched. The entire infrastructure including rent of space, electricity, water and other resources is within HEQEP funding. BdREN is managed by a Board of Trustees under the BdREN Trust registered with the Registrar of Joint Stock Companies and Firms.
- (v) BdREN will be extended to the 12 government medical colleges of the country.
- (vi) BdREN supports the connectivity at each institution with equipment and other utilities required to run the virtual classrooms and switch rooms etc. In case of equipment failure or malfunction,

BdREN provides technical, maintenance as well as procurement services for new devices. BdREN should develop a mechanism to address redundancy.

- (vii) Considering future growth, maximizing BdREN utilization and profit, and making it an attractive choice for respective stakeholders should be on the agenda. BdREN training for end users including managing NOC and other support infrastructures should be completed since different video conferencing systems have already been established but could not be made operational.

The following sections deal with issues that are important for the future growth and sustainability of the BdREN

Sustainability

In order to sustain the growth of BdREN, public as well as private universities should receive BdREN connectivity at a predetermined price. Local or international grants or donations received by BdREN should be tax exempted. The endowment fund of BdREN should be increased with a GOB fund for continuous income generation. BdREN business prospects must be developed for future sustainability by creating

- New business processes and annual subscriptions for the private and public universities and other research institutions and data centers such as BANBEIS, BANSDOC etc.
- Digital content for research and development activities of the universities.
- Opportunities for research collaborations for the universities and higher education institutes.
- Interactive digital learning materials for use in the universities.

Campaign and publicity

BdREN needs marketing for further development and sustainability. In this regard, the following recommendations are made

- BdREN conferences on ICT should be hosted using BdREN deployments which will not only help wider publicity and utilization but also enable regression testing to discover needs for further improvements.
- BdREN based campus events for all public and private universities should be organized.
- BdREN should hire a marketing consultant to promote its brand and extend business coverage for sustainability.

Linking to a national community ICT network

The community ICT network will be established initially in all the sixty-four districts headquarters, and later in all 490 upazillas, using fiber-optic backbone, along with wireless local loop (WLL). Services will include computer training, e-mail and Internet access, telemedicine, e-commerce, e-governance, distance education, social awareness, empowerment etc. These proposed community ICT centers will have access to centralized resources such as BdREN and electronic resources in the private and public universities. Other activities of the centers may include the following

Creating data center: A data-center containing data on higher education and other areas should be set up that may be used for making strategic plans for ICT projects.

Creating an ICT research wing: An ICT research wing should be created for research and innovation and technology transfer to industry.

Setting up ICT academy: ICT academies should be opened in all 64 districts for producing sufficient MCP, MCSE, OCP, SCJP, SCSA, SCNA, CCNA, CCDA, CCNO and CISA and related professionals to back up local telecommunication, pharmaceuticals, garments, agriculture and other ICT related jobs.

Publication of books and manuals on ICT: Books and manuals that assist professionals and students of ICT must be published on a regular basis.

Holding model workshops in all 64 districts: Workshops should be organized in all the districts of the country to teach participants how to assemble, repair, and service computers and other telecommunication equipment.

Creating a financial and economic model: ICT higher education, training and research should be planned with definite financial goals, keeping the global, regional and local business trends in mind.

Organizing workshops and seminars: ICT seminars and workshops should be organized throughout the year.

Implementing business-academia collaboration: Local private companies and entrepreneurs should be invited to come forward to set up laboratories and run their ICT business in collaboration with academic institutions.

An early decision should be made on which technical option to adopt for the national network. However, the options are not mutually exclusive, since the Bangladesh Open University and the National University could well be important users of the Community Network, while the other universities could choose other options.

F.5. Information strategies in each institution

Each higher education institution (both public and private) should have a well-defined ICT strategy. This will aim to provide every student with a high level of ICT awareness and competence.

An Information Strategy needs to start from, but also encapsulate, a shared vision of the future of the institution. It takes a holistic view of the institution and its information needs. An Information Strategy is a set of attitudes in which

- Any information that should be available for sharing (and most will be) is well defined and appropriately accessible (allowing for necessary safeguards);
- The quality of information should be fit for its purpose (in terms of accuracy, currency, consistency, completeness);
- It must be ensured that all staff know, and exercise, their responsibilities towards information;
- A mechanism should be in place which will help clearly identify priorities and then act upon them.

An Information Strategy should cover teaching and learning materials (in all media), research information and data, and management information needed to plan and monitor the delivery of teaching, learning and research. Such information may or may not be held on computers and may or may not be found in libraries.

An Information Strategy will ensure that an institution avoids the following risks

- Fragmentation within the academic community (often because of inadequate budget or faulty budget management) resulting in missed opportunities both for new approaches to teaching and learning and for more effective research initiatives;

- Failure to develop student centered learning, thereby reducing the attractiveness of the institution to existing and potential students – especially given their rising expectations;
- An obsession with and wrong application of technology, resulting in unnecessary spending and wastage of fund. The exploitation of information systems is a very expensive activity that must be carefully planned;
- Technological investment made without the necessary accompanying changes in working practices, attitudes and behavior may lead to undermining much of its value;
- An inappropriate balance of investments and the danger of duplications, inflexibilities and incompatibilities;
- Inadequate evaluation and prioritization of potential investments to inform decisions – with only token links to the objectives of the institution;
- Inefficient use of resources and space;
- Inadequate guidelines resulting in time being wasted; and
- Failure to adopt appropriate technical standards and therefore failure to achieve possible cost savings.

F.6. Training and development of academic staff

If the country is to achieve the ICT vision outlined in F.2 above, major investments are needed to produce a cadre of qualified teachers of ICT, as well as to provide universal training to all teachers in the use of ICT for their own teaching and administration.

The current student-teacher ratio in ICT teaching is moderate. If a basic ICT course is made compulsory for all students, a minimum of two teachers would be required in addition to a lab teacher in each institute. This essentially means that 2,500 teachers would be required over a period of three years in addition to 1,250 lab teachers. Bangladesh Computer Council (BCC) should invite the design and development of an intensive “Basic ICT Teacher Training” course that includes a “Lab Maintenance” part. This course should be conducted full-time over a period of four weeks for teachers who hold B.Ed. and M.Ed. degrees.

To attract qualified ICT teachers a good salary structure should be in place. There must be a financial/funding mechanism other than only relying on the tax payers’ money. ICT teachers should be encouraged to be innovative in teaching and developing learning tools, and these efforts should be adequately rewarded with scholarships and fellowship awards.

A set of measures to attract high quality students and faculty into IT related areas should be in place. The industry should be encouraged to set up attractive fellowship programs for postgraduate studies in IT-related areas and enhancement of R&D qualifications.

As the nationwide BdREN is introduced and as universities and colleges expand their internal networks and use of ICT, the need for staff development and training will significantly increase. UGC may need to introduce special programs of staff development to ensure that all academic staff, the senior ones in particular, are familiar with all aspects of ICT and its use in teaching.

Once this stage has been reached, institutions will have to invest in staff training in the use of Virtual Learning Environments, so that they can use the university’s web site to the full for academic purposes and communications with students.

F.7. Role of colleges

The public and private colleges under the National University and other public universities constitute the core of the national higher educational system and reach over 70% of university enrolment. Thus if Bangladesh wishes to ensure that its students are all ICT-literate, all the colleges must offer high quality ICT courses. ICT should be integrated into the curricula developed by NU and other affiliating universities. However, the current overall picture is quite unsatisfactory and a lot more needs to be done to bring the range and quality of ICT education offered in the colleges to an expected level. The following can be done in a graduated manner

- More streamlined and substantive courses in ICT should be introduced in the colleges.
- Teachers and laboratory technicians should be trained and given salaries matching their skill and expertise.
- Access to computer resources by the colleges should be improved, with proper laboratory facilities being in place.
- BdREN will now extend to the colleges with Broadband and Internet connectivity. The process should be expedited.
- Increased funding for ICT should be made available to colleges.

F.8. National ICT funding

Enhancing ICT capacity in Higher Education will require considerable financial resources covering

- (i) Procurement of hardware and software, followed by regular update and maintenance.
- (ii) Development of the network infrastructure for providing broadband Internet connectivity (including integration with BdREN with access provided to all higher education institutions).
- (iii) Funding for institutional networks and universal academic staff training in ICT.
- (iv) Training and development of teachers in various ICT-related fields of study, including scholarships for Master's and Ph.D. level study in foreign and national universities.
- (v) Development of a Digital Library for subscribing to e-books and journals, including a depository of courseware accessible from all higher education institutions.
- (vi) Establishment of "mirror sites" in Bangladesh holding international courseware or digital resources locally on national servers, thus saving international access costs.
- (vii) Research and Development in selected fields of ICT, with particular emphasis on the use of Bangla and developing courseware in Bangla for different subjects taught in higher education institutions.
- (viii) If Bangladesh wants to achieve the goals of higher education of international standards, investment in the above areas is a must. It is recommended that a separate fund be set up for "ICT in Higher Education." The disbursement from this fund should be made by a committee with representatives from the main stakeholders in higher education. A transparent set of criteria should be used in disbursing the fund.
- (ix) In view of the high level of interest expressed by large global ICT-related companies to promote ICT in developing countries, a model for Public-Private partnership may also be explored. There should also be concerted attempts to interest other possible partners in effective ICT funding, such as

- (x) NGO funded efforts to support initiatives
- (xi) International research networking organizations in Asia, Europe, and North America
- (xii) International funding agencies.

F.9. Major steps to be taken

Implementing e-learning and distance education: New projects should be taken up for implementing e-learning and distance education.

Building close partnership with industry: Universities should take necessary initiatives to build partnership with Industry to adapt to changes based on market demand.

Developing unified curriculum: All universities should follow a unified CSE curriculum, preferably the ones developed by universities with long experience in the area, e.g. BUET and DU.

Setting up a pedagogical/ teachers training academy: A residential Pedagogical / Teachers Training Academy with strong ICT content should be set up to train the university faculty in all aspects of pedagogy. The academy will also impart training in governance and financial management and communication including developing language skills.

Establishing fast global connectivity: Fast global connectivity should be established by utilizing the options that are available within the country.

Training and development of academic staff: A major effort should be in place to recruit qualified ICT teachers and provide continuous training to all teachers in the use of ICT.

Establishing academic networks: Academic networks should be established in all the universities.

Information strategy for each university: Each institution of higher learning should have a clearly defined information strategy.

Software labs in the universities: All the universities will set up fully functional software labs which will, in addition to academic and research needs of the universities, help them ensure outsourcing business facilities.

Linkage between high-tech parks and academia: The universities will work closely with the high-tech parks that have already been set up, and those that are expected to be set up in the future will work closely with the universities to produce graduates according to the market demand.

CHAPTER 8: HOW DO WE GET THERE IMPLEMENTING THE PLAN

The six committees set up to prepare the strategic plan for higher education in Bangladesh for 2018-2030 extensively reviewed existing literature including the 2006 Strategic Plan which they used as baseline, the 2010 Education Policy of the government, various documents prepared by the UGC (including its yearly reports), different committee and research reports prepared by similar bodies engaged in quality enhancement in higher education, and various World Bank / UN reports relating to higher education and the proceedings of workshops and discussion meetings arranged by the committees from time to time. The committees provided detailed reports prepared along the requirements set out in their respective Terms of Reference (TOR) and came up with a number of recommendations for a pragmatic, need based, sustainable and quality enhanced higher education which will be of global standard and will be responsive to the demands of an excellence driven, fast changing, highly specialized, and increasingly research based higher education throughout the rest of the century. The recommendations comprise areas of vision and future direction, governance and management, quality engagement, university research, the use of ICT and funding. Based on these recommendations a plan of action has been drawn which, if followed up and implemented over the next thirteen years, will bring expected outcomes and substantially meet the vision, mission and objectives of the strategic plan for 2018-2030.

It should also be kept in mind that the next thirteen years will be very crucial for the country as it prepares to become a middle-income country by 2021 (and a developed one by 2041). Our higher education will have to produce graduates who will possess some diverse skills set, competence and new knowledge to successfully enter the highly competitive global market. In the next thirteen years, as the world goes through a techno-economic paradigm shift which will also impact our society, economy and the production system, we have to produce graduates who will possess advanced knowledge and skills in diverse areas—in science and technology, engineering, management and so on -- to thrive in any competitive environment. The strategic plan will have to be closely monitored for achieving the goals which becomes imperative in the face of globalization.

The plan components are all important and are expected to be implemented in phases and on the basis of priority. Thus, based on the state of funding and the priority status of the components a short term, a mid-term and a long-term implementation plan may be prepared (this section provides a phase-wise plan that covers most of the recommendations of SPHE 2018-2030).

Increasing government funding: The first strategically important move will be to increase government funding for universities. Efforts will be made to increase government funding to the universities from the current 0.12 % of GDP to 2 % of GDP by 2026 and 3 % by 2030. Correspondingly, allocation to education in the national budget will be increased from the current 8 % to 15 % by 2026. Performance based funding may be considered for the public universities; for example, funding may be linked to the total number of students of an HEI who attain credit and degree completion milestones; the overall performance of the HEI, and its achievements in teaching and research in globally prioritized fields of study.

Adopting zero based budgeting: Side by side, financial management of the universities will also be improved. A zero based budgeting will be adopted. The budget will be rationalized, a cost recovery system will also be designed and adopted and financial accountability enforced. There will be funding to promote partnership with industry, business and public services.

Increasing budget expenditure efficiency of HEIs: Public and private universities will improve their budget expenditure efficiency. The public universities will do so by rationalizing cost estimates for each item of the revenue and capital expenditures and reducing overhead expenditures. Public universities will also consider income contingent fee tuition and other fees will be determined according to the financial solvency of the parents.

Auditing HEIs: A mechanism for independent and external audit of the HEIs will be in place. A state of the art accounting software will also be adopted.

Student loan: The government will set up a Trust / Company with enough endowment support to launch a student loan program. The Trust / Company will set up its operating modalities, including disbursement and recovery strategies. The loans will be soft, will carry an interest rate of around 1% and will be disbursed among needy and meritorious students.

Rationalizing student fees: Student fees will be rationalized according to parents' income. A regulatory body will be set up which will oversee this task and will prepare a set of mechanism according to which this could be done.

Preparing strategic plan for each HEI: Every university will be asked to prepare a five year strategic plan for phase wise activities including teaching-learning, research, expansion of programs and infrastructure, student and faculty intake, financial outlay etc. which will be the basis of UGC/HEC funding.

Ensuring alumni support: Universities will tap their alumni for generating funds, including endowment funds and investment.

Providing need based scholarships: Need based scholarships will be introduced to increase equity and access.

Restructuring UGC, setting up a Higher Education Commission: A major strategic move will be to upgrade and restructure the present UGC and shape it into a Higher Education Commission. The following is a brief outline of, and the rationale for, setting up the proposed Higher Education Commission (HEC)

The University Grants Commission (UGC) was established in 1973 under a Presidential Order which gave the Commission the charter to ensure the quality of higher education throughout the country and provide funds for the public universities. The private universities also came under its jurisdiction according to the *Private Universities Act 1992*. But with 37 public and 94 private universities operating in Bangladesh (2017 figures) UGC is seriously constrained both by a lack of skilled human and financial resources and logistics, and limitations of its authority and terms of engagement with the increasingly complex nature of the problems and issues that characterize our higher education today. It is felt that UGC should be transformed into HEC by enacting a new law, vastly enhancing its capacity, human and financial resources, expertise, response acceleration and autonomy. The Chairperson of the HEC and the members will enjoy enhanced status, more than what the UGC Chairperson and members currently enjoy. The government will provide legal strength to HEC and ensure that the Commission has well trained human and logistic capacity for it to function efficiently. The government will act as a facilitator to the Commission rather than an auditor.

The proposed HEC will play its part in building a knowledge based society. In addition to other functions it will focus more closely on

- Monitoring and encouraging institutions to pursue continuous quality enhancement on their existing strength of teaching and research.
- Facilitate research, innovation and application to meet both local and global demands.

- Help institutions to address the needs of students, teachers, employees and all the stakeholders, and work towards ensuring equal opportunity in accessing quality higher education.
- Prepare a short, medium and long-term plan for higher education and keep the government informed and updated on matters relating to higher education.

A proposal for setting up the HEC has already been made and some progress has already been achieved. The SHED, Minister of Education has recently (on 9th March 2017) reiterated that preparations to launch HEC are in the final stages. It is important that HEC starts functioning as early as possible as it will be the coordinating body in implementing the Strategic Plan 2018-2030.

Setting up a National Research Council: The Strategic Plan for Higher Education 2018-2030 recommends setting up a National Research Council (NRC) on the ground that there is a need to set up a national research body, preferably a council or commission to “set the national research strategy, priorities, policies,” and to “coordinate funding from different development partners and other sources.” It also suggests that the body would work as a “feeder body to the various centers of excellence” and provide funding to encourage “basic and applied research” in institutions of higher education and research.

The NRC will be established by an Act and will be a separate, autonomous institution attached to the Ministry of Education. The NRC will have the mandate to carry out its mission/purpose in entirety or in phases. It will work not only with universities but with research institutions of different sectors, e.g., agriculture, telecommunication, pharmaceuticals, biotechnology, social sciences, etc. in research activities that are aligned with national priorities. It may also link up with the private sector where research activities must be fostered and innovation strengthened.

The NRC will have a governing board comprising eminent academics, scientists and researchers from both public and private universities, representatives from outstanding research institutions, the private sector and the government. The administrative structure will be led by a chief executive (the position of the chief executive may be differently described, depending on the final charter of NRC) with a skilled and highly efficient administrative and support staff. The NRC will have a large pool of experts drawn from priority areas of research but may draw on the expertise and knowledge of scholars / scientists from the universities and research institutions within and outside the country as and when required. The NRC will have a wide-ranging function centering on research –from initiating and evaluating research carried out under its auspices to working as a clearing house for the collection of research, exchange of scientific information and grant administration.

Setting up a central research laboratory: For quality enhancement in scientific, industrial and technological research, a Central Research Laboratory will be set up. The Bangladesh Council for Scientific and Industrial Research (BCSIR) along with its 4 regional centers may be upgraded into a Central Research Laboratory with substantial increase in funding and capacity, and the provision of the latest facilities and equipment as well as logistic support. The Central Research Laboratory will provide all sorts of facilities to the university teachers, students and researchers in connection with their research activities.

Setting up a National Accreditation Council: The strategically significant task of setting up a National Accreditation Council has achieved initial success with the passage of the *Bangladesh Accreditation Council Act 2017* in the parliament. According to the Act a Chairman will head the Council who will be assisted by four full time and eight part time members. Once the mandate, structure, organogram, functions and other specifications are put into place and the Council becomes operative, its areas of work, activities and terms of reference will become clearer, but it will have to perform a set of wide ranging functions for developing policies and guidelines to ensure and embrace quality in higher education on a continuing basis. Ideally BAC will

- Compile indices of various aspects of higher education for setting up standards of quality and monitor their enforcement.
- Draft a national qualification framework for higher education.
- Help universities maintain their institutional quality assurance cells.
- Adopt external quality assurance mechanism to bring universities in line with international performing institutions.
- Ensure integrity and credibility in all universities in dealing with standards for all operation.

Establishing linkages with renowned HEIs: Linkages with renowned higher education providers in the region and beyond will be established for learning and sharing the best practices in teaching, learning and research. Participation of all minority groups in higher education should be ensured.

Preparing policy guidelines: Clear policy guidelines about conducting admission tests; revising and upgrading course and study materials; setting up specific time lines and flow charts for conducting trimester/semester/ yearly courses; conducting post-graduate research and ensuring quality assurance and management in public and private universities will be developed and enforced.

Streamlining semester system: The semester system will be streamlined and reformed to bring it at par with international practices.

Achieving ICT parity: The higher education sub-sector in Bangladesh has seen a significant improvement in achieving ICT parity but progress has not been even or according to need. Except for the top ranking technological and general universities, other universities have not been able to achieve the expected level of progress. If our goal of fulfilling the vision of Digital Bangladesh has to be materialized by 2021, we need to greatly enhance our ICT capabilities. One strategic task in this direction will be to make the university faculty carry out their teaching in an effective way using the current ICT facilities wherever applicable.

Establishing a database of students: A database of all Bachelor's and Master's degree as well as equivalent level degree holders will be created. .

Setting up a teachers training/ pedagogical training academy: To ensure effective application of ICT in teaching and research and all-round improvements in pedagogy, will be set up that will provide training to university teachers in pedagogy with a strong ICT application on a regular basis, keeping them abreast of the latest developments in the field. The academy, which will preferably be a residential one for creating an opportunity of full time involvement of the trainees in a close-knit and participatory environment, will also impart training in governance, financial management and communication, especially in developing language skills. It will organize regular seminars, workshops and international conferences on pedagogy and conduct year-round training in skills development in all areas of teaching and research, digital content creation, open education resources, effective ICT based and learning outcomes and create a repository of digital education materials.

Preparing an ICT vision: ICT in higher education will have an overarching vision that guarantees that all graduates majoring in any field of study have ICT skills, and all teachers teaching using ICT applications in teaching a course are trained in pedagogy; every student has access to computers with high speed broadband Internet connectivity and all higher education institutions switch over to ICT based automation and management, among other components.

Providing e-learning and distance education facilities, campus connectivity, ensuring innovative curricula and maximizing vendor certificate examinations: E-learning, distance learning and virtual classrooms will be promoted and set up with a strong emphasis on creating competitive learning environment. Setting up campus connectivity following the BdREN model, creating high-tech and science parks and innovation in the curricula, maximizing vendor certificate examination such as ITEE, CISCO, and Microsoft etc. can add to the momentum needed to attain ICT parity.

Creating IT / ITeS professionals: There are strong indications that Bangladesh can become an important global IT / ITeS player and earn as much as US\$1 billion from IT / ITeS revenue by 2018 employing 1 million software and IT / ITeS professionals. The universities will take necessary initiative to link up with industry to achieve the required level of ICT penetration.

Setting up a world class flagship university: To take our research to international standards we need to set up a world class university with state of the art facilities and a pool of academics, researchers and scholars with the highest distinction so that it becomes a flagship university, whose primary focus will be post graduate education and offering advanced Master's, M.Phil. and Ph.D. degrees. The university will create "research professionals" recognized for their skill in knowledge generation. One or more world-class flagship universities may be set up in the future depending on need and our success in turning the first world class flagship university into a regional intellectual hub. All the existing universities will function as teaching and research universities with a mission of quality enhancement and carrying out teaching and research of a very high standard. They will distribute their focus equally on teaching and research. The world class flagship university will conduct both basic research – in collaboration with overseas universities – and strategic research that combines application needs of the country. The flagship university will have a fair degree of autonomy and academic freedom, and a strong funding support.

Restructuring the National University: The National University will be reorganized to upgrade its capabilities and provide it the required dynamism to function as a center of excellence. The colleges under the National University will be transformed into regional campuses headed by a Pro-Vice Chancellor and will aim at imparting quality education. The central campus at Gazipur can function as the administrative center and have the responsibility to train college teachers. It may also be turned into a post-graduate university. A series of reforms including provision for professional education to ensure skills development and produce industry specific professionals will be in place. The National University will work closely with the proposed NRC to enhance research and development and train up the faculty of colleges in ICT and other related subjects. The university is currently implementing a five-year (2016-17) College Education Development Project (CEDP) costing US\$130 million for meeting its quality enhancement goals.

The university will have a strong quality assurance mechanism established to enhance the quality of college education. The larger among NU's colleges, especially those in district towns with no public university will be upgraded and given a fair degree of autonomy for eventually turning them into universities. Some of these will be specialized as science and technology universities.

Defining the nature of affiliation of government colleges with public universities: The government recently re-affiliated 7 government colleges with Dhaka University in a move to eventually give the responsibility of managing the academic and examination related matters of government colleges to public universities, taking them away from the jurisdiction of NU.

This will no doubt put additional pressure on the existing resources of public universities. The combined student population of the colleges is much higher than some of the universities they are affiliated with. Unless the universities are adequately staffed and necessary funds are made available, the move will not bring the expected results. Besides, the colleges have to bring their curricula and teaching efficiency to the level of the affiliated universities which will need a great deal of work with the curricula and faculty training.

The problem of dual administration of the colleges will also persist. While the public universities will administer the academic and examination related matters, just as NU did in case of the re-affiliated colleges and is doing in case of all other colleges, Secondary and Higher Education Division (SHED) will administer the recruitment / selection of teachers and their placement, promotion etc. in government colleges. Since the government aims at enhancing the quality of the colleges, and plans to upgrade some of them into public universities, it will give the responsibility of faculty recruitment/selection and other matters to the public universities. This might take some time as many legal and procedural matters are involved, but eventually this will be done to take our higher education to global standards.

In the meantime, the public universities will set up a special cell / wing under a Pro-Vice Chancellor to deal with the colleges, with sufficient human resources and trained personnel at his / her disposal to supervise and monitor the academic activities of the colleges and conduct the examinations. The Pro-Vice Chancellor will also closely liaise with SHED and the Ministry to ensure the best management of the colleges.

Improving teaching-learning in BOU: There are scopes for improving teaching-learning in the Bangladesh Open University especially in its higher education segment. The university will conduct systematic research to find out which subject / courses are in demand and how to develop and update course materials. The university will add some new and feasible e-learning systems to reflect recent developments in ICT. Funding for the university will be increased to enable it to adopt modern distance education technologies like LMS and open educational resources. BOU will also use computing media and digital technologies for teaching. The university will establish partnerships with the relevant institutions to take advantage of the support available.

Setting up teaching-learning centers in all universities: All universities will have their teaching learning centers.

Redefining accountability and institutional autonomy: Accountability and institutional autonomy in the universities will be redefined. External influence on the governance of the universities will be eliminated, and students' politics of the kind that leads to violence, influence paddling and divisiveness will to be discouraged, and in its place students will be encouraged to pursue a culture of idealism, social pro-activism, democratic values and character building. All universities will outline and submit an SOP (standard operating procedure) for each administrative as well as academic position and will be followed as a by-law for that tier. Autonomy for individual faculty members and their administrative bodies will be ensured. Public universities will be democratized and the election processes for various statutory positions of faculties will be made transparent and free from national politics.

Establishing university-industry collaboration: Strong university-industry collaboration will be built for research and research funding. The collaboration will include joint research, contract research and consultancy, among others. Public-private partnership in research will be encouraged to smartly create knowledge bridges for Bangladesh to successfully transit through the 21st century.

Protecting intellectual property right: Intellectual property right will be enforced to protect outcomes of university research. Universities will set up Office of Intellectual Property Management (OIPM) / Technology Transfer Office (TTO) for putting necessary protection regime in place.

Preparing curricula in collaboration with Industry where applicable: An important aspect of the strategic plan will involve setting up a cooperation model in higher education where employment providers (the Industry) and the universities will jointly formulate curricula reflecting requirements of the country and provide practical apprenticeship to strengthen academic training.

Organizing residential semesters in rural areas: To familiarize our intending graduates with the development activities at the grassroots as well as the problems and challenges that we face, and to strengthen their commitment to the development of the country a nine-credit winter residential rural semester for all university students will be developed. This will give them an opportunity to learn the various aspects of our development and the need for an informed engagement with the grassroots.

Encouraging cross-university exchange programs: A cross-university students' exchange program will be taken up to create greater understanding and partnership among students and faculty monitoring opportunities.

Formulating a policy guideline about Islamic Arabic University: A clear policy guideline and supervision of the Islamic Arabic University (IAU), which looks after the academic aspects of Aliya Madrasas at the level of Fazil (Honours) and Kamil (Master's) studies, will be in place. The university was set up in 2013 under an Act of the parliament. The university will also closely supervise the higher education component of the Qawmi madrasas for quality assurance so that the education imparted is consistent with the goals of NEP 2010. IAU will streamline the higher education component of madrasa education, modernize its content and optimize its outcome.

Table 8.1 SPHE 2018-2030 Phase-wise action plan

Sl	Actions to be implemented phase wise	Implementing Organisations /Agencies	Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
1.	Increasing the share of Higher Education in National budget to 6% by 2030	SHED, MoE	✓	✓	✓
2.	Performance based funding to universities	SHED, MoE, UGC or HEC when it becomes operative	✓	✓	✓
3.	Improving financial management of the universities	SHED, MoE, UGC/HEC	✓	✓	✓
4.	Introducing zero based budgeting	SHED, MoE, UGC/HEC, Universities	✓	✓	✓
5.	Building relationship between universities and their alumni	UGC/HEC, Universities	✓	✓	✓
6.	Introducing need based scholarship system in universities	SHED, MoE, UGC/HEC and Universities	✓	✓	✓
7.	Restructuring UGC/Setting up Higher Education Commission (HEC)	SHED, MoE, UGC/HEC	✓		
8.	Setting up a Central Research Laboratory by upgrading the BCSIR with its four regional centers	SHED, MoE, UGC/HEC and Universities	✓		
9.	Setting up a National Research Council (NRC)	SHED, MoE, UGC/HEC	✓		
10.	Operationalizing the Bangladesh Accreditation Council (BAC)	GoB/SHED, MoE	✓		
11.	Setting up a residential pedagogical/ training academy for university teachers	SHED, MoE, UGC/HEC	✓		
12.	Setting up a world-class flagship university	SHED, MoE, UGC/HEC	✓	✓	
13.	Setting up ICT based information and management system in universities	UGC and Universities	✓	✓	

SI	Actions to be implemented phase wise	Implementing Organisations /Agencies	Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
14.	Setting up distance learning and virtual classrooms in universities	UGC/HEC and Universities	✓	✓	
15.	Expanding BdREN to all tertiary level institutions and Research Institutes	SHED, MoE, UGC/HEC, BdREN Trust, Universities	✓	✓	✓
16.	Setting up university-industry linkages	UGC/HEC and Universities	✓	✓	✓
17.	Reorganizing governing bodies of public universities	Public Universities	✓	✓	
18.	Setting up teaching-learning centers	SHED, MoE, UGC/HEC and Universities	✓	✓	
19.	Ensuring intellectual property right	SHED, MoE, UGC/HEC, Universities	✓	✓	
20.	Supervising foreign universities branches	SHED, MoE, UGC/HEC	✓	✓	✓
21.	Introducing winter residential rural semester for students	UGC/HEC, Universities	✓	✓	
22.	Formulating policy guidelines for Islamic Arabic University	SHED, MoE, UGC/HEC, IAU	✓	✓	
23.	Reviewing Legislation (Public and Private universities)	SHED, MoE, UGC/HEC	✓	✓	
24.	Enacting an Umbrella legislation covering the basic functions of all public universities	SHED, MoE, UGC/HEC, Public Universities	✓	✓	
25.	Operationalizing all the universities for which laws have been passed	SHED, MoE, UGC/HEC		✓	
26.	Improving logistic support for teaching	SHED, MoE, UGC/HEC, Universities	✓	✓	✓
27.	Restructuring National University (NU)	SHED, MoE, UGC/HEC	✓	✓	

Sl	Actions to be implemented phase wise	Implementing Organisations /Agencies	Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
28	Accelerating internal resource mobilization by the universities	SHED, MoE, UGC/HEC, Public Universities	✓	✓	✓
29	Providing ICT facilities to all public universities and affiliated colleges	SHED, MoE, UGC/HEC, Public Universities, Colleges, BdREN Trust	✓	✓	✓
30	Setting up Research Coordination Cells in the Ministries	SHED, MoE	✓	✓	
31	Supporting Ph.Ds and new researchers	SHED, MoE, UGC/HEC	✓	✓	✓
32	Setting up new universities as required	SHED, MoE, UGC/HEC	✓	✓	✓
33	Setting up a regulatory body for rationalizing students' fee structure in the public universities according to parents' income	SHED, MoE, UGC/HEC, Public Universities	✓	✓	✓
34	Setting up a Trust/ Company with government endowment fund to operate student loan program	SHED, MoE, UGC/HEC	✓	✓	✓
35	Setting up a Post Graduate University. National University will be turned into a post graduate university in addition to its present administrative functions	SHED, MoE, UGC/HEC, National University	✓	✓	✓
36	Preparing and approving (by the Chancellor) an organogram for each public university and recruiting work force accordingly	SHED, MoE, UGC/HEC, Public Universities	✓	✓	✓
37	Preparing a 5-year Strategic Plan by each university.	Public and Private Universities	✓	✓	✓
38	Introducing cluster wise admission system for all public universities	SHED, MoE, UGC/HEC, Public Universities	✓		

Sl	Actions to be implemented phase wise	Implementing Organisations /Agencies	Phase 1 2018-2022	Phase 2 2023-2027	Phase 3 2028-2030
39	Formulating uniform recruitment rules with a provision of written test, demonstration class and interview for public universities.	SHED, MoE, UGC/HEC, Public Universities	✓		
40	Formulating uniform recruitment rules with a provision of written test, demonstration class and interview for private universities	SHED, MoE, UGC/HEC, Private Universities	✓	✓	
41	Formulating a policy guideline for community level fund generation by the universities	SHED, MoE, UGC/HEC	✓	✓	

Achieving strategic plan targets: A 5-year plan of action

Although the recommendations and targets listed in SPHE 2018-2030 are planned to be implemented in three phases, a fast track option for five years — reflecting the need to achieve the major targets in a manageable time frame — is also suggested. The first few years of the plan will be vital in terms of both realization and delivery of goals. The first phase, slotted to end in 2022, will be the phase that will see all activities begun and some completed. To put these major projects on the first track will be a challenge, but if the time span of the first phase is extended by a year (thus coming up with a 5-year chunk), not only can the activities be completed but some activities from the second phase can also be accommodated and get done. Bangladesh has a history of 5-year plans, and the 5-year strategic plan can benefit from the country's experience of conducting them, some quite successfully.

5-Year fast track plan of action for higher education

1	Increasing the higher education's share in national budget to 2% by 2022.
2	Operationalizing Bangladesh Accreditation Council (BAC).
3	Upgrading UGC and turning it into Higher Education Commission (HEC).
4	Preparing an Umbrella Act covering the basic functions for all public universities.
5	Establishing a world-class flagship university.
6	Setting up National Research Council (NRC).
7	Setting up a residential Pedagogical / Teachers Training Academy.
8	Setting up a Central Research Laboratory.
9	Expanding BdREN to all tertiary education institutions and research institutes.
10	Improving financial management of the universities.
11	Setting up an ICT based information and management system in the universities.
12	Establishing teaching-learning centers in all universities.
13	Providing high speed Internet access to all the students, and ICT facilities to all the universities and affiliated colleges.
14	Reviewing, amending and streamlining Private University Act 2010.
15	Restructuring/ Decentralizing National University (NU).
16	Restructuring Bangladesh Open University (BOU).
17	Formulating policy guidelines for Islamic Arabic University.
18	Enhancing teaching learning environment and logistic support to the madrasas.
19	Setting up a post-graduate university (preferably turning NU into one).
20	Introducing need based scholarship programs in the universities.
21	Ensuring intellectual property rights for university faculty.
22	Setting up research coordination cells in government ministries.
23	Introducing and accelerating internal revenue mobilization measures in the universities.

24.	Setting up a regulatory body for rationalizing students' fee structure in the public universities according to parents' income.
25	Ensuring that all universities have well trained and efficient security teams.
26	Operationalizing a well-defined information strategy in all universities.
27	Introducing a residential semester and apprenticeship program for all universities in rural areas.
28	Introducing a new admission system for all public universities by clustering them according to type, e.g., General, Engineering, Medical, Agriculture, Science & Technology etc. and, by the end of the five year plan period, switch to online admission (including tests in real time and other matters).
29	Formulating uniform recruitment rules with provision of written test, demonstration class and interview for public universities.
30	Formulating uniform recruitment rules with a provision of written test, demonstration class and interview for private universities.
31	Formulating a policy guideline for community level fund generation by the universities.
32	Setting up a Trust/ Company with government endowment fund to operate a student loan program.
33	Reorganizing the governing bodies of public universities to include more stakeholder representation in Senate, Syndicate and Financial Committees.
34	Formulating a clear policy about re-affiliating government colleges with public universities, keeping in mind the universities' limited ability to handle the additional pressure, and the need to empower them with necessary funding and resources. The dual administration of colleges (NU/SHED) will need to be replaced by a single administration which will take care of recruitment, placement, promotion, administration, management and academic and examination related matters.

CHAPTER 9: THE WAY FORWARD

1. Introduction

The goals and strategies of the Strategic Plan for Higher Education (SPHE) 2006-2026 have been substantially revised, updated and expanded in the Strategic Plan for Higher Education (SPHE) 2018-2030. In the decade between the two strategic plans, the country has seen some significant changes and developments in its socio-economic landscape, education sector and the job market. The country is achieving GDP growth of 6 % on an average for the last decade (it crossed 7 % in 2016) driven by strong growths in agricultural and industrial production, exports, remittances from abroad and tax and revenue collection. An education policy has been adopted (NEP 2010) which clearly outlines the vision and objectives of education, including higher education of the country. A draft Education Act has been prepared to put NEP's objectives into action; digitalization measures have picked up and an ICT based program of action, Vision 2021 (subsequently expanded to 2041), has been launched and the country's 7th Five Year Plan 2015-2020 has put a strong emphasis on achieving higher education goals. All these policies and measures have given a strong impetus to the country's commitment to reform and restructure the higher education sub-sector.

Another development in the last decade has been the emergence of a strong private sector in higher education. The number of private universities has proliferated (the number was 94 according to UGC's latest estimate in March, 2017) with some of them providing quality education. Indeed, the private universities have become the bigger provider of higher education in the country than the public universities other than the National University.

SPHE 2018-2030 becomes all the more relevant and important in light of the country's resolve to go forward in the path of higher education and take it to global standards. SPHE 2018-2030 can also cash in on the climate of readiness and cooperation as the government, the relevant ministries, the UGC, the universities and the stakeholders are all willing to play their roles in ensuring that the strategic plan's vision, objectives and goals are materialized. SPHE 2018-2030 has listed a number of activities that must be performed and the responsibilities that need to be shared by all participating parties for implementing the plan, and it is expected that their concerted efforts will match our expectations of seeing vast changes in our higher education scene.

Thus, the government will be expected to handle the largest share of responsibilities, and it has already shown its willingness to do so. An accreditation council bill has already been passed in the parliament, and operationalizing the Bangladesh Accreditation Council (BAC) will set into motion the much needed quality assurance and enhancement measures. The Minister of Education has once again reiterated the government's resolve to set up a Higher Education Commission very soon (Daily Samakal, 9 March 2017) which will be a more powerful body than UGC with adequate manpower and resources to perform its supervisory and regulatory functions.

It is expected that by the end of the strategic plan period (2030) the government will have achieved the following goals listed in SPHE 2018-2030

- Increased funding to higher education from the current 0.73 % to 6% in the national budget by the end of the strategic plan period.
- Enacted an Umbrella Legislation for better management of the universities and removing anomalies among the different legislations under which the public universities are administered. And this has been done in consultation with all the public universities and accommodating their separate expectations.

- Set up a World-class flagship university, a National Research Council, a Teacher Training /Pedagogical Training Academy, a Central Research Laboratory and other research bodies with state of the art facilities.
- Rationalized the number, scope and size of universities so that new universities have been allowed only on the basis of a felt need. The government has given priority to specialized universities and also upgraded the existing universities, enhancing their capabilities and standards of education and research.
- Taken adequate measures to rid the universities of outside political interference and encouraged students to pursue politics that is democratic and people oriented and not connected to partisan and divisive politics.
- Made the appointment of key posts (Vice Chancellor and Pro-Vice Chancellor, in particular) transparent and strictly on the basis of merit and qualification.
- Provided adequate funding to public universities to enable their faculty to pursue doctoral studies abroad.

By the end of the plan period, the Bangladesh Accreditation Council (BAC) has prepared and set up benchmark quality assurance and enhancement mechanisms, and all the universities are following them. This is resulting in their all-round development. BAC is continuously monitoring the progress of the universities and ensuring that quality standards are met.

By 2021, the Higher Education Commission (HEC) is fully operational and is providing leadership and guidance to all the universities in achieving the objectives of quality teaching-learning and research; and the universities are strictly following a uniform recruitment and promotion rule and turning into intellectual and cultural hubs.

The universities, by the end of the plan period, have received adequate allocations from the government, but are also raising funds on their own to complement government funding. The increased funding has resulted in improved classrooms, libraries, laboratories, dormitories and sports and cultural facilities. The students are also practicing democratic ideals and elected students' unions are spearheading people oriented policies and contributing to achieving educational, cultural and social goals. The universities have created partnership with industry and gaining from commercializing research. The government has set up a trust / company with an endowment fund which is providing loans to students on a nominal interest rate; and banks and financial institutions in the public and private sector, having been encouraged by the government and the universities, are providing student loans on attractive terms. More importantly, the universities have hugely improved their quality of teaching and research and attained international standards; developed global connectivity and established partnerships with other universities in the region and beyond to promote research and exchange programs. They are also working closely with HEC and BAC to continuously enrich their teaching-learning and research. Universities are also attentive to students' needs and welfare.

The colleges, by 2030, have attained standards in teaching-learning and research and upgraded their status. They also have adequate and highly qualified faculty and the necessary infrastructural and academic facilities, including libraries and laboratories. They also enjoy a fair degree of autonomy and are working under a single authority — NU / the public universities to which they are affiliated. A few of the larger colleges have been upgraded into public universities. NU, in addition to its responsibilities to administer the colleges' academic and examination related matters, is also looking after recruitment, placement, etc. The university's Gazipur campus is working as a specialized post-graduate university.

By 2030, all the private universities have been operating from their own campuses (set up according to SHED, MoE stipulations) and providing quality education to their students and conducting research, utilizing state of the art research facilities. They have rationalized their fee structure, providing more

scholarships and waivers to students, and are conducting cultural and sports events throughout the year. Their faculty have the highest qualifications and the number of part timers has been drastically reduced. They are also following quality standards set by BAC and are closely following government rules and regulations.

The stakeholders of the universities, such as students, parents, members of the communities in which they are located, the alumni, the industry and development partners, by 2030, have actively involved themselves in the universities' efforts to attain excellence in their teaching-learning, research, administration and management. Since the universities, in 2030, are producing students with the highest skills, specialized knowledge, communication abilities and leadership qualities, the stakeholders are taking increasing interest in maintaining and upgrading their standards, and providing funding support.

2. Bridging the gaps

The implementation of SPHE 2018-2030 is expected to lead to a paradigm shift in the way we perceive and deliver our higher education. A successful implementation of the plan means that academic excellence is not limited to selected pockets, i.e. the top few universities, but is a common feature among all the higher education institutions. We will also see the gaps that exist today in many areas narrowed or even eliminated. Some of the gaps that will be substantially reduced or bridged will be those between

- the labor market needs and the provision of education
- graduate degrees and employability
- quantity and quality
- private provision and standards of quality
- curricula and emergent needs
- research needs and output
- equity, access and the increasing need for places in public universities
- increasing funding needs and education budget
- women's participation in higher education and their less than satisfactory presence in advanced science and technology fields.

3. Oversight and monitoring of SPHE 2018-2030

A strategic plan that has a life span of thirteen years and targets vast improvements in every area of higher education will have to be closely monitored and supervised by all the participating parties, although the major share of the responsibility will fall on UGC/HEC, the Secondary and Higher Education Division (SHED) of the Ministry of Education and the universities. The BAC, once operationalized, will also have a supervisory role in addition to its quality assurance and enhancement functions. The stakeholders including students, faculty and staff of the universities, the communities they serve, the alumni, the industry and the media will also have strong monitoring roles.

In this regard two high powered committees will be set up. The first one will be a national committee for supervision chaired by the Minister of Education with representation from concerned ministries, UGC, universities, and experts and specialists. The second one will be formed to monitor the progress of implementation of SPHE 2018-2030 and will be headed by the Chairman of UGC with members drawn from the universities, experts and specialists, industry and the civil society. The committees will sit regularly to expedite the full implementation of the Strategic Plan.

Appendix B

Expert Groups

Group A: Vision, Size and Shape Group

1.	Dr. Mohammed Farashuddin, Chairperson, Board of Trustees, East West University, Aftabnagar, Dhaka	Convener
2.	Professor Dr. M. Omar Rahman, VC, Independent University, Bashundhara, Dhaka	Member
3.	Professor Dr. Mohammad Yousuf Ali Molla, Member, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
4.	Professor Dr. Mahfuzul Haque Chowdhury, Department of Political Science, University of Chittagong	Member
5.	Professor Dr. Kazi Shahidullah, Department of History, University of Dhaka	Member
6.	Md. Ahsan Ullah, Former Executive Director, Bangladesh Bank, Motijheel, Dhaka	Member
7.	Dr. Md. Khaled, Secretary, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
8.	Dr. Md. Ali Akbar, Chief Research Officer (Joint Secretary), SPU, HEQEP, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member

Group B: Quality Group

1.	Professor Dr. Dil Afroza Begum, Member, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Convener
2.	Professor Dr. A.M.M. Safiullah, VC, Ahsanullah University of Science and Technology, Tejgaon, Dhaka	Member
3.	Professor Dr. H. M. Jahirul Haque, Pro-VC, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka	Member
4.	Professor Dr. Fakrul Alam, Dept. of English, University of Dhaka	Member
5.	Professor Dr. Milan Kumar Bhattacharjee, Treasurer, University of Liberal Arts Bangladesh, Dhanmondi, Dhaka	Member
6.	Senior Research officer, SPU, HEQEP, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member

7.	Chief of Planning, Ministry of Education, Bangladesh Secretariat, Dhaka	Member
8.	Syed Nurul Islam, Chairman, Well Group of Industries, Dhaka	Member

Group C: Governance and Management Group

1.	Professor Dr. Md Nazrul Islam, Former Chairman, UGC, Dhanmondi, Dhaka	Convener
2.	Professor Dr. Md. Anwarul Azim Arif, Department of Human Resource Management, University of Chittagong	Member
3.	Professor Md. Noman Ur Rashid, Treasurer, National University, Gazipur	Member
4.	Professor Farid Uddin Ahmed, Dean, Faculty of Social Science, University of Dhaka	Member
5.	Professor Dr. Syed Ferhat Anwar, IBA, University of Dhaka	Member
6.	Professor Dr. Jahangir Alam, Department of Finance, University of Chittagong	Member
7.	Dr. Gauranga Chandra Mohanta ndc, Project Director (Additional Secretary), HEQEP, UGC, Karwanbazar, Dhaka	Member

Group D: Future Funding Group

1.	Professor Dr. M. Shah Nowaz Ali, Member UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Convener
2.	Professor Dr. Itekhhar Uddin Chowdhury, VC, University of Chittagong	Member
3.	Professor Dr. Mohammad Ali Taslim, Department of Economics, University of Dhaka	Member
4.	Professor Dr. Mohammad Musa, Dean, School of Business and Economics, United International University, Dhanmondi, Dhaka	Member
5.	Professor Dr. A. K. Enamul Haque, Department of Economics, East West University, Aftabnagar, Dhaka	Member
6.	Representative of Finance Division, Ministry of Finance, Bangladesh Secretariat, Dhaka	Member
7.	Mr. Sohel Ahmed, Deputy Project Director (Joint Secretary), HEQEP, UGC, Ministry of Education, Dhaka Trade Centre(8 th floor), Karwanbazar, Dhaka	Member

8.	Dr. Md. Shamsul Arifeen Khan Mamun, Research Officer (Associate Professor), SPU, HEQEP, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
9.	Mr. Kazi Akram Uddin Ahmed, Chairman, Standard Chartered Bank, Motijheel, Dhaka	Member

Group E: University Research Group

1.	Professor Dr. Syed Saad Andaleeb, VC, BRAC University, Mohakhali, Dhaka	Convener
2.	Professor Dr. Farid Uddin Ahamed, Department of Anthropology, University of Chittagong	Member
3.	Professor Dr. Md. Abdul Aziz, Dean, Faculty of Science, University of Dhaka	Member
4.	Professor Dr. Mohammad Mohibul Aziz, Department of Bangla, University of Chittagong	Member
5.	Mr. Md Abdullah Al Hasan Chowdhury, Additional Secretary (University), Secondary and Higher Education Division, Ministry of Education	Member
6.	Mr. Md. Kamal Hossain, Additional Director, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
7.	Dr. Md. Sirajul Islam, Research Officer (Deputy Secretary), SPU, HEQEP, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
8.	Mr Anis A Khan, Chairman, Association of Bankers Limited, Gulshan, Dhaka	Member

Group F: ICT in Higher Education Group

1.	Professor Dr. Md. Akhtar Hossain, Member, UGC, Agargaon, Sher-e-Bangla Nagar, Dhaka	Convener
2.	Professor Dr. Mohammad Rafiqul Alam, VC, Chittagong University of Engineering and Technology, Chittagong	Member
3.	Professor Dr. M. Kaykobad, Dean, Faculty of Electrical and Electronics Engineering, Bangladesh University of Engineering and Technology, Dhaka	Member
4.	Professor Dr. M. Abdus Sobhan, VC, Prime University, Mirpur, Dhaka.	Member
5.	Professor Dr. Syed Akhter Hossain, Head, Department of Computer Science and Engineering, Daffodil International University, Shukrabad, Dhanmondi, Dhaka	Member

6.	Professor Dr. Muhammed Zafar Iqbal, Department of Computer Science and Engineering, Shahjalal University of Science and Technology, Sylhet	Member
7.	Mr. S. M Ashrafur Islam, Executive Director, Bangladesh Computer Council, Agargaon, Sher-e-Bangla Nagar, Dhaka	Member
8.	Mrs. Mahbuba Panna, Deputy Secretary, Information and Communication Technology Division, Agargaon, Sher-e-Bangla Nagar, Dhaka.	Member
9.	Mr. Mustafa Jabbar, President, Bangladesh Association of Software & Information Services (BASIS), BDBL Bhaban (5 th floor), Karwanbazar, Dhaka	Member

Appendix C

National Consultant for Reports Editing, Integration and Improvement

Professor Dr. Syed Manzoorul Islam
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