Bangladesh: Public-Private Partnership in Higher Education
(Financed by Asian Development Bank)

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Executive Summary

Public–private partnerships (PPPs) and university–industry linkages (UILs) in higher education offer potential for overcoming some of the critical challenges and for developing the higher education subsector in Bangladesh. Given the government’s limited budget allocation to the higher education subsector, promoting PPPs andUILs are critical to expand access of higher education, improve higher education programs in responding to the country’s needs, and improve effectiveness of management and administration.

The following are urgent challenges of higher education: (i) diversification needs of higher education institutions (HEIs), (ii) boosting quality to improve competitiveness, (iii) building research capacities to foster innovation, (iv) strengthening and applying information and communication technology infrastructure in the higher education system, (v) improvement of relevant postgraduate programs, and (vi) improving higher education sector management to ensure accountability and transparency.

The public universities currently have few links with the labor market, and thus course offerings and contents are deficient in providing graduates with knowledge and competencies sought by the labor market. The private universities tend to meet short-term training demands, although they are more responsive to labor market signals. A key concern is the international labor market, where around 7% of the total labor force is remitting a significant amount of foreign currency, 11.1% of national gross domestic product. About 4.3% of those held higher education credentials. These workers need internationally-competitive skills. This is not to mention the demand for competent, skilled workers in the growing service industry, in the expanding garment sector, and to release the tremendous development potential lying in the agricultural sector, where nearly 50% of the Bangladesh population are engaged.

Readiness and capacity of Bangladesh to carry out sustainable, long-term PPP projects in higher education are critical. While overall prospects for PPP development remain bright, the government needs to continue reforms and address capacity gaps for the design and implementation of effective projects. This requires, among others, a change of mind-set and shifting of focus from sovereign projects to building a viable PPP portfolio. A road map for the implementation of PPPs in the higher education subsector or an overall PPP policy for the education sector is necessary. It will give guidance and create confidence among investors. Additionally, the support forUILs through business incubation centers is strongly recommended to be an integral part of the PPP policy.
I. THE CURRENT SITUATION OF HIGHER EDUCATION IN BANGLADESH

A. Background, Country Context and Economic Indicators

1. Bangladesh is a relatively small agriculture-dominated country of 147,570 km² with a huge population of 149.71 million (around 80% live in the rural areas). The workforce has reached 73.9 million (with estimated 22.0 million new entrants between 2005 and 2015). Bangladesh has established a steady economic growth at 6%–7% per annum since 1996 and a current gross domestic product (GDP) per capita of $752 in 20122 despite the challenges that Bangladesh has been facing such as political instability, insufficient infrastructure, corruption, insufficient power supplies, economic reforms taking longer than anticipated, and the 2008–2009 global financial crisis and recession.3

2. A high illiteracy rate, low secondary and higher education enrollment ratios, low percentage of highly skilled workers, brain drain among more educated people, a predominantly rural population, high level of poverty, high dependence on agriculture, small modern sector (economic and social)—all this suggests that further improvements in competitiveness will heavily depend on expanding access to and improving quality of education, especially in science and technology.

3. Bangladesh is not in a good competitive position within the world economy. The World Global Competitiveness Report, 2013–2014 has ranked Bangladesh 120th out of 146 countries for “capacity of innovation” and 134th for “university–industry cooperation in research and development.” These rankings have been at the same level in the past few years.

4. The annual population growth rate is 1.2%4 and the population is young.5 Youth constitutes one-third of the growing total population and represents a development priority agenda for the Government of Bangladesh.6 While the unemployment rate is estimated to be 5.1% as of 2010, underemployment is estimated to be as high as 28.7% and youth unemployment at 12%–13%.

5. GDP is largely generated by three main sources: (i) agriculture contributed 17.7% of the GDP in 2012,7 (ii) the garment manufacturing sector contributed $19 billion in the year to June 2012,8 and (iii) remittances from more than five million overseas workers totalling $11 billion in 2010 accounted for almost 12% of the GDP.9

6. Although more than half of the GDP is generated through the service sector, almost half of Bangladeshis are employed in the agriculture sector, with rice as the single most important product. Garment exports, the backbone of Bangladesh’s industrial sector and accounting for 80% of total exports, surpassed $21 billion last year, 18% of the GDP. Steady garment export growth combined with remittances from overseas Bangladeshis, which

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4 2012 list by the World Bank. UN estimate is as high as 1.67 and CIA *World Factbook* 1.59.
5 Age median is estimated to 24.3 years in 2014 (male: 23.8 years, female: 24.8 years). United Nations, Department of Economic and Social Affairs. 2012. *World Population Prospects: The 2012 Revision*.
totalled almost $15 billion and 13% of the GDP in 2013, are the largest contributors to Bangladesh’s current account surplus and record foreign exchange holdings.

7. Bangladesh spends only 2.30% of GDP for education and 0.12% for higher education. The share of higher education in the total education budget is about 11.0%, which is the lowest in South Asia. Public universities are mostly funded by the government through the University Grants Commission (UGC).

8. Bangladesh achieved a net enrollment ratio of 96.7% and gender parity in primary education with a literacy rate of around 56%. This is a country with 104,017 primary schools of 10 types, 19,208 secondary schools, 3,547 degree-offering colleges and institutions, 9,441 madrasahs, and 96 universities (60 private universities, 34 public universities, and 2 international universities). English is the second language along with the national language (Bangla) and 45 ethnic languages among the tribal population.

9. Its plentiful human resources have great potential for boosting Bangladesh's economic growth, but challenges remain in turning the young and growing population into a skilled and productive workforce and financing of the same. The government’s Sixth Five-Year Plan emphasizes accelerating economic growth through productive employment (high-income jobs in the formal sector) and associated reduction in poverty, and stresses the need to address both demand and supply sides of the employment market. As the goal, as well as the means of national development, the government continues to make mass education one of its top priorities, especially at the primary and secondary levels.

B. Financing of Higher Education

10. De facto priority in financial allocation terms reveals the following stress on higher education financing. Public expenditure per student in higher education, as percent of GDP per capita, was 28.2% in 2009. It was down to 20.0% in 2011. No data could be found documenting a change in this significantly downward trend in public financial allocations. Enrollment rates in secondary and higher education are below the South Asian average, and quality remains a significant issue to address. In other Asian countries, the government finances the majority of higher education costs. But in recent years in Bangladesh, public expenditure on higher education has been steadily declining. The amount of funds allocated for higher education in Bangladesh’s national budget makes it uncertain whether quality can be enhanced under the present financial conditions. This calls for new approaches and ways of closing the higher education financing gap and making higher education the development driver it has the potential to be. Prevailing public financing is illustrated in tables 1 and 2.

### Table 1: Status of Government Funding

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>National Budget (Tk million)</th>
<th>Increase of National Budget (%)</th>
<th>Budget for MOE (Tk million)</th>
<th>Increase of MOE Budget (%)</th>
<th>Budget for UGC (Dev &amp; Non Dev) (Tk million)</th>
<th>Increase of UGC Budget (%)</th>
<th>Expenditure of University Education (Tk million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>94,140.00</td>
<td>-</td>
<td>6,739.22</td>
<td>-</td>
<td>896.28</td>
<td>-</td>
<td>902.61</td>
</tr>
<tr>
<td>2010</td>
<td>110,523.00</td>
<td>17.40</td>
<td>8,971.68</td>
<td>33.13</td>
<td>1,116.72</td>
<td>24.60</td>
<td>1,117.54</td>
</tr>
<tr>
<td>2011</td>
<td>132,170.00</td>
<td>19.59</td>
<td>10,175.65</td>
<td>13.42</td>
<td>1,501.57</td>
<td>34.46</td>
<td>1,524.11</td>
</tr>
<tr>
<td>2012</td>
<td>163,589.00</td>
<td>23.77</td>
<td>10,649.99</td>
<td>4.66</td>
<td>1,657.45</td>
<td>10.38</td>
<td>1,702.73</td>
</tr>
<tr>
<td>2013</td>
<td>191,738.00</td>
<td>17.21</td>
<td>11,558.97</td>
<td>8.54</td>
<td>1,774.70</td>
<td>7.07</td>
<td>1,761.97</td>
</tr>
</tbody>
</table>

= not available, MOE = Ministry of Education, Tk = Bangladesh taka, UGC = University Grants Commission.

Source: Government of Bangladesh, Ministry of Finance budget documents.

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12 World Bank. 2011. World Development Indicators. Washington, DC.
Table 2: Share of University in Education Budget and in National Budget

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Funds Allocated for Universities: Percent of Education Budget</th>
<th>Funds Allocated for Universities: Percent of National Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>7.87</td>
<td>0.88</td>
</tr>
<tr>
<td>2007</td>
<td>6.98</td>
<td>0.92</td>
</tr>
<tr>
<td>2008</td>
<td>7.54</td>
<td>0.75</td>
</tr>
<tr>
<td>2009</td>
<td>7.35</td>
<td>0.79</td>
</tr>
<tr>
<td>2010</td>
<td>7.44</td>
<td>0.78</td>
</tr>
<tr>
<td>2011</td>
<td>8.22</td>
<td>0.84</td>
</tr>
<tr>
<td>2012</td>
<td>6.48</td>
<td>0.73</td>
</tr>
</tbody>
</table>


11. Table 1 shows allocation to the higher education subsector from FY2009 to FY2013. Table 2 shows the share of the budget for education that is allocated to universities and also the share of the national budget for universities in the same period.

12. In FY2011, the national budget increased by 19.59% compared with the FY2010 national budget, whereas the Ministry of Education (MOE) budget increased only by 13.42%, and the UGC budget increased by 34.46%. In FY2012 and FY2013, the national budget increased, by 23.77% and 17.21% respectively, from the previous year. However, the MOE budget declined to 4.66% in FY2012 and 8.54% in FY2013. The UGC budget sharply declined from 34.46% to 10.38% in FY2012 and then further declined to only 7.07% in FY2013.

13. Table 3 shows the decline in the share allocated to universities in the national budget. It is noted that the share of university budget in the national budget declined from 1.14% in FY2011 to 0.93% in FY2013. While the national budget sharply increased, the MOE budget has remained almost constant with only an insignificant increase, and the budget for the UGC has been stagnant or slightly declining.

Table 3: National Budget, Ministry of Education Budget and Allocation for University Grants Commission

<table>
<thead>
<tr>
<th>Year</th>
<th>National Budget</th>
<th>MOE Budget</th>
<th>Allo. For UGC</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-2009</td>
<td>94140</td>
<td>739.22</td>
<td>0.95%</td>
</tr>
<tr>
<td>2009-2010</td>
<td>110523</td>
<td>8971.68</td>
<td>1.01%</td>
</tr>
<tr>
<td>2010-2011</td>
<td>132170</td>
<td>10175.65</td>
<td>1.14%</td>
</tr>
<tr>
<td>2011-2012</td>
<td>163589</td>
<td>10649.99</td>
<td>1.01%</td>
</tr>
<tr>
<td>2012-2013</td>
<td>191738</td>
<td>11558.97</td>
<td>0.93%</td>
</tr>
</tbody>
</table>

MOE = Ministry of Education, UGC = University Grants Commission.
Data sources: University Grants Commission Annual Reports and Ministry of Finance Budget Reports.
C. The Need for Developing the Higher Education Subsector in Bangladesh

14. With a substantial increase in the number of students and applicants in HEIs due to the high increase in the number of secondary and higher secondary graduates, public funding can no longer keep up with the challenging task of expanding to meet these ever-growing needs. This warrants active private sector participation in the development of higher education to meet the challenges of a knowledge economy. Industries that are likely to benefit from a good human resources base are the primary targets for undertaking initiatives to foster collaboration with the government and the HEIs.

1. Increasing Number of Students and Applicants in Higher Education Institutions

15. The number of applicants in higher secondary institutions in Bangladesh is rapidly increasing. A higher secondary certificate (HSC) is prerequisite for admission in the tertiary level of education. Table 4 shows the number of students who passed the secondary school certificate (SSC) and HSC examinations from 2007 to 2012. Table 5 shows the number of students enrolled in the first year of the public and private universities. On average, 23% of HSC graduates are enrolled in public and private universities. Others are enrolled in affiliated colleges of National University, Bangladesh Open University, and vocational and technical courses; and some are dropouts.

<table>
<thead>
<tr>
<th>Year</th>
<th>Exam</th>
<th>Humanities Appeared</th>
<th>Humanities Passed</th>
<th>Science Appeared</th>
<th>Science Passed</th>
<th>Business Studies Appeared</th>
<th>Business Studies Passed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>SSC</td>
<td>358,178</td>
<td>167,451</td>
<td>179,805</td>
<td>137,086</td>
<td>254,182</td>
<td>149,918</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>211,298</td>
<td>118,631</td>
<td>87,207</td>
<td>59,450</td>
<td>133,330</td>
<td>99,442</td>
</tr>
<tr>
<td>2008</td>
<td>SSC</td>
<td>327,288</td>
<td>195,886</td>
<td>176,880</td>
<td>149,139</td>
<td>239,441</td>
<td>181,551</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>2,2,092</td>
<td>167,168</td>
<td>95,805</td>
<td>72,873</td>
<td>158,242</td>
<td>131,323</td>
</tr>
<tr>
<td>2009</td>
<td>SSC</td>
<td>344,596</td>
<td>189,865</td>
<td>182,744</td>
<td>153,042</td>
<td>270,551</td>
<td>194,971</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>237,725</td>
<td>152,771</td>
<td>94,523</td>
<td>66,851</td>
<td>156,854</td>
<td>124,899</td>
</tr>
<tr>
<td>2010</td>
<td>SSC</td>
<td>393,097</td>
<td>276,825</td>
<td>203,992</td>
<td>182,969</td>
<td>315,488</td>
<td>253,766</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>286,563</td>
<td>187,407</td>
<td>106,527</td>
<td>77,804</td>
<td>187,533</td>
<td>151,776</td>
</tr>
<tr>
<td>2011</td>
<td>SSC</td>
<td>418,770</td>
<td>310,691</td>
<td>216,164</td>
<td>196,191</td>
<td>351,716</td>
<td>303,784</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>302,574</td>
<td>196,261</td>
<td>114,621</td>
<td>85,936</td>
<td>205,082</td>
<td>168,057</td>
</tr>
<tr>
<td>2012</td>
<td>SSC</td>
<td>450,393</td>
<td>365,976</td>
<td>231,201</td>
<td>218,444</td>
<td>366,550</td>
<td>320,336</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>368,546</td>
<td>260,726</td>
<td>129,645</td>
<td>101,615</td>
<td>244,257</td>
<td>205,599</td>
</tr>
<tr>
<td>2013</td>
<td>SSC</td>
<td>392,109</td>
<td>335,475</td>
<td>226,337</td>
<td>214,904</td>
<td>368,971</td>
<td>335,512</td>
</tr>
<tr>
<td></td>
<td>HSC</td>
<td>397,443</td>
<td>263,504</td>
<td>138,537</td>
<td>100,477</td>
<td>278,489</td>
<td>215,316</td>
</tr>
</tbody>
</table>


16. A significant increase in students passing the secondary school certificate is noted over the years while the rate for the HSC has remained about the same or slightly increased.
Table 5: Number of Students Enrolled in First Year of Public and Private Universities

<table>
<thead>
<tr>
<th>Year</th>
<th>No. Students Passed HSC Exam</th>
<th>No. Students Enrolled in Public Universities</th>
<th>No. Students Enrolled in Private Universities</th>
<th>Total No. Students enrolled in Public and Private Universities</th>
<th>% of HSC Passed Students Enrolled in First Year of University</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>344,485</td>
<td>29,565</td>
<td>52,161</td>
<td>81,726</td>
<td>23.7</td>
</tr>
<tr>
<td>2010</td>
<td>416,987</td>
<td>31,598</td>
<td>62,826</td>
<td>94,424 (+15%)</td>
<td>22.6</td>
</tr>
<tr>
<td>2011</td>
<td>450,254</td>
<td>40,807</td>
<td>69,535</td>
<td>11,0342 (+17%)</td>
<td>24.5</td>
</tr>
<tr>
<td>2012</td>
<td>567,940</td>
<td>35,783</td>
<td>81,430</td>
<td>11,7213 (+6%)</td>
<td>20.6</td>
</tr>
</tbody>
</table>

HSC = Higher Secondary Certificate.
Note: Figures exclude National University and Bangladesh Open University enrollment.

2. Number of Students Studying in Different Years in Public and Private Universities

17. The increasing tendency of students in public and private universities and their growth rate is shown in figures 1 and 2 below. From Figure 1, one can observe a steady growth of students in public universities and a comparatively rapid growth of students in private universities due to the expansion of the private universities.

Figure 1: Number of Students in Public and Private Universities

Note: Figures exclude National University and Bangladesh Open University.
Figure 2: Growth Rate of Public and Private University Students


3. Number of Public University Teachers by Qualification

18. Table 6 shows the number of teachers in public universities by qualification. Of 10,568 teachers working in 32 public universities, 3,703 have a PhD and 1,237 teachers have other higher qualifications. The vast majority, 5,628 teachers (53%), are without any higher education degree. In private universities, there are 12,113 teachers as of 2012, but data on qualifications are not available.

Table 6: Number of Public University Teachers by Qualification

<table>
<thead>
<tr>
<th>Name of Degree</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PhD</td>
<td>2,701</td>
<td>2,796</td>
<td>3,021</td>
<td>3,056</td>
<td>3,570</td>
<td>3,703</td>
</tr>
<tr>
<td>Other higher education</td>
<td>1,930</td>
<td>2,051</td>
<td>1,813</td>
<td>1,217</td>
<td>1,032</td>
<td>1,237</td>
</tr>
<tr>
<td>No higher education</td>
<td>3,437</td>
<td>3,473</td>
<td>4,407</td>
<td>5,272</td>
<td>5,179</td>
<td>5,628</td>
</tr>
</tbody>
</table>


4. Classification of University Students by Choice of Field of Study in 2012

19. Business administration is the most popular subject at private universities. In 2012, the total number of students studying business administration was 159,136 (31%). Science, health care, engineering, and agriculture are the next most-chosen subjects of both private and public university students, followed by arts and social sciences, which include languages, economics, history, political science, geography, etc. Science is the most favored subject in public universities. From this analysis, it is found that students choose those subjects that offer good employment opportunities in the job market.
Table 7: Number of Students by Field of Study (2012)

<table>
<thead>
<tr>
<th>SL</th>
<th>Major Field of Study</th>
<th>No. Students in Public University</th>
<th>No. Students in Private University</th>
<th>Total Students</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arts</td>
<td>37,894</td>
<td>34,882</td>
<td>72,776</td>
<td>14%</td>
</tr>
<tr>
<td>2</td>
<td>Social science</td>
<td>30,479</td>
<td>8,992</td>
<td>39,471</td>
<td>8%</td>
</tr>
<tr>
<td>3</td>
<td>Education</td>
<td>1,807</td>
<td>1,325</td>
<td>3,132</td>
<td>1%</td>
</tr>
<tr>
<td>4</td>
<td>Law</td>
<td>4,031</td>
<td>29,145</td>
<td>33,176</td>
<td>6%</td>
</tr>
<tr>
<td>5</td>
<td>Pharmacy</td>
<td>1,941</td>
<td>8,408</td>
<td>10,349</td>
<td>2%</td>
</tr>
<tr>
<td>6</td>
<td>Agriculture</td>
<td>15,773</td>
<td>398</td>
<td>16,171</td>
<td>3%</td>
</tr>
<tr>
<td>7</td>
<td>Science</td>
<td>42,724</td>
<td>6,330</td>
<td>49,054</td>
<td>10%</td>
</tr>
<tr>
<td>8</td>
<td>Science, health care, engineering, and agriculture</td>
<td>31,234</td>
<td>91,974</td>
<td>123,208</td>
<td>24%</td>
</tr>
<tr>
<td>9</td>
<td>business administration</td>
<td>25,950</td>
<td>133,186</td>
<td>159,136</td>
<td>31%</td>
</tr>
<tr>
<td>10</td>
<td>MPhil, PhD, PGD, diploma, certificate</td>
<td>5,445</td>
<td>0</td>
<td>5,445</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>197,278</td>
<td>314,640</td>
<td>511,918</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: Figures exclude National University and Bangladesh Open University.

5. Expansion of Public and Private Universities, Faculties, and Departments

With the establishment of new public and private universities to meet the growing demands of diversification of higher education, there has been concomitant growth and expansion of the faculties, departments, and institutes for higher education in the country (figures 3, 4, and 5).

Figure 3: Number of Public and Private Universities in Bangladesh, 2012

Note: Figures exclude National University and Bangladesh Open University.
D. Tuition Fees, Scholarships, and Availability of other Facilities for Academic Staff Development and Research Programs

1. Average Tuition Fees Per Student

21. Table 8 shows that the average tuition fee per student in private universities is nearly five times higher than in public universities. Public universities are mostly run by government funds and the students need to bear a nominal tuition fee. On the other hand, almost all expenses in private universities are borne by student tuition fees and so the cost to those students is much higher. This calculation is made based on total average income divided by total average students of university.

<table>
<thead>
<tr>
<th>University Type</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>8,300</td>
<td>9,300</td>
<td>9,100</td>
<td>10,700</td>
</tr>
<tr>
<td>Private</td>
<td>55,300</td>
<td>57,000</td>
<td>58,400</td>
<td>55,300</td>
</tr>
</tbody>
</table>

Source: University Grants Commission.
2. **Average Income and Expenditure by University Type**

22. Table 9 shows average income by type of university. Income is derived from student tuition fees and other sources. In public universities, income is low because student tuition is low and expenditure is high. The gap is filled by government funding. In private universities, both income and expenditure are high, and the income mostly comes from student tuition fees.

Table 9: Average Income and Expenditure by University Type (BDT)

<table>
<thead>
<tr>
<th>University Type</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Income</td>
<td>32,810,000</td>
<td>38,528,000</td>
<td>44,494,000</td>
<td>51,869,000</td>
<td>52,928,000</td>
<td>65,775,000</td>
</tr>
<tr>
<td>Public Expenditure</td>
<td>204,700,000</td>
<td>223,000,000</td>
<td>238,800,000</td>
<td>268,900,000</td>
<td>344,500,000</td>
<td>372,600,000</td>
</tr>
<tr>
<td>Private Income</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>239,528,000</td>
<td>305,895,000</td>
<td>306,510,000</td>
</tr>
<tr>
<td>Private Expenditure</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>272,600,000</td>
<td>320,200,000</td>
<td>284,100,000</td>
</tr>
</tbody>
</table>


3. **Number of Students Eligible for Stipend in Private Universities**

23. Table 10 shows the number of private university students eligible for stipend (free tuition, scholarships, and waivers). Although data is not available for public universities, they do provide stipend for different categories of students, such as hill track students, handicapped students, and dependents of freedom fighters.

Table 10: Number of Students Eligible for Stipend in Private Universities

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuition</td>
<td>10,952</td>
<td>21,478</td>
</tr>
<tr>
<td>Scholarship</td>
<td>10,885</td>
<td>11,794</td>
</tr>
<tr>
<td>Waiver</td>
<td>56,553</td>
<td>58,957</td>
</tr>
</tbody>
</table>

Source: University Grants Commission.

4. **University Academic Staff Development Programs**

24. Public and private universities and affiliated colleges under the universities have different types of staff development programs, outlined below:

(i) UGC PhD fellowship program;
(ii) UGC MPhil fellowship program;
(iii) national and international seminars, workshops, and symposium programs;
(iv) UGC talent scholarship program;
(v) Janata Bank talent scholarship program;
(vi) scholarship program for gifted blind students;
(vii) UGC professorship program;
(viii) creation of Rokeya Chair Program.
(i) Commonwealth Academic Staff Fellowship;
(ii) Commonwealth Academic Staff Scholarship;
(iii) Commonwealth Staff Split-Sight Scholarship;
(iv) New Zealand Commonwealth Scholarship;
(v) Award of Gold Medal by Prime Ministry;
(vi) SAARC Chair, Fellowship, and Scholarship Program;
(vii) UGC Award; and
(viii) Post-Doctoral Fellowship Program.
5. **Research Activities of Public and Private Universities**

25. Table 11 shows the number of research projects undertaken by public universities and Table 12 shows the expenditure of the research activities of public and private universities. The research expenditures of public universities are very low. Some private universities have quite high research expenditures but some have none at all. The calculation is made based on total research expenditure divided by total number of universities.

### Table 11: Number of Research Activities for Public Universities (2010–2012)

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of research projects undertaken</td>
<td>718</td>
<td>992</td>
<td>771</td>
</tr>
<tr>
<td>No. of completed projects</td>
<td>67</td>
<td>88</td>
<td>103</td>
</tr>
<tr>
<td>No. of running research projects</td>
<td>370</td>
<td>364</td>
<td>352</td>
</tr>
<tr>
<td>No. of research projects in progress</td>
<td>185</td>
<td>258</td>
<td>134</td>
</tr>
<tr>
<td>No. of left-out projects (not completed)</td>
<td>96</td>
<td>272</td>
<td>182</td>
</tr>
</tbody>
</table>


### Table 12: Expenditure on Research by Public and Private Universities (BDT)

<table>
<thead>
<tr>
<th>Year</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public universities</td>
<td>7,230,000</td>
<td>7,120,000</td>
<td>8,060,000</td>
</tr>
<tr>
<td>Private universities</td>
<td>191,196,000</td>
<td>259,153,000</td>
<td>410,384,000</td>
</tr>
<tr>
<td>Average research expenditure per public university</td>
<td>200,000</td>
<td>200,000</td>
<td>300,000</td>
</tr>
<tr>
<td>Average research expenditure per private university</td>
<td>5,031,000</td>
<td>6,321,000</td>
<td>7,100,000</td>
</tr>
</tbody>
</table>


26. The numbers clearly show that the private universities are heavily overrepresented in the field of research in Bangladesh.

E. **Future demand of Private and Public Universities**

1. **Expected Number of First-Year Student Admissions in 2015 and 2020**

27. Based on the last 4-year actual admission of students in the first year of university courses, 23% of students who passed HSC examination were admitted to public and private university first-year courses each year. Considering this rate of admission, and the increase in students who pass the HSC exam, it is expected that in 2015, 190,800 students will be enrolled in the first year of university and 362,000 students will be enrolled in 2020.

### Table 13: Expected Enrollment in First-Year University Courses (2015 and 2020)

<table>
<thead>
<tr>
<th>Number of First-Year Student Admissions in 2012</th>
<th>Expected First-Year Admissions in 2015</th>
<th>Expected First-Year Admissions in 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>117,213</td>
<td>190,800</td>
<td>362,000</td>
</tr>
</tbody>
</table>

Note: Figures include public and private universities.
Source: University Grants Commission.

2. **Total Number of Expected Students in 2015 and 2020**

28. Based on the average growth rate over the last 6 years, the projected numbers of university students in 2015 and 2020 are presented in Table 14.
### Table 14: Expected Number of Students in 2015 and 2020

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public universities</td>
<td>197,278</td>
<td>223,800</td>
<td>276,200</td>
</tr>
<tr>
<td>Private universities</td>
<td>314,640</td>
<td>500,600</td>
<td>1,085,800</td>
</tr>
</tbody>
</table>

Source: University Grants Commission.

### 3. Facility Expansion Required

29. Based on the current university–student ratio and the growth rate of expected students, the facility expansion outlined in Table 15 will be required in 2015 and 2020.

### Table 15: University Expansion Requirements to Accommodate Expected Number of Students (2015 and 2020)

<table>
<thead>
<tr>
<th></th>
<th>2012</th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of public universities</td>
<td>32</td>
<td>36</td>
<td>45</td>
</tr>
<tr>
<td>Number of private universities</td>
<td>60</td>
<td>95</td>
<td>207</td>
</tr>
<tr>
<td>Number of teachers required in public universities</td>
<td>10,568</td>
<td>11,543</td>
<td>14,246</td>
</tr>
<tr>
<td>Number of teachers required in private universities</td>
<td>12,113</td>
<td>21,264</td>
<td>46,116</td>
</tr>
</tbody>
</table>

Source: University Grants Commission.

30. As the numbers show, there is huge demand for higher education in Bangladesh, and to meet this growing demand, rapid growth and expansion of the number of public and private universities and their faculties, departments, and institutes will be needed. In conclusion, the numbers document a significantly increasing demand for seats in HEIs and a corresponding urgent need for facilities upgrades and expansion of the teachers’ resource base.

### F. The Role of Higher Education as a Driver for Development

31. In the global knowledge economy, higher education has a crucial role in nurturing human capital. It promotes economic growth, leads social transformation, and finds solutions to national development challenges. Major challenges for higher education development are: (i) limited access despite the recent expansion, (ii) regional imbalance, (iii) questionable quality and relevance to the job market and national development priorities, and (iv) inadequate financing and governance arrangements.

32. The strengthening of higher education is required for enhancing the overall development of Bangladesh. It must focus on providing access to high-quality education services to strategically important target groups, and to ensure inclusiveness, equality, and the nurturing of talent and entrepreneurship. HEIs in the developed and in few developing countries have benefited from, and played a key role in, bringing in the scientific and information and communication technology solutions necessary for development. Unfortunately, these do not seem to be fully-utilized and Bangladesh is reported to be behind, as the framework conditions allowing such breakthroughs in science and technology are not yet in place. Evidence from East Asia confirms that both national and foreign investments are most attracted to a given country when there is a skills base to warrant a return on investments.\(^\text{13}\) In addition, Bangladesh has other challenges and opportunities that remain to be explored. Higher education has been under-resourced, even though skilled

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\(^\text{13}\) ADB Project Data, Sheet 26 Nov 2013.
labor and science and technology are vitally essential for increasing the competitiveness of Bangladesh.

33. Higher education in Bangladesh is now at a crossroad. The unfolding knowledge society is reshaping higher education on a global scale, and HEIs in Bangladesh will remain competitive only to the extent that they embrace the knowledge economy and turn out an increasingly diversified range of skills in response to development needs. The key challenges of the higher education system are training the young generation for the emerging new economy, and improving access and quality of outputs. While the government attached higher priority to primary education, followed by secondary education, with the active support of international development partners, the higher education is left out, resulting in a deterioration of quality of educational services. Also, lack of international development partner support for the promotion of higher education led to no further improvement of the quality of outputs. The consequence is that Bangladesh still has no noteworthy research and development (R&D) centers, while North America has 861, Asia 655, and Europe 1,576.14

34. One of the primary roles of the university is creation of new knowledge through conducting research, in addition to the function of teaching. R&D, without much attention to downstream activities that involve commercialization, limits the relevance of university research. Technology is the progeny of the research endeavors carried out at the universities. As such, the universities in the industrially-advanced countries have become the prime source of ideas that are increasingly being translated into viable market commodities in the shape of products, processes, and procedures.

35. Given that Bangladesh is preparing to become a middle-income country, the demand for higher education graduates will increase substantially. By the same token, there is also a need to establish university–industry linkages (UILs) through partnerships to foster business opportunities (incubation).

II. CHALLENGES FOR HIGHER EDUCATION IN BANGLADESH

A. Overview of the Higher Education Subsector

36. The higher education system in Bangladesh has expanded significantly during the decades since 1990. The government committed and planned to establish at least one public university in the headquarters of each greater district. The government also allows establishment of private universities anywhere in the country in response to the increasing demands for access to higher education.

37. Bangladesh has 34 public universities, 60 private universities, over 2,000 degree colleges and institutes affiliated to National University, 2 international universities, and many other technical and professional HEIs. In accordance with the increased numbers of private universities, enrollment in the private universities has grown significantly. Despite the recent expansion, higher education enrollment rates remain very low as a whole. About 7% of the eligible age cohort continues to higher education, far lower than India’s 12%. There is also a tremendous regional imbalance. Most of the 90 universities are concentrated in a few locations: 53 (59%) are in the capital Dhaka and 10 (11%) are in Chittagong, with the remaining 27 (30%) spread over 15 of the 64 districts. The rapid quantitative expansion reportedly has come with deteriorating quality and lack of relevance of higher education as the result, which is causing a growing concern. Young public and private universities, regional universities, and particularly the vast number of colleges under National University

14 Footnote 13.
are reported to lack (i) qualified and motivated teaching staff; (ii) access to the latest books, journals, and research articles; (iii) access to internet and online communications; and (iv) research and training facilities. Following the Higher Education Strategic Plan, 2006–2026, universities have established internal quality assurance cells, but no improvements have been seen. While the strategic plan also proposed the establishment of an independent accreditation council covering both public and private universities, it has not been implemented.

38. There is an increasing demand for admission to HEIs, particularly in public universities. The public universities cannot cope with such demand, as they cannot expand at the required rate due to financial constraints and lack of faculty, space, laboratories, libraries, and other essential facilities. Private universities are interested, rather too eager, to expand, but generally at the cost of quality. National University colleges provide another option for admission seekers, but most of them are of low quality.

39. The growth of enrollment at the secondary level and the large number of students passing the HSC examinations puts pressure on HEIs for admission. Although Bangladesh has witnessed an increased number of private and public universities in recent years, there are not enough universities and other HEIs to accommodate an ever-growing number of students. In 2013, a total of 579,297 students passed HSC examinations, but the public and private universities together could admit only 250,000 on their own campuses. Many of the remaining students are going to university-affiliated colleges, which offer 3–year degree (pass) courses, 4–year degree (honors) courses, and master’s courses in some selected subjects. These affiliated colleges also face shortages of qualified teaching staff and inadequate library, laboratory, and research facilities.

40. The challenge, therefore, is how to meet the increasing demand with quality and affordability. The Private University Act, 2010 will give scope for the opening of new universities. The act will play a pivotal role in the field of higher education as well as in research activities. It will help to establish transparency, accountability, dynamism, and good governance in the private university system. It is also expected that new public universities could be established to expand the scope of higher education as well as to improve the quality of higher education in the country.

1. Geographic Imbalance of the Location of Universities

41. Universities in Bangladesh show a geographic imbalance in their location pattern, more so for private universities. The 34 campus-based public universities are located in only 16 out of the 64 districts of the country, 16 in the Dhaka metropolitan region alone. Out of the 60 private universities, 48 are located in Dhaka. This means that out of the 94 public and private universities (excluding the international universities), 64 are located in the Dhaka metropolitan area and 11 in the Chittagong metropolitan area, an extremely biased spatial pattern. Khulna and Rajshahi both have only one private university each and Barisal and Rangpur Division are without any private university. The concentration by number of students is even more lopsided (Table 16).

<table>
<thead>
<tr>
<th>Division</th>
<th>Public Universities</th>
<th>Private Universities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhaka</td>
<td>16</td>
<td>48</td>
<td>64</td>
</tr>
<tr>
<td>Chittagong</td>
<td>5</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Rajshahi</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Khulna</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Barisal</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Sylhet</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>
### Geographic Distribution of Public and Private Universities in Bangladesh (2012)

<table>
<thead>
<tr>
<th>Division</th>
<th>Public Universities</th>
<th>Private Universities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rangpur</td>
<td>2</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
<td><strong>60</strong></td>
<td><strong>94</strong></td>
</tr>
</tbody>
</table>

Source: University Grants Commission.

**Figure 6:** Geographic Distribution of Public and Private Universities in Bangladesh (2012)

Source: University Grants Commission.

42. The challenge, therefore, is to create a spatial balance in the future so that aspiring students of all regions have better access to universities. Spatial or geographic distribution of universities needs to be more rationalized. The National University colleges offer better geographic coverage, but the better-quality colleges are located in Dhaka and a few other metropolitan areas.

2. **Challenge of Having a Proper Campus**

43. A university ideally should have a carefully laid out campus for proper physical, social, cultural, and mental development of the students. Most of the public universities have adequate land, but most private universities function within very limited space. It is encouraging that at least some private universities have their own campuses; a few others are in the process of developing theirs. The challenge remains of how to make the majority of private universities move to their own campuses. This is a legal obligation, but proving difficult to enforce.

3. **Challenges in Research**

44. Universities, as defined, not only transfer knowledge, but also create new knowledge. The challenge is in creating an environment for new knowledge generation through research, with adequate funds, facilities, and equipment. The faculty members have to be research-minded. Research needs to address the national agenda.

45. At present, the UGC provides a small amount of research support to more than 771 projects run by teachers in various universities. In 2012, the research grants amounted to

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BDT8,100,000 and private university has BDT410,400,000 from their own resources. There are also UGC MPhil and PhD fellowships. There are other scholarships as well.

B. Current Higher Education Financing

46. Less than 10% of public university resources are self-generated. Public universities spend around 95% for recurrent costs (staff salaries, subsidized dormitories and food, etc.) and less than 5% on research activities.

47. The public universities in Bangladesh are almost fully funded by the state and the annual allocation for revenue meeting recurring expenditure in FY2013 is BDT12,480,000,000. This is far short of meeting the minimum requirement. Unfortunately, there is sometimes misuse even of these insufficient funds. The government is encouraging public universities to generate their own income through enhancement of student fees or other innovative means. The results are not encouraging.

48. The government also provides development funds to the public universities, but the amount is small. For example, the total development budget allocation to all public universities was BDT5,261,300,000 in FY2012. Allocation to higher education in the national budget is inadequate and still very low. This subsector constitutes only about 0.17% of GDP, while for education as a whole the share is a meager 2.03% (compared with 4.00% in India). The government has no obligation to finance private universities. These are initially run with funds from sponsors and later are fully dependent on student fees and other charges. Many sponsors are reluctant to invest in developing their campuses and improving laboratory and library facilities. There is very little money for research, and many universities have minimal or no allocation for research at all.

49. The UGC and MOE are currently implementing a project called the Higher Education Quality Enhancement Project (BDT6,810,000,000) for funding research and faculty development of universities with the support of the World Bank. The UGC has also mobilized research support through the British Council under the International Strategic Partnership in Research and Education Project.

50. For a developing country like Bangladesh, one of the most difficult tasks is arranging sufficient financing for promoting expansion and quality improvement of higher education. In some countries, the government finances the major share of higher education costs. In Bangladesh, public expenditure on higher education has been declining in recent years. The allocation for this sector in the national budget is so insignificant as to be nearly useless for enhancing quality. While the number of incoming students and demand for higher education continue to increase, public expenditure on higher education continues to decline.

C. The Challenge of Higher Education Governance

51. Vice chancellors are appointed by the President or Prime Minister, and have strong political affiliations, and thus governance arrangements in public universities and academic decision making are affected and influenced to certain extent.

52. It is also difficult to ensure accountability of teachers. The National University system of affiliation limits the flexibility and innovation of individual colleges, which leads to lack of competition and eventually undermines quality of education. Private universities' curricula are reviewed mostly by public universities for the UGC's approval, and therefore there is not much flexibility for innovation and introduction of latest knowledge and practice. Public universities have autonomy, but due to their dependence on UGC funding and limited financing, they have little flexibility in spending.
53. In the pre-independence era and several years after Bangladesh’s independence, the public universities played a key role in the higher education system. They were authorized to regulate the systems of their own campuses and of their affiliates. In 1992, the National University was established as an affiliating university, and is now the affiliating university of almost all government and private colleges. The National University is responsible for developing curricula, conducting examinations, awarding certificates and diplomas, and regulating all academic affairs of its affiliated institutions.

54. The greatest challenge to higher education in Bangladesh today lies in establishing good governance. The core characteristics of good governance are authority, autonomy, transparency, accountability, participation, responsiveness, coordination, efficiency, capacity, equity, and sustainability. Achieving satisfactory performance in all these indicators is difficult, but efforts must be made to such an end.

55. It can be said that most universities in both the public and private systems are suffering from poor governance, although the governance problems are quite different. Many public universities recently have been accused of serious administrative and financial irregularities, while many private universities have been charged with lack of transparency and noncompliance of conditions set for them by the UGC and MOE.

56. The public university system requires reforms, but such reforms are not proposed from within. If such reforms were suggested from outside the universities—such as from the UGC or MOE—these would face immediate opposition or even rejection from the universities. The malfunctioning of universities, therefore, continues. It is the same with private universities. Proposals for change are not taken easily or in good spirit.

D. The Challenge of Language of Instruction

57. The government emphasizes the use of Bangla as the language of instruction at all levels of education. This makes it legally imperative for HEIs to use Bangla. However, although the public universities are not required to follow Bangla, they cannot officially instruct students to follow English. Since the government does not strictly call for compliance of this policy, public universities informally encourage English to be used as the parallel medium of instruction. The private universities have clearly opted for English, but their students generally have low proficiency in the language when they enter and achieve only marginal improvement by the time they graduate.

58. Technical universities use English as the medium of instruction. Departments in science faculties of public universities encourage students to use English. Many social sciences and humanities departments allow use of both Bangla and English by students. Affiliated colleges under National University mostly use Bangla. The quality of English is extremely low in most of the Bangla secondary schools and intermediate colleges. Most universities as a result get only students with poor English skills.

59. Meanwhile, Bangla is being gradually pushed to a marginal position, especially in the private university system. A balance is needed between the pressure of globalization and national needs. This is a big challenge. If universities are to adopt English as their medium of instruction, the first changes need to be made at the school level. The task is a formidable one. A related challenge is to improve the proficiency of English during the university program.
E. The Challenge of Getting Adequate Faculty

60. Finding an adequate number of qualified teachers is a serious challenge for the universities. This applies to public and private universities, but the concerns are more serious for private universities. There is an acute shortage of experienced and qualified faculty in popular disciplines and subjects like business administration, computer science, information and communication technology, pharmacy, law, English, and textile engineering. There is also the challenge of faculty development through adequate opportunity for doctoral research and teacher training. As shown in Table 6, out of 10,568 teachers working in 64 public universities, 3,703 teachers have a PhD; 1,237 have other higher education; and the vast majority of public university teachers (5,628 teachers, or 53% of the total) have no higher education degree. This affects the quality of higher education, which is critical for the knowledge economy.

61. Above all, teachers have to be committed to their job of teaching and research. System of benefits, responsibility, and accountability among teachers have not duly established yet. Moreover, long absences and attrition have created serious problem in public universities.

62. Teacher quality is questionable and there is a lack of continuous training of academic staff; no institution exists in the country for providing training to teachers and administrative staff of HEIs. In addition, the absence of English language skills development programs, for both teachers and students, represents a barrier to development. Although some universities use English, there is no planned system in the country for skills development in spoken and written English.

63. In short, faculty development suffers from the following:

(i) There is a lack of adequate international collaborative research opportunities for faculty members.
(ii) The average quality of PhD programs is low compared with the developed countries due to the universities’ inability to employ high-quality teachers from abroad for providing expertise.
(iii) Institutes attached to various universities in many cases have not proved very productive.
(iv) Campus politics sometimes adversely affects faculty members in performing their mandated academic responsibilities.

F. The Challenge of Attaining Quality

64. Assurance of quality is a critical issue in higher education. In a country of 160 million people and with a history of modern university education for over 9 decades, the country cannot boast of one single “world-class” university, although some could find a place among top universities in Asia. But attaining quality in university education should not be an impossible proposition. Quality in higher education can be viewed both in terms of overall quality of the HEIs, particularly of the universities, and also in terms of individual or specific academic programs or disciplines. The quality assessment of universities normally considers many aspects, such as academics, campus and infrastructure, management and governance, research performance, and publications. Various indicators within each of the above categories are examined in the quality evaluation: for example, under academics, the quality of faculty and curricula would feature prominently. The challenge is in proper evaluation of quality and in the implementation of recommendations from such evaluations. The government is considering setting up an accreditation council to evaluate and ensure the quality of universities.
65. Quality assurance is essential in higher education because of the generally low competence of those having postgraduate degrees as measured by employability. The existing pattern of unemployment and underemployment of university graduates implies that the system is not working efficiently and effectively.

66. Parental emphasis on measuring educational excellence by examination results, an inadequate relationship between research and classroom teaching, an unsuitable educational environment, a lack of educational implements, and an unsatisfactory teacher-student ratio are impediments to acquiring the right type of higher education in this country. The demand for higher education also affects quality. Lack of avenues for studying many diverse subjects and lack of opportunities for studying in various streams put great pressure upon the universities and colleges. Increasing pressure for admission combined with existing inadequacies in facilities, resources, personnel, libraries, laboratories, and accommodations significantly affect the quality of higher education.

1. **Relevance**

67. One common criticism of higher education in Bangladesh is that it is steeped in traditionalism and there is no significant relevance to national needs and problems. The unemployment of large numbers of educated youth implies that higher education institutions have been unable to properly assess and respond to the job market. If graduates are not prepared to meet national development needs, then the resources spent on them is wasted.

2. **Efficiency**

68. The efficiency of higher education is proved by the contribution of its graduates to society. The contribution to efficiency of the education system depends on the outputs of top administrators, scholars, and researchers working in these institutions. To measure efficiency, the output of higher education can be used as a criterion. A large number of failures (25%)\(^\text{16}\) is seen in the degree examinations. In the honors and master’s-level examinations, the percentage of those who pass is much higher than at the degree level. But among the successful candidates in the two examinations, only a few can hope to enter the professions, which require high academic competency and professional skills. Another weakness of the higher education system is that universities and colleges do not have any follow-up of the performance of their graduates. The available data on unemployment of graduates of universities and colleges are scanty and sometimes unreliable. There is also a lack of scientific tools for accurately measuring the efficiency of higher education.

69. Brain drain is another indicator of measuring efficiency of an education system. A large number of qualified undergraduate students are going to study abroad every year for two reasons. First, demand for admission to programs in specialized and job-oriented disciplines far exceeds the number of seats. Second, because of better job opportunities abroad, many bright students believe that getting degrees from good foreign universities will help them land lucrative jobs abroad.

3. **Curriculum Reform**

70. Modernization of curricula and syllabi to reflect new knowledge is one of the essential tasks of any education system. In the past, curricula reforms were initiated in Bangladesh but these were not radical. There are bottlenecks to reforming curricula. The composition of

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G. The Challenge of Value Education

71. Education should have systematic initiatives to include basic facts about life, including morality and social behavior. The core idea behind value education is to cultivate essential values in the students in order to sustain and continue to develop a culture that can manage complexities. It begins at home and it is continued in schools.

72. Value education is important because it helps improve an individual's value system, which guides attitude and decision making. Thus, value education is considered essential in shaping students' lives and giving them an opportunity to perform on the global stage. The need for value education among parents, children, and teachers is constantly increasing as violence, behavioral disorders, and lack of unity in society is continuously witnessed. The UGC and MOE are currently engaged in a process of developing value education curricula.

III. STRATEGIES FOR OVERCOMING CHALLENGES FOR HIGHER EDUCATION IN BANGLADESH

A. Public–Private Partnerships in Response to Challenges in Higher Education in Bangladesh

73. Acknowledging the fact that neither public nor private actors in the higher education sector have been able to meet the demand and quality expectations on their own, public–private partnership (PPP) solutions for development of the higher education sector in Bangladesh have advantages worth exploring. The current challenges and higher education's role in transforming Bangladesh into a competitive knowledge economy in the global market call for new and innovative solutions to secure quality service delivery, outreach, and access to public service and higher education. Hence, this report focuses on how best to use public funds invested in partnerships with private partners, rather than on whether private partners shall be involved (focus on how and not if).

74. PPPs can ease some of the government's financial constraints on infrastructure and educational service delivery, subject to a number of assumptions that are discussed below. Apart from being a mechanism to expand the higher education infrastructure, PPPs can also address some aspects of the challenges related to low and imbalanced enrollment rates, educational quality, quality assurance, service delivery, and enhancement of teachers' qualifications.

75. The responsibility, however, for the delivery of quality higher education services will remain with the government. It is as well the responsibility of the government to design PPP procurement procedures catering for political decisions and priorities—for instance, to subsidize tuition fees for preferred subjects to balance the current imbalance in enrollment toward business and humanities disciplines to support science subjects.

76. Policy and Strategy for Public–Private Partnership, 2010 has a provision for viability gap financing. Viability gap financing is meant for projects where financial viability is not ensured but their economic and social viability is high. It could be in the form of a capital grant, annuity payment, or a combination. Financing in the form of a capital grant shall be disbursed only after the private sector company has subscribed and expended the equity contribution required for the project. Viability gap financing is to be managed by the finance
division and is disbursed to the PPP project company upon request by the line ministry or implementing agency, as per the terms of the concession contract.

B. University–Industry linkages: A Supportive Measure to Overcome Challenges

77.UILs can enhance the development of higher education in Bangladesh. Win-win solutions can be created for universities and industries by allowing them to collaborate in R&D.

78. Industry can leverage universities' R&D capacity based on basic and applied science disciplines. Universities can have students trained to gain valuable practical experience. Universities may have technology, but not the capacity and financing for product development, marketing, and distribution on a commercial scale. In incubator set-ups, the university graduates can collaborate with industry on such tasks as commercializing their concepts and technology products.

79. The UIL concept is still nascent in Bangladesh, especially in higher education. There are a few good cases of linking university functions in human resource development and research and development with industry. Most of them are ad hoc and are based on individual relationships. Public universities are not actively seeking opportunities to work with industry for cost recovery or research purposes. Industry reliance on imported technology rather than home-grown technology is also pointed out as an obstacle. Therefore, tremendous opportunities exist for cross-sector collaboration in the form of PPPs and UILs, starting by establishing a shared understanding of PPPs and UILs in higher education within the context of the knowledge economy and Bangladesh's development priorities.

C. Public–Private Partnerships

80. This chapter is based on international experience with PPPs and the current PPP experience of Bangladesh. It describes what a PPP is and how they could be relevant for higher education.

1. Definition of a Public–Private Partnership

81. A PPP is generally defined as a public party (ministry, government agency, etc.) entering into a long-term performance-based contract with a private party concerning the delivery of a specific agreed-upon service. A PPP is characterized as being a way of organizing a project, e.g., allocating risk in an optimal way between the public and private partners to gain efficiency and/or quality improvement.

82. Definitions of PPPs vary, but they generally share several features. It is a formal relationship between partners, most often in the form of contracts, with defined outcomes for a specific period of time. It does not matter whether the non-state partner is profit-oriented, philanthropic, faith-based, or community-based, but all PPPs contain an element of risk sharing between the public and non-state sectors. The public sector partner defines the scope of business, targets, and outputs, and the non-state partner delivers them, based on built-in incentives. PPPs can be distinguished from privatization, with the latter involving a permanent transfer of control from the public sector to the private sector, while the main aim of PPPs is to promote improvements in the financing and provision of services without altering the balance of control of one over the other.

2. Public Procurement Models

17 Based on a workshop with higher education sector stakeholders in 2013.
83. The models are listed in order according to increased commitment for the private partner.

a. Traditional Public Procurement and Outsourcing

84. In a traditional tender, the public body cooperates with the private institution via competitive tendering of public operational and service tasks.

85. One way of applying this model to higher education could be that private institutions receive direct government appropriation for parts of its activities. This happens in some systems where the government, instead of building more institutions, spends unit-cost money to “buy” places in private institutions. This is particularly viable in programs related to public service, such as the training of teachers or nurses, when there is a severe shortage of personnel in those areas.

Box 1: Private Universities in Singapore

Singapore has a long tradition of public universities but the government started to pay private universities for educating students. The private SIM University (UniSIM) was founded in 2005 and was the first private university in Singapore. The Government of Singapore quickly recognized the advantages of private investors taking over former public tasks and introduced publicly funded full-time degree programs in UniSIM. (UNESCO 2009) (United Nations Educational, Scientific and Cultural Organization (UNESCO). 2009. Private Higher Education. Paris.)

b. Service Partnership

86. A service partnership is collaboration between a public institution and a private operating contractor, which allows for more flexibility and cooperation than traditional outsourcing or service supply. Service partnerships can be usefully applied to operation and maintenance tasks with a certain task volume. The overall goal is to involve the supplier in a commitment to efficiently perform one or more public tasks. Often it can be advantageous to combine a number of similar tasks or tasks that mutually influence each other in the same partnership, for example, all the operational and maintenance tasks for a school. It creates a certain task volume, which is necessary, in order for the private party to be able to prioritize, integrate, and streamline the task.

87. The parties agree on a common set of objectives in a service partnership agreement. One of the purposes of the partnership agreement is to establish a framework for cooperation and describe the tools the parties have agreed to use for the cooperation. As such, the partnership agreement is an agreement on cooperation, while the contract is an agreement on the actual implementation of the task. It is important to find a way to collaborate where the parties can jointly develop the most optimal solution for the project.

Box 2: University Financing in Hong Kong, China

In Hong Kong, China, the University Grants Committee (UGC) has begun to cut back its subsidies to all UGC-funded universities, and more self-financing programs and courses are being launched. For instance, the UGC has decided to gradually withdraw its funding to nearly all master's programs; postgraduate students have to pay full fees now. In order to "balance the books," universities have to develop hat can appeal to the public; market forces are certainly shaping the design of university curricula and academic plans. Local programs are offering distance courses, conversion courses co-run with overseas universities, and continuing education programs (e.g., master of business administration and law) on a self-financing basis. In addition, continuing education is considered one of the major sources of additional income. All universities in Hong Kong, China have set up their community colleges or continuing education units to offer programs to cater to market needs. (K. Mok. 2005. Fostering entrepreneurship: Changing role of government and higher education governance in Hong Kong. Research Policy. 36 (4).)
88. Service partnerships in higher education are usually initiatives that open public universities to income-generating activities. Public institutions receive income from their commercial activities: fee-charging courses, commissioned training, entrepreneurial spin-offs, patents, and so forth. As a further step, public institutions also establish fully self-financing teaching programs, often in the form of an extension school for adult learning or specific programs of market value, such as an MBA.¹⁸

c. Public–Private Company: The Establishment of a Joint Company with a Private Supplier

89. The core of this cooperation is that a public body joins forces with one or more private enterprises to establish a joint venture on specific projects or programs within a public institution. The government and private actors can also establish and run an institution. For the most part, institutions in this mode remain public but benefit from the financial power of the private partner.¹⁹

Box 3: Telecom Centres of Excellence in India
Telecom Centres of Excellence (TCOEs) are a joint venture between the Government of India, major telecom operators, and the premier technical and management institutes of India. Eight TCOEs have been established in the Indian Institutes of Technology (IITs). The TCOE initiative intends to harness the potential of students and the industry to match global standards and competitiveness. The Government of India is supporting the initiative by cash contributions and by making available the infrastructure and faculty support at IITs, IISc, and IIM, which are largely government-funded autonomous education institutes. The telecom operators provide 90% of the funding to TCOEs. As co-chairs of the TCOE core group (which serves as the board and steering committee), they are in a position to steer TCOE’s projects and work toward areas of immediate concern and long-term needs (http://www.tcoe.in/).

d. Public–Private Partnership

90. PPPs are a special kind of cooperation that integrates finance, design, and construction of a facility or building and its future operation and maintenance. The overall goal is to achieve better overall economy and more optimal risk sharing. PPP differs from the aggregated tender by also letting the private party be responsible for financing the project and owning the asset. A PPP is characterized by the fact that financial risk is shared between the public and private partners. The goal is for the party that can most efficiently and cost-effectively accomplish and manage a given task to be responsible for it.

91. A PPP gives the private sector partner primary responsibility in all phases, beginning with design. In this case, the public partner just specifies the need—for instance, to develop a school with a conducive learning environment for x students. The private partners will come up with a design that provides the conducive learning environment and a school that can be efficiently and effectively operated and maintained.

92. Private institutions can receive project-based government subsidies through competitive grants for research, consultancy, training programs, or projects for specific purposes. Private institutions can also receive indirect government subsidies through

Box 4: Competitive Grants in the Republic of Korea and the United States
In the United States many private universities obtain substantial government money through competitive grants. Harvard University, for example, as a leading private institution, receives 30% of its income from tuition, 10% from private donations, and 60% from projects. Most of the projects are government projects allocated on a competitive basis. The university levies as much as 65% of each project as university income.

The Government of the Republic of Korea supports its private higher education institutions. Although most institutions are private, a distinctive characteristic of Korean higher education is the strong control the government traditionally has assumed. The government exerts influence through such indirect measures as competition grants and performance funding. Private research universities have significantly benefited from these government-initiated funding programs. (World Bank. 2011. The Road to Academic Excellence: The Making of World-Class Research Universities. Washington, DC.)

Box 5: Raising Quality in Private Higher Education Institutions in Indonesia
In order to raise the quality of private higher education institutions (HEIs), the Government of Indonesia introduced certain forms of subsidies and incentives for private HEIs. The incentives are mainly in the form of staff either seconded from public sector HEIs or subsidized external qualified teachers. All in all, the government pays some 10% of private HEI academics. The objective of the scheme is to encourage private institutions to hire teachers with higher academic qualifications. (United Nations Educational, Scientific and Cultural Organization. 2009. Private Higher Education. Paris; Welch. 2007. Blurred Vision? Public and Private Higher Education in Indonesia. Higher Education. 54 (5). pp. 665–687)

e. Partnerships with Civil Society

93. In higher education, public institutions often profit from private donations. In the strictest sense of the term, donations are money given away with no financial benefit to the donor. Hence, theoretically, donors should have minimal or no effect on the operation of public institutions.

94. In the United States, for example, the tax and legal systems guarantee that donors receive handsome tax benefits in return for non-interference in the institution's affairs. However, in many other systems where the legal bindings are loose, the donor may receive privileges, economic or otherwise (e.g., student admissions, priority partnership, free advertisements) as a reward.

D. Success of Public–Private Partnerships in Asia

95. Many Asian countries have faced fundamental changes in their higher education systems during recent years. Established HEIs could not cope with the sharply rising demand for access to postsecondary education. Table 17 shows higher education students by world regions and clearly demonstrates the enormous rise of Asia. Facing these challenges, PPPs have been gaining a momentum in many Asian countries, not to speak of other parts of the world. Whatever scant study reports are available, it is apparent that PPPs

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can play a vital role in boosting national development by supplementing government efforts. Recent evidence indicates a boom in PPPs in the past decade in the Asia and the Pacific but it needs more effective public sector oversight agencies, and in some instances more political will, to advance the process even further.

### Table 17: Higher Education Students by World Regions (1991–2007)

<table>
<thead>
<tr>
<th>Region</th>
<th>1991 Millions</th>
<th>2007 Millions</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Asia and the Pacific</td>
<td>14</td>
<td>47</td>
</tr>
<tr>
<td>South and West Asia</td>
<td>6</td>
<td>20</td>
</tr>
<tr>
<td>Central Asia</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Arab States</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Western Europe and North America</td>
<td>26</td>
<td>34</td>
</tr>
<tr>
<td>Central and Eastern Europe</td>
<td>10</td>
<td>21</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>World</td>
<td>68</td>
<td>153</td>
</tr>
</tbody>
</table>

Source: Marginson, 2011.

96. As indicated in Table 17, in some countries, private investment has poured into higher education, and the number of private institutions occupies more than three-quarters of the overall higher education provision. In Cambodia, for example, of 73 HEIs, 44 are private; in FY2002–2003 alone, about 16 private institutions were established. Admittedly, most of the private HEIs offer market-oriented programs. The Government of the Lao People’s Democratic Republic (Lao PDR) also stated that it would encourage further expansion of private HEIs with the objective of relieving some of its burden of financing the higher education system. The Philippine higher education system has also been characterized by rapid expansion in the last 10 years. The number of HEIs increased from 1,380 in 2001 to 1,785 in 2010, growing by an annual average of 45 new ones or 3%. Only 11.8% of all HEIs in the Philippines are public and 88.2% are private. Indonesia also shares the same tradition of relying on private provision to respond to the increasing demand for higher education. Of 3,016 Indonesian HEIs, 2,933 are private (Asian Development Bank [ADB] 2012c administration and governance of private higher education, p. 2).

97. Explanations for this increase in private higher education include claims that it can provide greater efficiency, more accountability, and opportunities for students to have more access and choice. Supporters assert that private higher education can be more responsive to market demands and, thus, can lower graduate unemployment rates; and that it increases competition and, thus, quality. An additional assertion is that private HEIs reduce the financial burden on governments for providing higher education and are in general a solution to increased demand.  

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26 ADB. 2011b. *Improving Institutional Quality (p.6-8)*. Manila.

![Graph]

HEI = higher education institution, Lao PDR = Lao People’s Democratic Republic.

Sources: For numbers of institutions of all economies except Indonesia, Malaysia, Myanmar, Philippines, and Viet Nam, see PROHE (2010); for Indonesia, see Hiep (2009), but data on total higher education enrollment include only private and public higher education enrollments, excluding data from other types of HEIs under other ministries; for Malaysia, see Bais (2005); for Myanmar, see Aye (2009); for Philippines on both institutional and enrollment numbers, see OMHE (2010); for Viet Nam’s number of institutions, see Huong (2006). The years reported here are the most recent available from the source.


98. A robust institutional and regulatory framework is often the crucial precondition for successful PPP development. India, Japan, and Korea are the top-performing countries in Asia and the Pacific in terms of PPP, reflecting their robust institutional and regulatory frameworks. India exhibits particularly strong political will and rising capacity for PPPs, although problems with implementation remain a challenge. The private sector criticizes India’s regulatory uncertainty. Despite governmental debates, the higher education law still does not allow private HEIs to make profit. In contrast, the People’s Republic of China (PRC) law allows private HEIs to receive “reasonable rewards” and supports private education providers with tax benefits. Nevertheless, a clear distinction between for-profit and not-for-profit institutions is missing. While not-for-profit private institutions should have access to public fiscal support, more liberal policies are required to give for-profit institutions more room to develop. Despite this relatively underdeveloped institutional and regulatory environment, promotion of PPPs in PRC was hugely successful, with 614 PPPs performed between 2000 and 2009. The strong willingness and capacity of the PRC government to carry out PPP projects, a friendly investment environment, and the sheer scale of the Chinese market for infrastructure drove activity. This success is also reflected in the percentage of research funding that Chinese universities receive from the industry.

Table 18: Shares of Research Funding Received by Academics in Selected Asian Economies, Academic Year 2008

<table>
<thead>
<tr>
<th>Economy</th>
<th>Own Institution</th>
<th>Public Research Funding Agencies</th>
<th>Government Entities</th>
<th>Business Firms or Industry</th>
<th>Private Not-for-Profit Foundations</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRC</td>
<td>43.55</td>
<td>10.63</td>
<td>25.47</td>
<td>13.10</td>
<td></td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>44.59</td>
<td>20.36</td>
<td>16.45</td>
<td>2.07</td>
<td>2.91</td>
</tr>
<tr>
<td>Japan</td>
<td>50.77</td>
<td>22.11</td>
<td>15.10</td>
<td>8.04</td>
<td>2.98</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>32.16</td>
<td>30.95</td>
<td>24.25</td>
<td>7.81</td>
<td>2.82</td>
</tr>
<tr>
<td>Malaysia</td>
<td>51.71</td>
<td>16.91</td>
<td>17.93</td>
<td>3.61</td>
<td>3.49</td>
</tr>
</tbody>
</table>

PRC = People’s Republic of China.

Note:
The results presented in the table are from the 2008 Changing Academic Profession Survey, an international comparative study examining the nature and extent of the changes experienced by the academic profession.


99. At the same time, the rapid expansion of higher education and the trend toward privatization have raised concerns about quality. Asia has the majority of private HEIs in the world—but the private sector is lowest in prestige among academic institutions in the world. In most cases, the private sector provides access at the expense of quality. However, countries are experiencing heightened competition within the higher education sector. This competition can impact institutional quality and international efficiency in several ways. Within a country, institutions compete for funding, qualified students, and physical resources. In the international context, countries race to create world-class universities to engage in cutting-edge research that contributes to economic growth, innovation, and international leadership. With the support of the private sector, the governments of the PRC and India have succeeded in establishing education institutions that can compete internationally.

Box 6: Pohang University of Science and Technology

Private universities and colleges make up a very large portion of the Republic of Korea’s education institutions. The government funds higher education institutions through indirect measures such as competition grants and performance funding. As a result of this approach, high-performing universities have received more subsidies. One of these universities is Pohang University of Science and Technology (POSTECH). It is unique due to its position as a private university that was able to achieve, over just the past 2 decades, world-class status. The Pohang Iron and Steel Company (POSCO) established the university in 1986 for the purpose of managing the research institute, as well as for providing advanced education for budding engineers and laying the groundwork for future technology development. To continuously produce high-impact research outcomes, POSTECH has been reinforcing strategic resource allocation, collaborative research, and international research partnerships. POSTECH has expanded research collaboration with companies other than POSCO and, at the same time, has actively participated in government-funded projects. Nevertheless, POSCO’s research fund still accounts for the largest portion of research revenue, about 50%. (World Bank. 2011. The Road to Academic Excellence: The Making of World-Class Research Universities. Washington, DC.)

22 ADB. 2012. Improving Transitions from School to University to Workplace. Manila.
23 See example of Postech, Republic of Korea.
24 ADB. 2012. Improving Transitions from School to University to Workplace. Manila.
Box 7: Shanghai Jiao Tong University

Shanghai Jiao Tong University (SJTU) is one of the leading research universities in the PRC. It is dedicated to achieving a quality standard that transcends national borders and to building itself into a world-class research and higher education institution. The emphasis of SJTU’s development has changed from quantity-oriented to quality-oriented, and from building infrastructure to enhancement of teaching, learning, and research. Research income is an important funding source for SJTU. Research is largely supported by government agencies and industry. Since the reform of cost sharing in the higher education sector, tuition fees have been introduced. They now account for a significant proportion of total university revenue. Donations and other sources of private support to SJTU have also become significant sources of university revenue. Many of SJTU’s new buildings have been financed with donations from alumni or social celebrities. Furthermore, the Beijing Zizhu Pharmaceutical Co., a private business enterprise, has offered the university about 1 billion yuan in financial support. This amount is the largest single donation to a university by a private business enterprise in the PRC.

The total budget of SJTU has more than quadrupled in the past 10 years. For a typical year, SJTU’s revenue comprises 20% regular funding from the government; 20% special funding from government initiatives; 30% research income; 20% tuition fees; and 10% other resources, including donations and income from university-run enterprises (World Bank. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington, DC.)

Box 8: Indian Institutes of Technology

In the realm of higher education in India, the Indian Institutes of Technology (IITs) have been islands of excellence. Degrees awarded by IITs are recognized and respected all over the world. As “institutions of national importance,” IITs function autonomously. They have been, by and large, free from political or governmental interference from either the center or the states in which they are located. Although autonomous, IITs are primarily publicly funded institutions. Compared with the universities, IITs receive disproportionately high grants: While total government funding to most other engineering colleges is around 100–200 million rupees (RS) per year, the amount varies between Rs900 and 1,300 million per year for each IIT center. Furthermore, unlike publicly funded universities, IITs generate additional resources. Thus, for every rupee that the government spends, IITs generate an additional Rs0.24 through sponsored research and consultancy and make a net addition of Rs0.16 to the endowment. Recovery of funds from student fees is only Rs0.06. With the large public grants that they receive, IITs subsidize approximately 80% of undergraduate student fees. They also provide scholarships to all master of technology students and PhD scholars to encourage students to higher studies.

The Industrial Research and Consultancy Centre at IIT Bombay coordinates sponsored research and consultancy projects, providing necessary liaison with industry and other sponsors of research. Under the auspices of this center, the academic departments, centers, and schools have set up experimental facilities. (World Bank. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. Washington, DC.)

E. Public–Private Partnership Situation in Bangladesh

1. Level of Understanding of Public–Private Partnership among Bangladesh Higher Education Stakeholders

100. In Bangladesh, PPPs have been used since the 1990s as a means to finance large infrastructure projects. Since the adoption of the PPP policy in 1996, about 50 initiatives in telecommunication, power plants, land ports, and other physical infrastructure projects have been successfully implemented to date. Surprisingly, one of the very first PPP projects was in the information and communication technology sector—the Railway Reservation and Ticketing System, which was initiated in FY1993–1994. First developed by Technohaven
and later managed by Daffodil, the project was a major success, increasing revenues by more than 130% in 8 years, cutting staff by half, and increasing productivity by 200% (Bangladesh Enterprise Institute, July 2010). After the success of this project, telecom operators developed utility bill payment systems in 2008. The most significant recent success has been the Custom House Automation Project in Chittagong in 2008. The Custom House Automation Project in Dhaka has also been undertaken by DCCI and DataSoft. It promises to double revenue in 2 years; reduce cost of doing business by at least 70%; save customs processing time by 80%; enable precise monitoring of international and domestic prices; and ensure accountability, transparency, auditability, etc. In addition to support from the private sector, public funds like the Equity and Entrepreneurship Fund operated by Bangladesh Bank are available to nurture and increase investments in two promising sectors: software and food processing and agro-based industry.

101. Five factors have been identified as hurdles to the PPP model in the implementation of projects. These factors include, according to a former power secretary, (i) absence of meaningful competition, (ii) poor specification by the government due to corruption or lack of capacity, and (iii) the incompetent bidders who delay project implementation (Daily Star, 2012). The same source reported that although a power project was successful (Meghnghat 450 Megawatt Power Project), a land port project was unsuccessful (Satmasjid Land Port), a capital-city flyover project (Jatrabari–Gulistan Flyover Project) was distressed, and the Patenga Container Terminal project was cancelled.

102. According to ASA University Review, the following PPP projects have been implemented in Bangladesh in education:

(i) setting up quality secondary schools;
(ii) setting up dormitories, health centers, auditoriums, and gymnasiums in public universities;
(iii) development, expansion, or improvement of present degree colleges; and
(iv) setting up research institutions or research foundations dedicated to the institution.25

103. Analyzing the main obstacles for PPPs in Bangladesh on this basis, the legal framework conditions prevailing when these projects were initiated are assigned the main reason for the encountered challenges: The Bangladesh Private Sector Infrastructure Guidelines, issued by the Cabinet Division in 2004, currently is the guideline for implementing PPP projects in Bangladesh. But this is not under any passed law of the parliament. It creates doubts, lacks clarity, and brings inconsistency with the Public Procurement Act (PPA), 2003. Later, PPA, 2006 was enacted by the national parliament, which has extended the government’s jurisdiction to formulate a separate PPP guideline. The Rule-129 of Public Procurement Rules, 2008 incorporates various PPP models. At present, Section 66 of PPA, 2006 and Rule-129 of Public Procurement Rules, 2008 act as the basis for PPP project implementation and contract execution. However, the entire procedure should be taken under the unique purview of a comprehensive and independent framework to ensure effective administration and continuous monitoring. The PPP Act approved in November 2013 is expected to eliminate the mentioned challenges and also demonstrates the clear political will to enhance PPP for inclusive development, which is the main precondition for successful PPPs.

104. In the case of higher education, the concept of PPP according to the above definitions is still nascent in Bangladesh. The stakeholders perceive the few good cases of UILs in human resource development and research and development26 as PPP’s, which

26 Most of them are rather ad-hoc and based on individual relationship.
illustrates the broad interpretation of the term. Public universities are not actively seeking opportunities to work with industry for cost recovery or research purposes. Industry reliance on imported technology rather than home-grown technology is also an obstacle. Concerted efforts are required to establish shared understanding of PPP in higher education within the context of knowledge economy and Bangladesh's development priorities.

105. Some PPP projects have been in operation for the development of infrastructure in the areas of roads and transport, power and energy, port development, flyovers, and others. Evidence exists regarding operation and implementation of PPP projects in primary and secondary education. However, in the higher education subsector, PPP is rare in the true sense of the term. Some private sector participation in higher education is evident mainly in the forms of philanthropy, donations (e.g., for construction of physical facilities like computer laboratories, classrooms, and common facilities), and informal logistic support. Sometimes, collaboration takes place in short-term consultancies and research. Nevertheless, these initiatives are all done on an ad hoc basis. In the real sense of the term, there is no PPP initiative in the higher education sector.

2. Policy and Legal Frameworks

106. The Government of Bangladesh has already prepared various documents and manuals for all the steps involved in a successful PPP arrangement. PPP approvals are overseen by several agencies including the Prime Minister's office. Moreover, PPP financial support vehicles comprise the PPP Office (Prime Minister's office), Ministry of Finance, and Bangladesh Infrastructure Financing Fund. These three bodies provide financial support services.

107. The Policy and Strategy, 2010 specifies the priority sectors for PPP as follows:

(i) exploration, production, transmission, and distribution of oil, gas, coal, and other mineral resources;
(ii) oil refinery and production of liquefied petroleum gas;
(iii) production of fertilizer;
(iv) power generation, transmission, distribution, and services;
(v) airports, terminals and related aviation facilities;
(vi) water supply and distribution, sewerage and drainage, effluent treatment plants;
(vii) land reclamation, dredging of rivers, canals, wetlands, lakes and other related facilities;
(viii) highways and expressways including mass transit, bridges, tunnels, flyovers, interchanges, city roads, bus terminals, commercial car parking, etc.;
(ix) port development (sea, river, and land) including inland container terminals and inland container depots;
(x) deep sea port development;
(xi) telecommunication systems, networks, and services including information and communication technology;
(xii) environmental, industrial, and solid waste management projects: railway systems, rolling stock, equipment, and facilities;
(xiii) tourism industry;
(xiv) economic zone, industrial estates and parks, and city and property development, including services to support commercial and non-commercial activities;
(xv) social infrastructure (e.g., health, education, human resource development, research and development, cultural facilities); and
(xvi) electronic service delivery to citizens.

108. A special unit under the Prime Minister’s office called the PPP Office, has been established to deal with all sorts of PPP projects from the government side. The major activities of the PPP Office include (i) initiating, developing, and formulating PPP projects; (ii) actively promoting PPPs; (iii) maintaining a panel of experts for PPP projects; (iv) conducting pre-feasibility and feasibility studies and preparing relevant bidding documents; (v) securing annual technical assistance financing for conducting pre-feasibility and feasibility studies and preparation of relevant bidding documents; (vi) seeking appraisal for viability gap financing for PPP projects; (vii) proposing approval of various laws, rules, regulations, model documents, guidelines, and procedures for general use and use for by specific types of PPP projects; (viii) supporting line ministries and implementing agencies in tendering and selection of investors; (ix) undertaking awareness creation and capacity building activities on PPP affairs in line ministries and implementing agencies; and (x) monitoring PPP projects, including the linked components.

109. Discussion with the officials of the PPP Office reveals that several PPP projects are now in progress in such sectors as roads, shipping, railways, and civil aviation. No project has yet been undertaken in primary, secondary, or higher education.

110. The Government of Bangladesh has recently circulated the PPP Law, 2013 (draft) for public opinion, which awaits approval of the Parliament. The draft law for the first time provides for legal requirements regarding PPPs that include, among other things, the following:

- (i) technical assistance financing, viability gap financing, infrastructure financing, and linked component financing;
- (ii) selection of private partners;
- (iii) purpose and methods of prequalification;
- (iv) methods for inviting proposals for PPP projects;
- (v) evaluation criteria for technical proposals;
- (vi) formation of proposal evaluation committee;
- (vii) negotiation rules;
- (viii) contents and implementation of PPP contents; and
- (ix) dispute settlement procedures.

3. Public–Private Partnerships in Higher Education in Bangladesh

111. PPPs are an important tool for education development, quality improvement, and efficiency (value for money).

112. Further, a PPP can be a promotional tool for reform, and can help reform a sector like higher education, but should not be used for reform itself. In a PPP contract and tender, the private party will ask the public party how things are done and how they could be done in a more innovative and efficient way. Because a PPP is structured as an organizational model, it requires the public party to define the way things are done today, rethink, and be open toward how it can be done differently in the future. It also requires the public sector to define its needs and expected service standards for the private party.

113. Typical expectations of a successful PPP include

- (i) better quality of higher education (to compete better in a world driven by knowledge);
- (ii) government certification of higher education;
- (iii) more efficient use of resources;
(iv) development of competencies;
(v) utilization of knowledge of both public and private sectors to develop better education;
(vi) budget security;
(vii) realization of more university projects;
(viii) faster realization of projects;
(ix) develop science to secure the future knowledge pool; and
(x) closer cooperation with the private sector.

114. One of the reasons for letting a private party deliver a public service in a PPP project is that the private party might be more capable than the public party of delivering the service at a specific time, at a fixed price, and an agreed-upon service level (quality). These are some of the findings in Asian and international PPP projects. If it is possible to identify services that are handled better by the private sector than the public sector, it will most likely be advantageous to build the services into a PPP contract.

IV. FINANCING: CURRENT SPENDING AND SOURCES OF FUNDING

A. Financing of Public–Private Partnership Projects

115. The choice of channels or mechanisms of funding can make a great deal of difference in efficiency, effectiveness, and equity. Efficiency varies between channels in terms of leakage or the time it takes for funds to pass; equity in allocation may depend on who manages the flows of funds; and the willingness of enterprises to pay may relate to transparency and the effectiveness of oversight. Which channel is most appropriate depends on where funds originate, how they flow, what they will pay for, and how flows are best managed between source and destination.27

116. In order to attract private investors, the government must coherently and convincingly sell its PPP strategy. Only if private partners can envision the success of the project will they risk investing. Thus, attention should be paid to several preconditions before launching a PPP project.

117. First, it is important to ensure that the PPP project is sustainable and “bankable” to attract private bidders and private financing. The private sector seeks compensation for its services through fees for the delivered services. As part of the fee, they would demand an appropriate return on their capital invested. If private investors and lenders cannot see a sustainable business case with an acceptable return, they will not want to bid for the PPP project.

118. To make a project bankable, it will be crucial for the private party to have a clear and balanced exit scenario. This gives the private party the opportunity to quantify worst-case scenarios and the potential outcome of it. Investors and lenders will be especially focused on the quantification of the exit scenarios, as it describes their economic outcome in case of agreed exit or default.

119. Second, before tendering a PPP project, it will be relevant to test the expected structure of the project with the private bidders. This will draw attention to the project and thereby increase the number of potential bidders. It is also be a possible way of finding out whether the planned services, risk sharing, financing structure, business case, etc. will be

acceptable to the private bidders. If unacceptable components are found, they can be adjusted (including politically) before putting the project to tender instead of having to cancel the project or tender at a later stage where all participants—both public and private—have used a lot more resources.

120. Third, a PPP market should be created that attracts private bidders. The private bidders use resources and incur development costs every time they bid for a PPP project, especially in a new sector such as higher education, whether they win the contract or not. Therefore, private bidders like to be convinced that there is political will to support a PPP in a new country and/or a new sector, such as higher education.

121. A way the government can show this support, and mitigate part of the political risk to the bidders, could be by pointing out a few (3–5 or even more) pilot projects and making a time frame for the expected tender of these projects. This will most likely give the private bidders the needed comfort that there will be a market with a relevant pipeline and let them see a future business possibility.

1. Public and/or Private Funding

122. In a PPP project, the financing will usually be provided as public funding, private funding, or a mix of both. One example of funding is equity provided by private investors or institutional investors. Commercial banks or development banks could provide loans. The public part could contribute to the financing with capital or by injecting assets.

123. As part of the government’s policy for PPP, it is possible for the government to provide "gap funding." Funding like this would cover activities in a PPP project that are not sustainable and/or do not offer an acceptable return to the private party, but still are relevant to include in the PPP project. For higher education, such an example could be the use of resources for hosting professional networks concerning science. This would not be a sustainable activity for the private party, but may hold enough value for the public party to make sure it happens. In such an example, gap funding to support the activity could be injected into the project by the public party.

Box 9: Pakistan—Government Funding Reform in Higher Education
Since 2006, the Higher Education Commission of Pakistan has introduced several regulatory and funding reforms to increase the quality of private provision and promote growth in private higher education. The government provided basic infrastructure support such as land for the establishment of new private institutions and assisted existing private higher education institutions with quality improvement. “Gap funding” grants pay for digital library access to selected journals and international bandwidth for internet access, while matching grants are provided for private higher education institutions hiring foreign faculty or financial assistance for private institutional researchers. (EWPS. 2008. The Evolving Regulatory Context for Private Education in Emerging Economies. Education Working Paper Series.)

Box 10: Bangladesh—Asian University for Women
The Asian University for Women (AUW) was designed to educate women throughout Asian to assume roles as development leaders. AUW currently has 535 students from 12 countries. Established by the AUW Support Foundation, the university owes its existence to both private and public donations. The Government of Bangladesh allocated land and provided infrastructure to the campus while guaranteeing academic freedom and institutional autonomy. The organization received 89% of its contributions from two foundations and one government organization during the year 2012. (United Nations Educational, Scientific and Cultural Organization. 2009. Private Higher Education. Paris; Asian University for Women [http://asian-university.org/index.htm])
2. Development Partners and Development Banks

124. International organizations can play several roles in promoting PPPs. A key role is providing early-stage equity and loan capital to promote investments in private education. HEIs find it difficult to access investment capital with a sufficiently long time horizon. Private equity companies are generally not interested because they expect short-term returns on their investments. International lenders can raise the profile of private education as a legitimate sector for investment, and they can also work with banks to mitigate some investment risks in the sector. International organizations can also build the capacity of both banks and the education sector and help countries to create enabling regulatory frameworks for private education (World Bank 2009).  

Box 11: The Maldives—Government Support for the Private Sector
The government encourages the private sector to expand its services in higher education with financial assistance from international development organizations. The government's support for the establishment of new private higher education institutions includes land grants, subsidies for building and facility construction, and other financial aid. (ADB. 2011. Higher Education across Asia: An Overview of Issues and Strategies. Manila.)

Box 12: Central America—University–Private Sector Program for Sustainable Development
To bolster cooperation between Central American universities and the private sector, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) has been implementing the Programa Universidad-Empresa para el Desarrollo Sostenible (PUEDES) (University–Private Sector Program for Sustainable Development) since 2007 as part of the Higher Education and Science for Sustainable Development Project. In joint pilot measures, universities and businesses are stepping up cooperation in order to promote sustainable development in their countries.

In the PUEDES pilot project, designed to promote an entrepreneurial spirit in Nicaragua, four Nicaraguan universities and the Nicaraguan Chamber of Commerce collaborate to hone the entrepreneurial skills of the students. At the start of 2009, 150 students were already participating and 30 business plans were prepared. The best of these have won awards. Three companies have already been successfully launched.

Another PUEDES pilot project, Sustainable Biodiesel Production from Jatropha curcas, has an entirely different thematic emphasis. It is being conducted in cooperation with the University of San Carlos, Guatemala, and small and medium-sized local enterprises. The university is investigating how organic farming can be strengthened by cultivating Jatropha curcas, a renewable resource used to produce energy in the form of biodiesel.

Another PUEDES pilot project, Knowledge Transfer for Small-Scale Agroindustry Enterprises in Catacamas, aims to develop the capacity of small and medium-sized enterprises in rural areas of Honduras. In this project, the National Agricultural University (Universidad Nacional de Agricultura) cooperates closely with the companies. The project holds training sessions on management and entrepreneurial practices for small businesses, and trains students at the university so that they are then able to offer training themselves. (GTZ. 2009. On the Road to Central-American Universities Relevance. Puedes.)

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3. Availability Payment or Payment per Student

125. The simplest PPP solution is to let the private party have the responsibility of making a university building available to public students. The private party will then receive an annual payment from the government for those services based upon achieving agreed-upon performance indicators. The service and performance will usually be reported by the private party and monitored by the public party.

126. Another form of payment could be per student. Private parties in international PPP projects consider this risky because the public party usually controls how many students enter higher education. Moreover, the public party might place a publicly-operated university in close proximity to a private university, in which case the students will most likely choose the “free” public university. These are some of the reasons why private parties usually reject this model.

127. Another idea could be to link the private party’s payment to tax income related to education. Private parties usually do not like this model because the payments would be linked to a risk controlled by the public party—collecting and fixing the size of the taxes.

4. Student Fees

128. Transferring some education costs to the students is a popular solution to meet the huge demands for higher education in Asia that cannot be financed by the public sector alone. For example, the PRC spends 0.8% of its GDP on higher education and India 0.6%. These figures are below those for other emerging economies and are well under the 1% or more spent by developed countries. In both countries, increasing tuition costs in both public and private sector institutions has increasingly shifted the burden of funding higher education to students and their families.

129. In addition to increasing tuition fees, the incorporation of “private students” into public universities is a model that is often used in countries in which public access is thwarted by supplies far inferior to demand for desired public universities. Public universities may enforce admissions quotas for “public” students with no or low tuition fees but then have another quota for fee-paying students, sometimes in separate programs oriented to fields of high demand.

130. One of the greatest challenges that come with rising out-of-pocket financing is providing equity to population groups underrepresented in the student population. The

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access route of accommodating private-paying students in public universities is difficult, from an equity viewpoint, insofar as the most privileged students, often with private secondary school backgrounds, tend to be the ones to access the free public part. Nevertheless, out-of-pocket financing does not automatically increase inequality. While India is still at the “elite” stage of access, with a 12% higher education gross enrollment ratio in 2006, up from 6% in 1991, PRC had already reached a 22% participation level in 2006 against 3% in 1991. Despite the increasing costs being passed to students, the country is approaching mass access.32

131. Recent research conducted by the World Bank (2012) points to two interrelated elements of successful pro-equity financing for higher education: variable fees for students and income-contingent loans. Where these instruments have been implemented well, higher education systems have increased access for the poor and disadvantaged while recovering costs. In most variable fee schemes, the government places a ceiling on the maximum and has most students make at least some contribution toward their education, though exempting qualified poor students based on need and equity helps ensure that they are not excluded or sent to low-cost and possibly low-quality institutions. Otherwise, requiring students to pay at least some of the cost generally improves their motivation and performance. Additionally, more governments recognize that income-contingent loans are better for access. Conventional mortgage-type bank loans usually are available only to students of threshold economic means, whereas government income-contingent loans are available to most students. Repayment is contingent on the future income of the borrower: people with low earnings make low repayments, and people with low lifetime earnings do not repay the loan principal in full. Such a loan protects a student from excessive risk and can promote efficiency (by the protection from risk) and access (fees financed by the loans free up resources for access).

Box 14: Cost-Sharing System in the People’s Republic of China
The cost-sharing system led higher education in the People's Republic of China into a new era of massification. Before 1999, the gross enrollment ratio in higher education maintained a stable growth rate of lower than 1%. In 2002, the gross enrollment ratio in higher education exceeded 15%. The PRC made a historic breakthrough from elite higher education to mass higher education. The proportion of the government’s education budget allocated to higher education showed little change between 1998 and 2004. However, the proportion of tuition fees to total higher education revenue gradually increased. In 1995, tuition fees accounted for 13.6% of revenue, later increasing to 15.7% as the cost-sharing system was put into practice in 1997. The year 1999 witnessed the first great expansion of higher education, pushing the level to 17.2%. In the years that followed, the proportion of tuition fees rose annually, maintaining its annual rate of increase at around 3%, finally breaking through the 30% mark in 2004.

Currently, the higher education tuition fee should not exceed 25% of the average annual cost of the student’s education. This means that the denominator should only relate to the cost of teaching students and should not include faculty wages building infrastructure, and other costs. Nonetheless, in the current higher education accounting system, it is difficult or even impossible to calculate the denominator exactly. (L. Wang. 2011. Exploring the potential rationale for the privatization of higher education in China. Asia Pacific Journal of Education. 31 (4).)

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Box 15: Student Loans Scheme in the People’s Republic of China

In 1999, the People’s Republic of China (PRC) piloted the Government Subsidized Student Loans Scheme (GSSLS) in select regions to help cover tuition costs and daily expenses of higher education for students from poor households. The scheme was not successful due to institutional quotas and discrimination against students who were more prone to defaulting, which in most cases were the poorer students. Learning from that failure, in 2006 the Government of the PRC initiated a public–private partnership with Sinosafe Insurance Co.—Government Subsidized Student Loans Credit Insurance (GSSLCI)—which has helped hundreds of thousands of youth to afford higher education opportunities since its inauguration. GSSLCI is a form of credit insurance scheme based on the borrower’s performance risk. Put simply, government authorized financial institutions (banks) can extend loans, insured by Sinosafe, to students for education assistance. Should the student fail to repay the loan, Sinosafe will then repay the financial institution and assume the responsibility of debt recovery. Introducing GSSLCI has removed the student default risk from the lending banks, making it more financially feasible to offer student loans and to expand the size of their loans. GSSLCI does not increase the financial burden of the borrower or the bank but is covered by a risk compensation fund provided by the government and higher education institutions. As a private enterprise, Sinosafe has been using market-oriented methods to facilitate GSSLS development to ensure that it has a great potential for sustained future development. (United Nations Development Programme. 2012. Public–Private Partnership: Equalizing Higher Education Opportunities Through Credit Insurance for Youth from Poor Households in China. New York.)

5. Enterprise Research Collaboration

132. Enterprise research collaboration is a possibility for public HEIs to gain additional income. Private partners can financially support research projects, build research centers, or pay for specific consultancy services. However, especially in in lower- and middle-income countries, universities currently contribute only to a limited extent to technology adaptation and upgrading in companies. A study by the World Bank (2012) demonstrates the disconnect between public and private research. Table 20 shows a snapshot of university–industry links in East Asia and other countries, including Bangladesh, and demonstrates clearly that many lower- and middle-income countries are behind.

Table 19: World Bank 2012: University–Industry Links
133. The World Bank study identifies three main groups of reasons for disconnect: capacity, information, and incentives. Capacity relates to the capacity of universities to undertake meaningful research and the capacity of firms not only to identify but also to use the knowledge available at universities. The second category, information failures, can be multiple and are related to firms' lack of knowledge of existing technologies generally and university offerings particularly. Third, without adequate incentives, universities and faculty may not be interested or even able to relate to enterprises. Similarly, on the private side, lack of incentives to innovate will also lead to a lack of links.

134. This disconnect must be solved with efficient public policies. Examples of such policies could be for performance-based funding (addressing capacity and incentive constraints) or the right mix of institutional autonomy and accountability (addressing information and incentive gaps). The best practice example from the US shows that government policies that create incentives are essential for encouraging university–industry partnerships.

Box 16: University–Industry Collaboration in the United States

University–industry research collaboration, especially partnerships between the agriculture and the manufacturing sectors and universities, has a long history in the United States (US). Early research collaboration often grew out of the local orientation of a university's educational mission of providing graduates with the skills needed by local economies. The development of electrical engineering, chemical engineering, and aeronautical engineering in the late 19th and early 20th century was centered on universities. A number of policy measures designed to increase incentives for research and development (R&D) and to increase cooperation both within industry and between industry and universities include (i) R&D tax credit with a specific provision for basic research conducted in industry (currently 20% of the payments made to a university or research organization by a firm, which substantially reduces R&D costs); (ii) relaxation of the antitrust rules for R&D joint ventures (1984), and the Bayh-Dole Act (1980), which allowed universities to retain the intellectual property rights on research results obtained using federal funds; and (iii) emergence of revolutionary advances in university-based life sciences research.

The major motivations for the industry participants in university–industry linkages (UILs) are (i) access to new research, (ii) development of new products, (iii) maintaining a relationship with the university, (iv) obtaining new patents, and (v) solving technical problems (Mian. 1996. The university business incubator: A strategy for developing new research/technology-based firms. The Journal of High Technology Management Research. 7. pp. 191–208.).

One notable reason for collaborating with a university is the perception that collaborating (as evidenced by joint publishing) with “star” university scientists is very important for firm performance in the biotechnology area. The reasons for participation by universities include acquiring practical knowledge useful for teaching, student internships and job placement, and obtaining patentable inventions and business opportunities. Also, university administrators increasingly pressure faculty to engage in applied commercial research.

The traditional modes of UILs are (i) start-up companies based on university research, (ii) university-industry-government research centers, (iii) faculty consulting, and (iv) licensing of university-generated inventions. Currently, the UIL models take a variety of institutional forms, ranging all the way from casual funding of individual researchers to large consortia of many firms supporting a permanent research facility.

Examples include the following:

- In 2009, in the midst of a serious recession, 596 start-up companies were formed from university research—81% in the home state of the university.
- Academic technology transfer contributed as much as $187 billion to US gross domestic product between 1996 and 2007.
- During the same 9-year period, at least 279,000 well-paying jobs were created in the United States because of commercialized university inventions.
- Approximately 76% of U.S. biotech companies have licensed technologies from the universities.

The importance of university research in the United States system of technological innovation has been much admired, and it is often cited as a model that other countries may emulate, particularly developing countries. (www.wipo.int/academy/en/meetings/iped_sym_05/papers/pdf/reichman_paper.pdf).
V. PRIVATE FINANCING IS AN INTEGRAL PART OF THE PUBLIC-PRIVATE PARTNERSHIP CONCEPT

135. A standard PPP concept includes private financing of the up-front infrastructure investments. This is not for the purpose of raising capital in the financial market, but in order to build in a motivational factor; it gives the sponsor the option of not paying the service fees should the quality requirements not be met by the PPP supplier. This is measured over the whole lifetime of the PPP project. Accordingly, if this tool shall work in praxis, the sponsor will only pay in instalments over the whole project lifetime. Therefore the PPP supplier needs to finance the investment by himself, i.e., by raising the necessary equity and loan capital from the market.

136. If the government provides such financing wholly or in part, then the disciplining tools in the PPP will lose their effect, as the PPP supplier may—should it run into serious problems during the project lifetime—simply abandon the project, leaving the party providing the financing with the bill.

A. A Primary Part of the Financing Will Be Equity

137. It is up to the PPP supplier to bring in the necessary amount of equity. Partners may in principle be anyone having an interest in the PPP market in Bangladesh. The Government of Bangladesh should not take up any part of the equity proportion, as it will lead to an internal conflict of interest and undermine the disciplining effects of the PPP.

138. It is assumed that it will be possible to obtain equity partners from Bangladesh, as a number of PPP projects already have been installed, and as it will probably be seen as a good investment risk by Bangladesh investors.

139. ADB also has pointed to the fact that “The government should take measures to deepen debt markets and encourage insurance and provident funds to invest in infrastructure projects” and “Robust equity financing models need to be created.” As long as the equity markets do not function optimally, it may still be possible to attract equity partners, but the cost of the capital will be higher than it could have been.

140. However, it is also a relevant observation that creating a well-functioning PPP equity market in Bangladesh is a function of starting the action, without expecting the market to function perfectly from day one. So facilitating a better-functioning equity market for attracting equity to PPP projects may be an advantage of starting university PPPs. Investors could probably expect that the risks of these projects are comparatively controllable and that the government has a keen interest in standing by during the whole project lifetime.

B. Normally Loan Financing Is Obtained at Fixed Terms over the Project Lifetime

141. The sponsor will normally favor having a PPP contract with as many cost elements as possible being fixed over the whole project lifetime. Fixed terms make the procurement easier and more transparent, most of the costs are known and can be kept under control, and PPP suppliers are encouraged to hedge as many risks as possible.

142. It is also a logical way to contract, given that the whole infrastructure is normally supposed to be built in from the very beginning of the project period. Otherwise, the sponsor would have the implicit risk that the PPP supplier may—at a given later date—for commercial reasons be unable to provide such additional structures.

143. Rating of debts is an important tool to get sufficiently attractive financing. Rating is a necessity in the financial market, and rating of PPP debts should be encouraged. However, the rating is a function of making the PPP project as transparent as possible. Failing to address risks will mean that the rating will be affected negatively, which in turn will increase the margin costs. As the sponsor is eventually covering all costs, it is obviously in the interest of the sponsor that the PPP contract distributes all risks in a relevant manner. Of such risks, the financial risks are among the most important to control, so letting the PPP supplier take risks on the financing should not be an option, and the supplier must make sure that all financial risks are under control.

144. In PPPs, the project lifetime is often set to be 30 years. It could be shorter, but should also not exceed a reasonable estimate for the functional lifetime of the investment. A period of 30 years implies that there is a long period of time to write off the investment and that the infrastructure is indeed as durable as what was intended. After the 30-year period, the infrastructure is handed over to the sponsor at scrap value, or at a value that is low compared with the original investment.

145. In order to allow for such a structure, the PPP supplier will need to ensure that it can actually finance the infrastructure over the whole lifetime. So, aside from the equity proportion that will have to stay within the PPP company, the loan financing should be obtained as a committed loan repayable gradually over the whole project lifetime. Similarly, it will be in the interest of both the PPP sponsor and the PPP supplier to seek a fixed rate of interest and margin for such financing.

146. It will be logical to seek such financing by means of a bond issue with 0% coupon. Such bonds have previously been issued in Bangladesh for government projects, but with limited success, and in reality the bonds are comparatively illiquid. It must be assumed that it will still today not be possible to fund university PPP projects by bond issuance.

C. Bank Loans on Fixed Terms

147. The alternative to taking up bond financing will be to seek long-term bank loans. Such facilities may, however be very difficult to get the banks to accept. The pricing mechanism of bank loans will be so that the risk margin will go up exponentially over the lifetime of the loan. At the same time, it can be expected that the basic interest rate will go up progressively.

148. At this point in time, the financial market in Bangladesh is not very liquid and well-functioning, and future interest rates are not found in the market. One month rate of interbank rates are currently as follows:

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149. Compared with the effective interest rates published by Bangladesh Bank, it seems to be a reasonable estimation that a normal margin will be approximately 10% per year for 1-month loans. This is a high margin by international standards and high margins are certainly a problem, particularly for long-term borrowing. At an effective rate of interest of 17%, the debt will be doubled in less than 5 years.

150. “Regulatory uncertainties coupled with politically motivated contract awards have put infrastructure projects in the high-risk category in Bangladesh.” Therefore, it is likely that margins for such PPP projects will be on the high end. If there is a need for a 30-year committed loan at a fixed rate of interest and margin, the request is likely to be considered unrealistic.

151. Financing with much shorter tenure (e.g., 10 years) could be considered, and then let the financing thereafter be rolled over on new terms. However, it is not necessarily attractive to obtain the financing on such terms, and the refinancing risk will have to be taken over by the government, as the risk is obviously not under the control of the PPP supplier.

152. Accordingly, normal calculations over the optimal capital structure do not give any meaning, as the parameters are obviously affected by actions of a purely political nature and cannot be projected by information available in the financial market. Therefore, some way other than long-term fixed borrowing in the private financial market is needed.

153. The first priority shall be to seek as much financing as possible from multilateral banks like ADB or other banks in the World Bank Group. Also, banks outside the World Bank Group may be approached, like Nordic Investment Bank and other development banks.

154. For that part which cannot be financed by loan capital from multilateral banks, short-term financing must be sought from Bangladesh-based banks. This will eventually affect the payment model, as the interest and margin payments will be a variable cost that will have to be picked up by the sponsor.

155. Further, if the lending from multilateral banks comes only in foreign currency, then the currency exchange risk will also have to be picked up by the government.

156. These two financial risks—the interest rate and the currency exchange risk—are significant and volatile. The burden must be borne by the party that is best qualified to affect and/or to bear them. The PPP supplier has neither the means nor the opportunity to bear these financial risks. Therefore, they must rest with the Government of Bangladesh.

157. Having to bear these risks should not be counted against the PPP concept. Every alternative solution or procurement method will involve exactly the same risks no matter how higher education is financed.

VI. UNIVERSITY BUSINESS INCUBATION

158. Innovation and entrepreneurship are essential elements in the creation of economic activity, facilitating growth, employment, and other income generation. However, although starting a business requires specific administrative know-how and seed capital, entrepreneurs often lack both. It is also uncertain whether an innovation will be a success. It can take longer than traditional banks or venture capitalists are willing to wait. Furthermore, starting a business also requires social networks that provide access to new ideas and

resources and facilitate credibility through the formation of alliances.\textsuperscript{36} Business incubation can be a useful mechanism to overcome these challenges by addressing the market failures and helping start-ups to gain the necessary know-how, seed capital, and networks.

159. A business incubator is by definition a support environment for start-up companies. Incubators can be viewed as catalysts or even accelerators of new firms, especially of high-tech start-ups, and ideally play an important role in providing the infrastructure for nurturing such business development for the benefit of both the university and the industry.

160. A university business incubator (UBI) can (i) support entrepreneurial initiatives and innovative thinking originating from students and university researchers and (ii) be the institutional arrangement to create linkages between university and industry to foster knowledge flows, exposure, and inspiration.

A. Advantages of University Business Incubators

161. A UBI integrates the function of an incubator into the university infrastructure and provides several advantages:

(i) \textbf{Easier setup.} An incubator is a university department designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services. The typical incubator services to the tenant firms are shared business support services. They include rental office space, internet access, server capacity for website hosting, photocopy and other publishing equipment and services, meeting rooms, business coaching, accounting and legal advice, front desk, and other services. They allow the entrepreneurs to concentrate solely on the core business development and groom their business relatively quickly. The incubator minimizes many of the challenges associated with the practical side of new business development. Moreover, being in close proximity to other start-ups is an advantage as it facilitates networking opportunities and enabling discussions concerning common problems and challenges.

(ii) \textbf{Link with national socioeconomic development agenda.} Private companies but also public entities can sponsor business incubation programs, with the ambition to build an innovative state that will foster economic growth. Many governments actively develop national innovation programs. UBIs can be seen as an easy implemented and cost-saving concept for governments to support entrepreneurship. A UBI integrates the function of an incubator into the university infrastructure and provides several added advantages.

(iii) \textbf{University access to the latest knowledge and technology.} Through a UBI, the university can enter into collaboration with research and development contracts (university–industry linkages, for example). University can provide access to the latest knowledge in the area of interest thus resulting in the development of more innovative products. A UBI being hosted by the university may also result in reduced development costs, as research facilities are available. Private companies hosted by the UBI benefit from university-related services such as student employees, faculty consultants, and the university’s institutional support system.

(iv) \textbf{Promotion of the firms to students.} The entrepreneurs can make their firms known to students in specific disciplines. The start-up companies can easily employ students and recent graduates. This is positive for both the

\textsuperscript{36} Nigel Culkin. 2013. Beyond being a student. An exploration of student and graduate start-ups operating from university incubators. \textit{Journal of Small Business and Enterprise Development}, 20 (3).
entrepreneurs, who get access to a talented recruitment base of employees, and students, who gain valuable work experience during their studies that enhances employability.

(v) Enhancing networks. A UBI can develop and facilitate networks with other third parties. Successful start-ups that graduate from the UBI centers can form a direct and easy reachable contact to the business world. A UBI should also attract the attention of external companies that are interested in innovative and new ideas. Thus, a UBI can serve as a testing ground to see if research generated by the university is valuable and meaningful for the industry. The university can be the platform that establishes contacts with business partners, suppliers, and customers via cross-sector (Triple Helix\(^{37}\)) seminars and conferences. Contacts will also help the start-up firms to access external grant support from the government and venture capitalists, angel investors, and other private sources. The prospects for accessing business innovation opportunities may even attract direct private sponsorships from renowned and well-established companies.

162. The concept of a UBI is to link talent, technology, capital, and know-how to leverage entrepreneurial talent, accelerate the development of new technology-based firms, and speed the commercialization of technology. If focused toward national development priority sectors, this can be an effectual development intervention.

163. The following elements are also important.

(i) Cost-effectiveness. The university partnership reduces set-up costs as facilities and adequate staff is already available.

(ii) Financing model. The financial support of the university is only necessary at the beginning. An appropriate financing model can make the incubator self-sustaining over the long term. Examples from UBIs in Africa suggest that the UBI get an equity share of 20%–30% of incubated companies. The same arrangement goes down to 6% \(^{38}\) in examples from India, where entrepreneurial success is observed being realized in shorter time. This facilitates that both sides have an interest in the good performance of the start-up firm.

(iii) Selection process. Clear criteria for choosing incubatees is key. A convincing business plan is bound to be one essential screening criterion.\(^{39}\)

(iv) Support staff. Dedicated support staff, including advisors and mentors experienced in academic research as well as in entrepreneurial and business skills, are available in universities.

(v) Support services. Besides the provision of facilities (e.g., computers, internet, office space), it is important to help with technical skills and business

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\(^{37}\) Stanford University, Triple Helix Research Group: The concept of the Triple Helix of university–industry–government relationships initiated in the 1990s by Etzkowitz (1993) and Etzkowitz and Leydesdorff (1995), encompassing elements of precursor works by Lowe (1982) and Sábato and Mackenzi (1982), interprets the shift from a dominant industry–government dyad in the industrial society to a growing university–industry–government triad in the knowledge society. The Triple Helix thesis is that the potential for innovation and economic development in a knowledge society lies in a more prominent role for the university and in the hybridization of elements from university, industry and government to generate new institutional and social formats for the production, transfer, and application of knowledge. This vision encompasses not only the creative destruction that appears as a natural innovation dynamic (Schumpeter, 1942) but also the creative renewal that arises within each of the three institutional spheres of university, industry and government, as well as at their intersections.

\(^{38}\) Examples of UBIs from India Society for Innovation and Entrepreneurship, 2013.

\(^{39}\) This should motivate inclusion of entrepreneurship training in all subjects of the university, which would also contribute to dissolving the previously mentioned mental barriers.
capacity, such as in advertising, sales, marketing, financing, and legal aspects.

(vi) **Student employment and improvement of curriculum.** Students can put their academic knowledge into practice when working at the incubator. The support of incubatees can be part of the official examined curriculum to raise motivation. Besides creating employment, interest in entrepreneurship is fostered among students.

(vii) **Support network.** A broad business support network can be developed with other research institutes and UBIs, government ministries, and institutions.

**B. Considerations in the Case of Bangladesh**

164. One criticism of UBIs from international lessons learned is a one-sided knowledge transfer from university to business. It shall be kept in mind that the success of UBIs strongly depends on mutual exchange and cooperation between government, universities, and the private sector.

165. Bangladesh’s public universities (which this chapter mostly relates to) have significantly less research activity. They face challenges in regards to teachers’ technical capacity. Current public universities need to overcome these challenges to be able to contribute to the knowledge transfer to the incubatee. It is a critical precondition for making the UBI fulfill its purpose. It represents challenges in designing the incubator, not only to make the incubator serve the purpose, but also to make it contribute to addressing these challenges in the course of its operations.

166. The government has a critical role to play in generally strengthening HEIs, particularly in respect to the strengthening of faculty capacities and putting quality assurance systems in place, such as the suggested linkages to and cooperation with highly credible international universities.

167. Particularly with respect to UBIs, the government is further responsible for preparing the policy and legal frameworks granting the universities the necessary autonomy, flexibility, and opportunity to collaborate with the private sector and other funding sources to smoothly, transparently, and accountably raise and channel funds, such as those raised by research contracts.

168. The government is also responsible for regulating and stimulating private-sector-driven growth and value creation, taking into account social and environmental considerations, to secure inclusive and socially balanced development. In Bangladesh, a high level of entrepreneurial spirit is observed. Given the right incentives and a conducive environment, it is predicted that the private sector will take up any business opportunity deemed profitable. It is witnessed that the private sector in Bangladesh is not only entrepreneurial, it is also creative and innovative in finding ways of developing their businesses for instance via corporate social responsibility schemes. The latter is worth studying more carefully with respect to the design of a UBI and building on existing linkages between public and private education and private sector service delivery. The private sector in Bangladesh seems to have considerable innovative expertise of possible value to the universities, and offers opportunities to explore mutual value creation.

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40 Turning waste into value, adding more value to agricultural crops and other production involving the people at the base of the income pyramid, value chain development in connection with foreign direct investment/investors including enhancement of working and environmental conditions in, for instance, the garment and textile production processes, building on the myriad of income generating activities facilitated by the huge number of nongovernment organizations existing in Bangladesh representing a wealth of innovative thinking.
169. A UBI can easily become just another form of entrepreneurship class that teaches how to start a business without further follow-up. The UBI should be focused on helping the start-up companies start to evolve and become independent from the center.

170. Seed funding can make the crucial difference between a business idea and a start-up company. That is why special attention must be paid to an appropriate financing model and the generation of seed capital for the incubatees. When supporting entrepreneurs, the government or university takes the investment risk and should benefit equally when the business is successful to secure revolving funds that are accessible to incoming incubatees. A proper distribution of a start-up company’s shares can be a useful mechanism to ensure that not only risk but also success is shared.

171. The knowledge economy is linked to the global challenges. They include climate change, environmental safeguards, and food security. The economic players are increasingly relying on advantages offered by high-tech solutions and social networks with use of social media and communication channels. This has increased use of new communication and marketing channels calls for social science and communication skills combined with science and engineering. This applies for both business-to-business and business-to-consumer product development and marketing. These trends emphasize the need for all fields of interdisciplinary skilled teams.

C. Best International University Business Incubation Practice

**Box 17: Kenya—Strathmore Innovation and Technology Transfer Program**
The Strathmore Innovation and Technology Transfer (SITT) program established a technology and business incubator at Strathmore University. The project started very small under the name SBS Business Incubation Program in 2007 but then grew due to a government grant of $18,000. The SITT program focuses on information and communication technology and takes advantage of teaching, learning, and research outputs from the Faculty of Information Technology. The center takes 20 incubatees that are current or former students of the university. The services include support in technical skills and business capacity building in advertising, sales, marketing, financing, legal aspects, and other areas. The number of successful graduating businesses is around 10–20 with long-term success rates of around 75%. The Government of Kenya as well as international companies like Nokia and Samsung support the center (Kumwaka, 2014).

**Box 18: India—Indian Institutes of Technology**
It is the institutional mission of the Indian Institutes of Technology (IIT) Bombay to encourage and promote entrepreneurship. In 1999, the institute adopted the concept of business incubation. It now hosts the Society for Innovation and Entrepreneurship (SINE), which provides “an environment to translate knowledge and innovation into creation of successful entrepreneurs.” It is noteworthy that IIT Bombay now holds more than 80 patents in varied streams of engineering and it has filed 53 more patent applications (World Bank. 2011. The Road to Academic Excellence: The Making of World-Class Research Universities. Washington, DC.). The Ministry of Communication and Information Technology finances seed grant support to SINE. The grant is meant for extending seed support in the form of soft loans to incubate companies in IT and IT-enabled areas. A nominal monthly charge will be levied to a company for the first 18 months by SINE. The indicative range of the equity holding by SINE for infrastructure will be 6%–8%. ([www.sineiitb.org/about.html](http://www.sineiitb.org/about.html))
Box 19: Examples from the United States of America

Ben Craig Center
The Ben Craig Center (BCC) at the public University of North Carolina was established in 1986. It is a nonprofit corporation, governed by a board of directors that includes regional entrepreneurs, business executives, professionals, and university leaders. In the past 20 years, the BCC has been home to 119 organizations. Approximately 90 firms are considered graduates. Its companies have created more than 1,200 jobs and attracted $175 million in venture capital.

Its operation is funded primarily through client rent and fees. Additionally, the university and corporate sponsorship provide substantial financial support. Resident clients pay rent and receive a variety of business advisory services at no additional charge. Affiliate clients pay an annual fee to receive similar business advisory services. The center offers accounting advisory services on a monthly fee basis.

It is on the one hand a resource for faculty, researchers, and students seeking to commercialize innovations through new venture formation, and on the other hand a portal into the university for early-stage entrepreneurs seeking to leverage university resources. However, its impact on the university itself in the form of student jobs and faculty consulting was limited. Despite the center’s close physical proximity to the university and the university research park, only a small number of students worked for the center and a couple of faculty members were involved as entrepreneurs.

Advanced Technology Development Center
The Advanced Technology Development Center (ATDC) is a technology incubator sponsored by the Georgia Institute of Technology. It also receives legislative and financial appropriations from Georgia's governor and General Assembly.

The center was founded in 1980 as one of the first technology incubators in the United States, and has since fostered innovation and economic development by graduating more than 150 companies, which together have raised over $2 billion in outside financing. Forbes recently named it as one of the “Top 12 Business Incubators Changing the World.” The center focuses on incubating early-stage companies (0–3 years), with the company's founding date generally coinciding with the firm's admission to membership into the incubator. ATDC companies receive education programs, hands-on coaching from experienced entrepreneurs-in-residence, are eligible for suite space in the incubator, and receive priority in programs such as Industry Connect.

The ATDC managers actively solicit applications from new ventures, and admit between 10% and 20% of their applicants after a fairly stringent, two-staged review process. Knowledge can flow from a university to an incubator firm through a licensing agreement. Firms are also founded to commercialize technologies invented at Georgia Tech and subsequently license it from the institute's Office of Technology Licensing. These licenses are exclusive in the sense that they are only given to one firm.
D. Incubators in Bangladesh Public Universities

172. A UBI’s stakeholders contribute to its development in a variety of ways:

(i) **University**: infrastructure (as part of the public–private partnership), and interdisciplinary support team of faculty and researchers.

(ii) **Incubatees**: creative thinking and innovation, and feedback of lessons learned to university faculty and researchers on applying research results in practice.

(iii) **Well-established businesses (outside the university)**: Financial support (sponsorships, research assignments to university); exposure and insight into the industry; internships for students; and mentoring of incubatees.

(iv) **Government**: development of the HEIs as suggested in the present report, and development of a policy and legal framework securing a conducive business environment.

(v) **Public sector**: contribute openly to public–private innovation processes, and share knowledge and challenges the public sector faces so the private sector can better contribute to development solutions.

E. Outcomes

Expected outcomes for the stakeholders include the following:

173. For the university:

(i) The incubator can work as a pilot project that can organically develop the higher education sector toward enhanced interdisciplinary cooperation, applied research, innovation, and problem-focused learning methodology.

(ii) Economic development actors include private for-profit companies as well as social enterprises, private not-for-profits, and nongovernment organizations. The incubator could develop criteria to screen out unviable business models. The incubator can also assess the social and environmental impact of the venture. It could welcome all kinds of development, and explore linkages with impact capitalists and private foundations. If so, such incubators will in turn strengthen the relevance of the HEIs across all disciplines, supplying candidates better qualified to create value and contribute to addressing development challenges.
174. Well-established businesses (outside the university) gain insight into interdisciplinary initiatives and an expanded recruitment base.

175. The public sector benefits from solutions to challenges that neither the public nor private sector has managed to address in own capacity.

176. Incubatees get an accelerated development process and access to capital, business support services, skilled employees, faculty advisory, and other resources.

F. Applying Public–Private Partnership for University Business Incubators

177. A UBI can be one or more public–private cooperation contracts on top of the PPP infrastructure contract, meaning that the UBI can be hosted in the physical facilities built in a PPP–university arrangement. The services that the UBI will offer are different from the PPP and will require different service delivery conditions and contracts. Information technology hardware and services are one; financing schemes (including grant seed funding are another.

G. First Steps to Take for University Business Incubator Design for Bangladesh

178. Commission a thorough study to map the current development challenges, current technical skills capacity against national development objectives, bottlenecks for perfect skills match, and relevance of higher education, and recommend the best possible strategies for the government (including relevant ministries), university, and industry linkages and cooperation.41

179. Initiate an incubator at one university and one in a rural public university as pilot projects to inform the design and policy formulation for HEI development as advised in the present report. Building incubators to meet specific regional development needs will also provide valuable lessons for future projects.

180. **Recommendations.** (i) A well-defined policy for PPP is needed to set a road map for implementation of PPP projects in the higher education sector in Bangladesh. (ii) The projects can be implemented with support from a PPP cell established in MOE overseen by the PPP Office. (iii) The new PPP policy frameworks (as in the 2010 version of the Government’s PPP policy guidelines) must create confidence in the investor community by providing information on the types of support. (iv) The government can give to increase incentives to the investors. Incentives forUILs and incubators or innovation labs should also be included.

181. The following preparations are needed:

(i) **Clarify scope within which MOE is prepared to work with PPP and university–industry linkages**

(ii) **Clarify current conditions:**
   a. Identify which tasks are currently assigned to the government, and which tasks could be handled by the private sector.
   b. Identify the amount spent on higher education by the Government of Bangladesh. Measure the price per student for expenses benefiting quality of education (quality of program, learning environment, and teachers).
   c. Clarify the current amount spent on university buildings and the quality standard of the buildings.

(iii) **Identify an appropriate PPP model based on assessment of its expected role in education and of the costs and benefits of private involvement in the sector:**
   a. Assess and develop a model for consultations among stakeholders
   b. Clarify which payment model could be used in the future—out-of-pocket, gap funding, annual government payment to the private party, etc.
   c. Develop standard contracts to be used for the developed model and for the detailed project design.
A. Public–Private Partnership Policy Development

(i) Develop a specific PPP strategy for higher education.

(ii) The higher education PPP policy must stress public interest goals such as social equity, inclusiveness, transparency and accountability, and quality of education. A PPP policy should include:

   a. the issue of social equity and inclusiveness through promoting more access of disadvantaged groups to higher education;
   b. transparency and accountability in the operations of the PPP projects; and
   c. improved quality and relevance of higher education for the national economy and its development.

(iii) Make the strategy inclusive and allow the private sector to play an active role:

   a. Create the necessary legislation to legitimize the position of private institutions.
   b. Establish clear and objective criteria and processes for establishing and registering private higher education institutions.
   c. Provide a direct government subsidy to students and teachers, generally in the form of student loans but sometimes as subsidies to qualified teachers.
   d. Provide equal opportunities to the private institutions as well as public institutions to receive competitive grants, that is, for research grants or matching grants for donations.

(iv) Promote PPP in higher education:

   a. Facilitate the establishment and development of research universities with industry collaborations.
   b. Support university business incubators and science parks.
   c. Encourage private grants for higher education, e.g., through matching funds programs.
   d. Introduce elements in the tax system (e.g., tax rebates, concessions, and waivers) to create incentives for private sector participation in higher education.
   e. Actively create new PPP models and be open to involving the private sector in various ways.

(v) Involve stakeholders in the process of formulating the policy, especially the business community, civil society, and university administrators. One possible model is the creation of a platform for policy dialogue between the government and stakeholders.

(vi) Develop government capacity to work with the specific PPP projects (e.g., building competencies for a project that involves construction) and ensure that the PPP agency has adequate capacity.

(vii) Examine if current laws (e.g., specific labor laws for teachers) can support PPP in higher education.

(viii) Clearly define the role of the UGC or any other suitable government agency to monitor the implementation of PPP projects.
(ix) Establish a research and development committee constituted of selected members from the universities, the Ministry of Education, and private sector firms. It would identify potential areas for research and development, determine the responsibilities of the parties involved, and oversee the development of technology with collaborative efforts.

B. Public–Private Partnership Implementation

(i) Identify specific pilot projects and conduct feasibility studies as part of the PPP strategy:
   a. Design standard models (contracts, risk sharing, etc.) for the pilot projects (simple model).
   b. Identify potential private bidders (teams of competence).
   c. Set specific time frames for the expected tender and project milestones.
   d. Design and plan the structure and tender of pilot projects.
   e. Implement the pilot.
   f. Evaluate the pilot projects and adapt the PPP strategy accordingly.

(ii) Develop monitoring tools and frameworks to measure and evaluate the performance of PPP projects.

(iii) Public and private partners should agree on the output- or performance-based specifications to be included in the contract as well as sanctions for nonperformance.

(iv) Use a transparent, competitive, and multistage process for selecting private partners.

(v) Public authorities can increase the popularity of PPPs by putting in place an effective communication and awareness strategy to encourage informed debate on the role and impact of these partnerships.
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